



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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No. NEPRA/R/DG(LIC)/LAM-01/ 8389

May 31, 2022

Chief Executive Officer

Central Power Purchasing Agency (Guarantee) Limited
73 East, A.K. Fazl-ul-Haq Road, Blue Area, Islamabad

Subject: **Grant of Market Operator Licence No. MOL/01/2022**
Licence Application No. LAM-01
Central Power Purchasing Agency (Guarantee) Limited (CPPA-G)

Reference: *Your application submitted vide letter No. CPPA-G/2021/CEO/1153-56 dated 14.10.2021*

Enclosed please find herewith Market Operator Licence No. MOL/01/2022 granted by National Electric Power Regulatory Authority (NEPRA) to Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) pursuant to Section 23A and 23B of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, as amended or replaced from time to time. Further, the determination of the Authority in the subject matter, alongwith dissenting note by Engr. Rafique Ahmed Shaikh, Member NEPRA, Market Commercial Code (attached at Annex-A) and CTBCM Test-Run Plan (Attached at Annex-B) are also attached.

2. Please quote above mentioned Market Operator Licence No. for future correspondence.

Enclosure: As Above



(Syed Safeer Hussain)

Copy to:

1. Secretary, Power Division, Ministry of Energy, 'A' Block, Pak Secretariat, Islamabad
2. Secretary, Ministry of Planning & Development, Government of Pakistan, 'P' Block, Pak Secretariat, Islamabad
3. Secretary, Ministry of Finance, Government of Pakistan, 'Q' Block, Pak Secretariat, Islamabad
4. Secretary, Energy Department, Government of Punjab, EFU House, 8th Floor, 6-D Jail Road, Lahore
5. Secretary, Energy Department, Government of Sindh, State Life Building -3, Dr. Zia-ud-din Ahmed Road, Karachi
6. Secretary, Energy & Power Department, Government of Khyber Pakhtunkhwa, Block-A, 1st Floor, Abdul Wali Khan Multiplex, Civil Secretariat, Peshawar
7. Managing Director, NTDC, 414 WAPDA House, Lahore
8. Managing Director, Private Power & Infrastructure Board (PPIB), Ground & 2nd Floors, Emigration Tower, Plot No. 10, Mauve Area, Sector G-8/1, Islamabad
9. Chief Executive Officer, Alternative Energy Development Board (AEDB), 2nd Floor, OPF Building, G-5/2, Islamabad

P-1/2

1. Chief Executive Officer
Lahore Electric Supply Company (LESCO)
22-A, Queen Road, Lahore
2. Chief Executive Officer
Gujranwala Electric Power Company (GEPCO)
565/A, Model Town, G.T Road, Gujranwala
3. Chief Executive Officer
Multan Electric Power Company (MEPCO)
NTDC Colony, Khanewal Road, Multan
4. Chief Executive Officer
Peshawar Electric Supply Company (PESCO)
NTDC House, Shami Road, Peshawar
5. Chief Executive Officer
K Electric (KEL)
KE House, 39 B
Main Sunset Boulevard, LCMPL Phase-II,
Karachi
6. Chief Executive Officer
Quetta Electric Supply Company (QESCO)
Zarghoon Road, Quetta
7. Chief Executive Officer
Islamabad Electric Supply Company (IESCO)
IESCO Head Office Street 40
Sector G-7/4, Islamabad
8. Chief Executive Officer
Faisalabad Electric Supply Company (FESCO)
Abdullahpur, Canal Bank Road, Faisalabad
9. Chief Executive Officer
Sukkur Electric Supply Company (SEPCO)
Old Thermal Power Station, Sukkhur
10. Chief Executive Officer
Hyderabad Electric Supply Company (HESCO)
HESCO Headquarter
WAPDA Complex, Hussainabad, Hyderabad
11. Chief Executive Officer
Tribal Areas Electricity Supply Company
(TESCO)
213-NTDC House
Shami Road, Peshawar

National Electric Power Regulatory Authority (NEPRA)

Determination of the Authority
in the Matter of Application of Central Power Purchasing Agency (Guarantee)
Limited for Grant of the Market Operator Licence

May , 2022

Case No. LAM-01

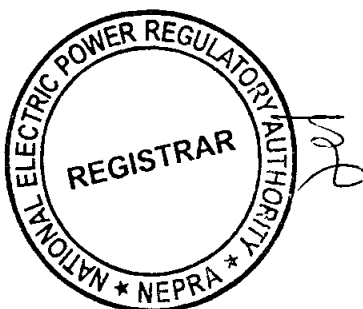
(A). Background

(i). The Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "Act") was amended vide the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018 (the "Amendment Act") promulgated on May 02, 2018 wherein different new provisions were introduced to provide a framework for the development of competitive electric power market in the country.

(ii). In this regard, *inter alia*, Sections 23A and 23B were introduced in the Act which provide for the grant of licence as well as duties and responsibilities of the Market Operator (the "MO"). However, in terms of Section 1(3) of the Act, the said Sections (i.e. 23A and 23B) shall come into force within five (05) years of promulgation of the Amendment Act i.e. on May 02, 2023, or on such earlier date as the Federal Government may notify.

(iii). The Authority vide its determination dated November 16, 2018, granted a registration No. MOR/01/2018 (the "Registration") to Central Power Purchasing Agency (Guarantee) Limited (the "CPPA-G") to act as the MO under the NEPRA (Market Operator Registration, Standards, and Procedure) Rules, 2015 (the "Market Rules"). The Registration is valid for five (5) years from the date of its issuance or till such date on which Section 23A and 23B of the Act come into force as per Section 1(3) of the Act, whichever is earlier.

(iv). In compliance with the directions of the Authority given in the above determination for the Registration, the CPPA-G submitted the High-Level/Conceptual Design of the Competitive Trading Bilateral Market (CTBCM). The Authority through its Determination dated December 05, 2019, approved the same and directed CPPA-G to submit a Detailed Design of the CTBCM ("CTBCM Design") along with its Implementation Roadmap (the "Implementation Roadmap") for its approval.



(v). In compliance to above directions of the Authority, the CPPA-G submitted the CTBCM Design and the Implementation Roadmap for approval of the Authority. In this regard, the Authority approved the CTBCM Design and Implementation Roadmap through its determination dated November 12, 2020 (the "CTBCM Determination") which was also recognized in the National Electricity Policy 2021 (the "NEP 2021") approved by the Council of Common Interest ("CCI").

(B). Filing of the Application

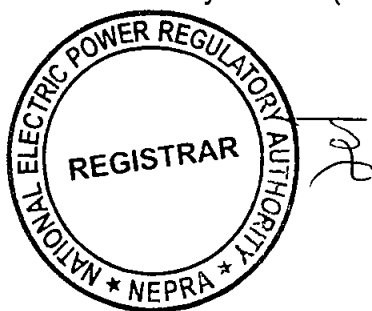
(i). Under Sections 23A and 23B of the Act, the CPPA-G submitted an application (the "Application") on October 14, 2021 for grant of the licence for the MO along with the draft Market Commercial Code (the "MCC") for approval of the Authority.

(ii). The Authority considered the Application and decided to put the same on hold due to moratorium on Sections 23A and 23B of the Act and absence of the relevant eligibility criteria rules to be prescribed by the Federal Government. The said decision of the Authority was communicated to the CPPA-G on January 11, 2022 and in response to the said the CPPA-G through letter dated January 24, 2022, submitted that in terms of Section 22 of the General Clauses Act, 1897, the Authority may process the Application despite moratorium and absence of the relevant eligibility criteria rules.

(iii). On the above submission of the CPPA-G, the Authority reconsidered the matter and decided to process the Application. Accordingly, notices were published in the press on March 05, 2022 to seek comments from the general public, interested/affected parties, and the stakeholders. Further to the said, separate letters were also sent to the relevant stakeholders on March 08, 2022 seeking their comments in the matter.

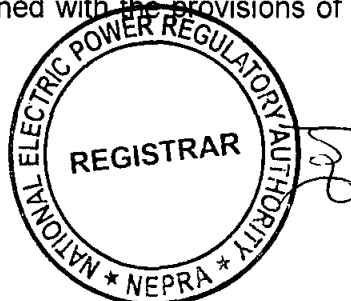
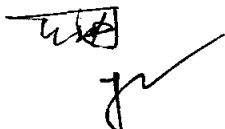
(C). Comments of Stakeholders

(i). In reply to the above, the Authority received comments from eleven (11) stakeholders including K-Electric Limited (KEL), National Transmission & Despatch Company (NTDC), Gujranwala Electric Power Company Limited (GEPCO), Lahore Electric Supply Company Limited (LESCO), Punjab Power Development Board (PPDB), Uch Power Private Limited (Uch) and Uch-II Power Private Limited (Uch-II), and Independent Power Producers Advisory Council (IPPAC), Engro Energy Limited,



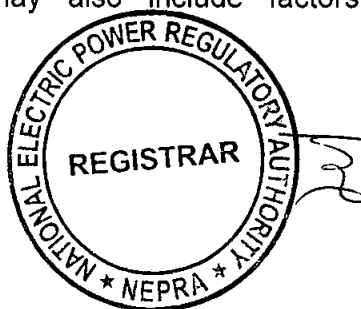
Harappa Solar (Private) Limited and CPPA-G power purchase team/SPA. The salient points of the comments received from the above stakeholders are as follow:

- (a). KEL submitted that it is System Operator (the "SO") for its service territory and the same should be reflected in the MCC. Further, it may also be included as a representative of the Transmission Service Providers in the Commercial Code Review Panel (CCRP). KEL commented that how a generator will recover its cost of keeping itself available in a must-stop scenario and the rationale for not being compensated. KEL highlighted that the mechanism provided for the capacity determination of generators do not cater for the inherent intermittency of renewable generators. In view of the said, the reserve requirement for smooth utility operations by induction of Alternative and Renewable Energy (the "ARE") sources need to be such that it can work in conjunction with the said technology without having any adverse impact on the operational services of the utility.
- (b). KEL explained that the methodology given in the MCC to calculate capacity obligation for Supplier of Last Resort (SoLR) uses transmission losses of NTDC. In this regard, it was suggested that as an SoLR for its area of service, the transmission losses of KEL should be used while calculating its capacity obligations. Regarding the security cover mechanisms provided in draft MCC, it was submitted that KEL is in discussions for arrangement of upto 2,050 MW supply from National Grid and the agreements in this regard have already been initialed. In this regard, the said agreement(s) included separate security mechanism for off-take of supply by KEL from National Grid. Therefore, KEL may be excluded from the requirement of such security cover and the guarantee amount. Regarding the suspension and termination of market participants, KEL suggested that in case of a default or breach of the MCC, instead of issuing suspension or termination orders, the MO should refer the matter to the Authority for its decision.
- (c). NTDC commented that the duties of the SO provided in the draft MCC should be aligned with the provisions of the Act and the NEP 2021.



As per the NEP 2021, transmission expansion plan is the responsibility of the National Grid Company (NGC) and the SO may develop and consolidate generation and transmission plans for approval of the Authority. It was suggested that the definition of connection point in the MCC may be aligned with the definition provided in the draft Grid Code. Further, in the draft Grid Code, the list of variable generation costs is to be provided by the MO, therefore, the reference to the SO in the draft MCC may be removed. In addition, NTDC highlighted that the draft code refers only to the metering provisions of the Grid Code, however it will be more appropriate that the reference of Distribution Code may also be added. Regarding the clause of validation checks by the MO on the metering data, it was suggested that detailed Commercial Code Operating Procedure (CCoP) should be prepared for the same. Further, the commercial metering report prepared by Metering Service Provider (the "MSP") should not include the compilation of all proposals pertaining to metering which were submitted for amendment in draft MCC, the Grid Code or the Distribution Code as the amendments in the said codes will be done as per the procedure provided in the respective codes. It was further highlighted that the draft MCC should not identify severely congested areas, only the commercial compensation to the generators may be included.

- (d). NTDC also commented that providing the information to the MO regarding the quantity of energy, for which compensation may be paid to each Generator, is the role of MSP and the SO will only highlight such generators. Regarding the provision of verification of start-up costs, it was submitted that market surveillance is the responsibility of the MO and the Authority, the SO will use the variable generation costs and start-up costs as received, however in case where the SO has any reservations or doubts regarding the appropriateness of the costs same will be communicated to the Authority or the MO. NTDC also suggested that the list of factors under CCOP for determining critical hours may also include factors like fuel constraints,



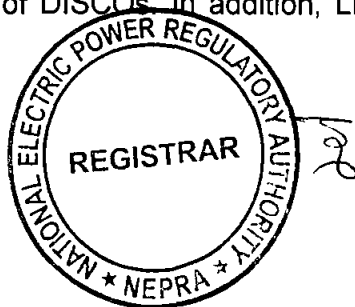
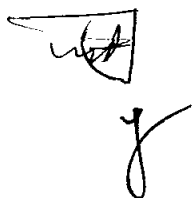
operational constraints and transmission reliability considerations. Further to the said, it was submitted that since Balancing Mechanism for Capacity (BMC) will be run post-dispatch, the calculation of capacity balancing price should also be based on the actual marginal price, critical hours and variable costs determined rather than simulated values of next year.

- (e). In addition to the above, NTDC inquired about the provision for imposition of fine on the SO directly by the MO. Further, it was suggested that the value of 90% availability of capacity in an hour may be increased to 95% to qualify as fully loaded generator. Moreover, such availability should also take into account the factor of fuel constraints. NTDC also highlighted that there is no methodology for calculation of hourly marginal price in case of generation shortfall. Ideally, the price signal for the hour with generation shortfall should be appropriately high to reflect immediate generation requirement.
- (f). Furthermore, the NTDC raised following queries pertaining to the MO licence and commercial code: (i). MCC is one part of the CTBCM scheme, and the scheme and licensing should be done coherently with Grid Code, which is still being prepared; (ii). What rules and regulations will govern the MCC? Is it prudent to grant license in the absence of clarity on relevant framework? Under MCC, the MO has assumed the role of contract registry and with rights to govern compliances. What would be the interface of the SO and transmission company in this arrangement? (iii). What would be the role and liabilities of transmission company and system operator, jointly and severally, as MSP etc. NTDC will have to ensure compliance with incident report etc. and potential penalties imposed by the MO; (iv). calculations of transmission losses will be attributable to TSPs. It is envisaged under the Commercial Code that there may be more than one TSP, what would be NTDC interface and financial/operational impact on NTDC? (v). How will the payments of legacy contracts be handled? (vi). What will happen to contracts already in effect? Are there any transactional requirements in the process to ensure



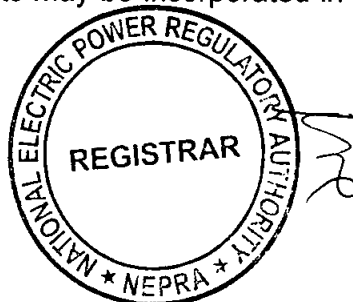
compliance? (vii). Can the MO impose penalties on NTDC? (viii). What is the required security cover / guarantees available to NTDC and any requirements from NTDC? (ix). Will NTDC be enrolling with the MO as service provider? Whether CCOPs to be made should be approved by the Authority (x). Whether the essential ICT infrastructure required for power market administration and settlement of commercial transactions under the CTBCM is available with relevant entities including System Operator? (xi). Whether the mechanisms, processes and formulas given in the MCC for the enrolment, imbalance settlement, contract registration, capacity obligations, capacity certification, security covers, dispute resolution and enforcement etc' are enable and ensure the liquid and efficient competitive wholesale power market under the CTBCM?

- (g). GEPCO commented that in the definition of congestion as provided in the draft MCC, the reference to Distribution Code may also be added. Further, GEPCO inquired that whether the existing committed and candidate generation projects in IGCEP would be treated as legacy or otherwise. It was commented that the definition of SoLR may be aligned with that provided in the relevant rules and regulations. It was also stated that the right of interpretation of the draft MCC should rest with the Authority. It further stated that in the CCRP, at least four members of XW-DISCOs should be considered. GEPCO commented that there must be a proper mechanism for participants in case of deregistration caused by premature termination of contracts. It was submitted that the allocation factors for XW-DISCOs should be determined by the Authority and specific allocation of KE in this regard should be mentioned.
- (h). LESCO submitted that the eligibility criteria rules for licence of the MO have not been approved. Also, the model of institutional arrangement of future role of CPPA-G is not finalized yet. The proposed organogram of the MO need to be rationalized. LESCO suggested that trainings may be held for capacity building of the market related departments of DISCOs. In addition, LESCO was of the view that



clarity and discussion was required on many clauses of the MCC and suggested various editorial nature changes in the same. In addition, LESCO enquired whether the MCC has been submitted after review of the CCRP or not. It was suggested that each DISCO should have been nomination in the CCRP. Instead of an individual expert in the dispute resolution mechanism, a dispute resolution board may be formed. LESCO was of the view that upto 132 kV voltage level, DISCOs may be assigned the role of MSP instead of NTDC. Further, the representative of the Authority should have voting rights in the CCRP.

- (i). PPDB commented that the Authority can allow multiple the MO licenses as per the provisions of Section 23A of the Act. Further, the MO licence cannot be transferred to the new companies and same is not allowed under the Act. PPDB stated that as CPPA-G is operating under the Registration and therefore can it charge the MO fee? It was further commented that as the licence of most of the DISCOs/SoLR have expired therefore CPPA-G may facilitate them in the procurement of electric power. Further, CPPA-G is performing functions of market operation using its current human resource and infrastructure. It further stated that though it is understandable that creation of new companies would involve additional costs, however, prior to incorporation and operationalization of new entities, heavy CAPEX and OPEX requirement to the tune of PKR 261 and 369 million seems excessive. The above costs may be reviewed as the end consumer of electricity would eventually bear its burden. Further, PPDB commented that the envisaged role of formulation of Independent System Operator (ISO) is not supported as the approved CTBCM assigns the function of transmission network operation to TNO and DNOs. Lastly, PPBD submitted that provincial entities may also be represented in the CCRP of the commercial code.
- (j). Uch & Uch-II submitted that certain protection clause for the existing legacy contracts may be incorporated in the MCC. Allowing the MO

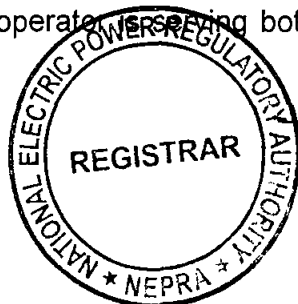


to have the right of interpretation of the terms of the MCC may raise the issue of conflict of interest and therefore should not be considered. Moreover, the persons exempted from enrolling as market participants should also be the members of CCRP. The Registration of legacy contracts may affect or impair the operation of the actual terms of the Power Purchase Agreement (the "PPA") specifically in the context of payment obligations of the off-taker. Additionally, the PPA(s), largely govern the metering systems installed at the respective power plants including the modalities of testing, calibration and reading, and in such case what would be the role of the MSP, as it may affect the rights and obligations of Uch and Uch-II. The draft MCC does not clearly consider the implications resulting from force majeure events and outages of the relevant generation facilities.

- (k). IPPAC commentated that the existing rights available to the Independent Power Producers (the "IPPs"), including, without limitation, in their PPAs, Implementation Agreements (the "IAs"), the Generation Licences/Tariffs and Direct Agreements with Lenders should not be affected. CPPA-G did not take on board the IPPs during the implementation phase of the CTBCM Design despite directions of the Authority. The security of the power system of the country is primarily based on financial and sound administrative capability of the power purchaser and the government to eliminate the menace of circular debt. Without eliminating the root cause of the circular debt, the shifting of burden to the weak DISCOs may not bring the desired results. Unless and until the issue of compliance by WAPDA/NTDC/CPPA-G and fuel suppliers with their contractual obligations vis a vis IPPs is not resolved, it may not be possible to have a successful transition towards CTBCM.
- (l). Engro Energy Limited acknowledged and appreciated the efforts of the Authority for opening of the power market and supported grant of the MO licence to CPPAG as an essential step for smooth rollout and operationalization of the bilateral contact market under the CTBCM.



- (m). HSPL commented that MCC should list down the entities specifically exempted to be enrolled as Market Participants for participation in the CTBCM. The projects which have already received Letter of Support from PPIB / AEDB and/or Committed under IGCEP have inadvertently been missed. HSPL requested to also exempt these projects from the enrollment under CTBCM as the same projects have already completed important project milestones and are in advance stages of development. Similarly, a generator selling its energy and/or capacity through energy/power purchase agreement with the CPPA-G (Legacy Contracts) before Competitive Market Operation Date (CMOD) is also exempted from enrolment. Accordingly, it was requested to meet out same treatment to generators having executed energy purchase agreement(s) with KEL. It was further submitted that MCC allot initial firm capacity to new generating units either dispatchable or non-dispatchable. The Equivalent Availability Factors for non-dispatchable or renewable technologies are unlike those of dispatchable technologies due to obvious reason of intermittency of renewable energy sources. However, the disadvantage can significantly be mitigated by Battery Storage System which is also economically more feasible now. Therefore, it was proposed to also determine the Availability Factor for non-dispatchable technologies with Battery Storage systems. In addition, it was commented that in MCC, the market participants and TSPs are required to provide and maintain security cover and guarantee amount in cash. However, providing and maintaining such security cover in cash is expensive, less efficient, and non-standard practice. It is requested to accept commercial bank guarantees or Standby Letter of Credit (SBLC), which may be unconditional, irrevocable, direct-pay, divisible, and transferable on demand in favor of the Market Operator. Further to the said, it was stated that in the MCC, the amount of enrollment fee shall be approved by the Board of market operator for each category of market participants, service providers or enrolled persons and shall be published on MO Website. Since market operator is serving both regulated and non-regulated

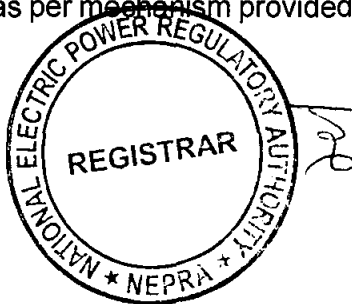


participants therefore, it was proposed that the Authority may approve the fee as requested by the board of market operator. Regarding CCoPs, it was submitted that CCoPs shall only be providing instructions for implementation of MCC and therefore separate approval of Authority may not be required. Further, the guidelines for preparation and amendment of the CCOP as provided in the MCC are considered suitable. HSPL stated that good financial performance of the Ex-WAPDA DISCOs as Suppliers of Last Resort is of paramount importance and without it, CTBCM may not fully achieve its objectives.

(D). Response of CPPA-G

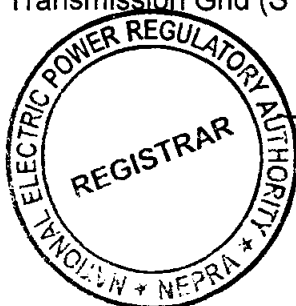

(i). The Authority reviewed above comments/observations of stakeholders and considered it appropriate to seek perspective of the CPPA-G on the same. Accordingly, CPPA-G provided detailed response to the comments/observations of the above stakeholders. The salient points of the rejoinder submitted by the CPPA-G are summarized below:

- (a). CPPA-G on the observations of the KEL submitted that as per the amended Act 2018, there shall be only one SO in the country. With the enactment of Section 23G of the Act, KE can not be SO anymore, however, it will collaborate with the SO as per its CTBCM integration plan to operate its network. Regarding the nomination of KEL as a member of CCRP in its transmission licensee role, it was clarified that the NTDC as the largest Transmission Service Provider (TSP) in the country represents all the them in the CCRP. However, in future if an association of the TSPs is established, then KEL may nominate its representative. It is pertinent to mention that even otherwise, KEL is a member of CCRP in its role as SoLR. On comments pertaining to compensation for must-stop generation, CPPA-G clarified that must stop generation is the generation which is stopped/reduced by the SO due to congestion in the system and therefore, in this case there will be no compensation, however, when a generator will be stopped/reduced to obtain Ancillary Services, then compensation will be provided as per mechanism provided in MCC. On the observations



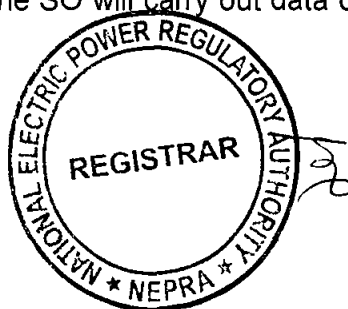
regarding the provision of system reserves by ARE generators due to their intermittent nature, it was clarified that the capacity obligations already mandate each market participant to procure reserves of around fifteen percent (15%) above its peak load which will cater for such intermittencies. The actual requirement of the reserves will be determined on periodic basis by the SO considering the dynamics of the power system.

- (b). With respect to the comments for using transmission losses of KEL for determining its capacity obligations, CPPA-G submitted that major portion of the load served by all SoLR(s) including KEL is served through NTDC and therefore being the largest TSP it is more representative of the transmission losses in the country. Even if the losses of KEL were included and weighted average is taken, the figure would be almost be the same as that of NTDC. Regarding the issue of security cover mechanism, it was clarified that the said mechanism is for payment in the market (for imbalances and other market charges) not for bilateral payments. The security mechanism mentioned by KEL is for its bilateral payments with SPT and not for the payments to be made to the MO. Therefore, the mechanism provided in the MCC will equally be applicable to KEL as on other SoLR(s). About the suspension/termination of market participants, CPPA-G clarified that the MO has the role of monitoring of the market participants, therefore, it will be appropriate taking such decisions. However, in case of a dispute, the matter will be resolved through the dispute resolution mechanism provided in the MCC.
- (c). About the comments of NTDC on duties of the SO, it was clarified that draft of MCC provides the same as stipulated in the Act. According to the Act, the SO will perform the function of system planning for long term capacity that also includes transmission capacity. Therefore, the SO will develop a high-level bulk transmission plan that will guide the NGC to develop a Transmission System Expansion Plan (TSEP) and the DISCOs to develop a Secondary Transmission Grid (STG) plan. Regarding the connection



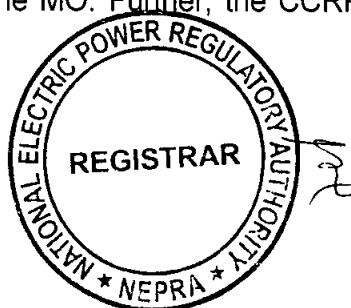
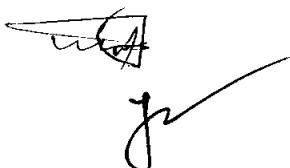
points, it was explained that definition in the MCC is more comprehensive and is not in conflict with that provided in the Grid Code. On the list of variable cost of generators, it was submitted that SO will prepare the same for determination of the system marginal prices duly considering the inputs of the MO, the SPT, the generators and therefore should not be confused with the existing merit order. Also, the said list will be prepared after the actual dispatch. About the inclusion of reference to the Distribution Code, it was submitted that same will be incorporated in the MCC. Regarding the issue pertaining to preparation of procedures for metering by NTDC as MSP, it was clarified that the draft MCC assigns the responsibility for different processes to relevant entities including NTDC as the MSP. About the procedure for validation checks on metering data, it was submitted that since the MO will not have any tools to cross verify such data, therefore, this provision will be excluded from the MCC. Regarding the commercial metering report, it was elaborated that such reports will be the consolidation of all proposals relating to metering and, therefore, MSP is not being given any additional responsibility in this matter.

- (d). On the observation of NTDC regarding the quantities of energy for which compensation will be provided, it was explained that MSP will provide actual energy data, however, out of that total energy, the quantum to be considered for provision of Ancillary Service will be provided by the SO as it will have necessary tools and capability available. Regarding verification of start-up cost by the SO, it was clarified that if the SO considers that costs are not appropriate, it should inform the Authority and the MO before using it. About the suggestion of NTDC for inclusion of factors in the CCOP of critical hours, it was stated that same may be included in the relevant CCOP(s). Further, it was clarified that the BMC will run ex-post and actual data of the previous year will be used in its calculations. Also, the capacity price will be determined/estimated as a result of the exercise that the SO will carry out data of the previous year and the



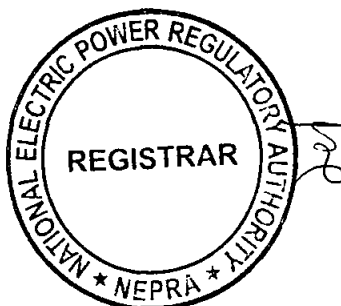
recommendation of NTDC have already been included in the draft MCC. On the imposition of fine on the SO, it was clarified that the MO will not impose any such fine, however, the procedure for breach will be same for all the service providers and the SO or the MO will only inform the Authority for such instances. About the revision of the value of the fully loaded generators, it was clarified that the same may be incorporated in the MCC and fuel related constraints and other details will accordingly be covered in the relevant CCOP(s). On the mechanism for calculation of the marginal price in case of generation shortfall, it was submitted that the CTBCM has been designed as a cost-based market and marginal costs are set as the cost of most expensive plant running on merit. As far as price signal for investment is concerned, it is clarified that CTBCM is not an "energy only" market where price signal in case of generation shortfall drive investment. It is a market with two products, i.e. energy and capacity and the deficits will be dealt according to the balancing mechanism(s) which will provide suitable price signals for each product.

- (e). About the queries raised by the NTDC, it was elaborated that the MCC has already been aligned with the proposed Grid Code. Also the Authority has already notified the relevant legal instruments providing comprehensive framework for regulating the CTBCM and the MCC. The roles of the SO and NGC have already been given in the MCC as well as in existing license of NTDC. The role of NTDC as MSP have also been clearly explained in its license, the CTBCM Design and draft MCC. CPPA-G explained that the Authority will determine the transmission losses of NTDC and other TSP(s) in its tariff determination(s). The payments of the legacy contracts will be handled as being done today. It was clarified that the Authority will impose penalties on the NTDC, if any. Further, NTDC will not have any exemptions and it will only provide the security covers for the payment of excess losses, which may not be required at the start of the market. It was clarified that the NTDC will be enrolled as service provider with the MO. Further, the CCRP will be the right forum to



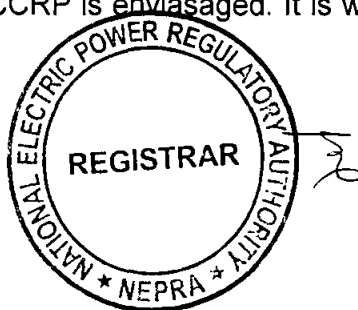
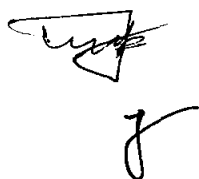
approve the CCRP. CPPA-G explained that it has developed that Market Management System (the "MMS") through which all the processes of the MCC will be automated. Further, the SO has also developed the System Operator Data Exchange Portal (SDXP) and Marginal Price Application which are also integrated with the MMS. The detailed market provisions as given in the MCC have been developed based on the global best practices, legal and policy framework and local conditions and peculiarities of Pakistan, whereas formulas provided in the MCC have been tested through simulations in excel and IT applications i.e. MMS, SDXP and Marginal Price Application.

- (f). About the comments of GEPCO, it was explained that all voltage levels, where Security Constrained Economic Dispatch (SCED) is applicable are covered under the Grid Code, therefore, the addition of Distribution Code is not needed. The SO does not control the output of generators connected at the distribution voltage and therefore, reference of the Distribution Code may not be relevant. It was explained that only the committed projects will be treated as legacy contracts which CPPA-G will be signing in its role as SPT and XW-DISCOs will directly procure from the candidate projects. All such projects procured for XW-DISCOs, either through SPT or directly will be considered for Capacity Obligations. Further, it was submitted that the definition of SoLR provided in the MCC is generic in nature, the functions/activities that SoLR will perform will be in accordance with the relevant rules and regulations formulated under the Act. It was explained that MO has prepared the MCC and will implement the same. The MO will interpret the Code in its day-to-day affairs and if any person has any disagreement with the MO, it can always approach the Authority for a final decision. It was submitted that proposal for inclusion of four (04) members from XW-DISCOs will give disproportionate rights which will be unfair with other participants represented in the CCRP. On the comment of earlier termination of the contracts, it was submitted that it is subject of the approval of the



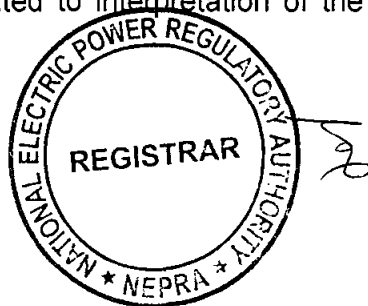
MO which will check compliance with all provisions of the MCC and will not allow an early termination if adequate justification is not provided. About the commercial allocation of legacy contracts, it was explained that the said factors have been calculated pursuant to the provisions of the NEP 2021 and made part of the MCC, that the Authority will approve.

- (g). Regarding the comments of LESCO, it was submitted that CPPA-G under its Application submitted specialized experience of the management and technical professionals in the development of competitive markets and electric power sector and also ensured to provide the undertaking to fulfill the eligibility criteria that the Federal Government will prescribe later. In this regard, the precedent of the grant of licence to Provincial Grid Companies in the absence of eligibility criteria rules also exists in the sector. Regarding the institutional arrangement and transfer of the MO licence, it was submitted that the role of independent SO was approved in the CTBCM Design under which market operations and system operations will be performed and the same will be established in future accordingly. However, as per the provisions of the Act only the current MO is eligible to apply for such a licence, therefore, CPPA-G is the relevant entity to apply for such licence and later when the new company will be established, the MO licence will be transferred to the same under Sections 27 and 33 of the Act. The proposed organogram has also been submitted after the approval of the competent authority and same will be set-up under the new company as per the approval of the Authority. In addition to the above, CPPA-G clarified that detailed workshops would be arranged during the test-run of the power market/CTBCM and MCC wherein the real problems that the stakeholders will be facing will be discussed and remedies will be suggested to address the same.
- (h). Further to the above, it was clarified that the MCC has been submitted to the Authority under Sections 23A and 23B of the Act wherein no approval of the CCRP is envisaged. It is worth mentioning that the



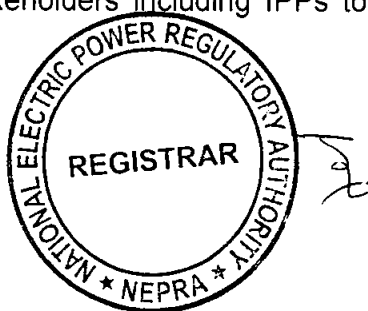
CCRP of the MCC will be established after approval of the MCC. Further, it was submitted that the voting right of representative of the Authority was not required at this stage because all the amendments of the MCC would be submitted to the Authority for the final approval. On constitution of the dispute board, it was clarified the same may be considered during regulatory approval process.

- (i). On the comments of PPDB, it was submitted that Section 23A of the Act envisages only one licence for the MO. The said section stipulates that, "... only one market operator licence shall be granted at one time." Regarding the transfer of licence, the same is admissible under Section 27 of the Act. About the comment of PPDB pertaining to the Registration and the licence for MO, it was clarified that CPPA-G has two separate business units having separate HR resources and IT systems for both these functions. In future at the time of transfer, the current Capex and Opex will also be transferred accordingly. Regarding facilitating the XW-DISCOs in procurement of electric power, it was submitted that the XW-DISCOs are deemed supplier till April 2023 and also all the XW-DISCOs have already applied for renewal of their distribution licences to the Authority. Further, a proper procurement mechanism may be provided in the power procurement regulations for procurement of electric power by the DISCOs/SoLR. Regarding Independent System and Market Operator (ISMO), it was submitted that the Authority approved the CTBCM Design which the Cabinet Committee on Energy (CCoE), Federal Cabinet and the CCI endorsed through NEP 2021. Providing clearly the provisions and directions for the creation of the new company/ISO. Regarding the representation in CCRP, it was submitted that provincial entities will have their representation through the TSP(s) or association of generators as the case may be.
- (j). Regarding comments of Uch and Uch-II regarding for exempting the existing IPP(s), it was submitted that the MCC already provides the same as its scope does not extend to the legacy contracts. On the comment related to interpretation of the MCC, CPPA-G submitted



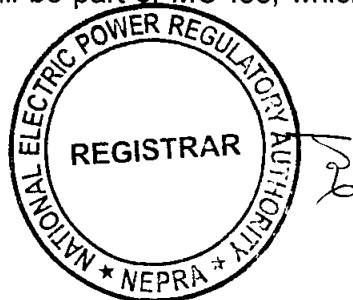
that the MO being the custodian of the code will need to interpret the same in its day-to-day affairs. In case, a market participant does not agree with such interpretation then it may approach the Authority for redressal of its grievance. Further, it was claimed that the MCC provides a procedure regarding the representation of generators in the CCRP through their association. Regarding the comment on the implication of the registration of the legacy contracts, it was stated that the registration or commercial allocation does not impact in any manner the terms and conditions of the legacy contracts. Such registration is for the sake of calculation of imbalances. It was also stated that novation or assignment of any PPA/EPA is not envisaged under the CTBCM. Further, SPT is just a name being given to the existing power purchaser role of CPPA-G and it will continue to administer the legacy contracts in the same manner as of today. CPPA-G explained that the new AMR meters have been installed by NTDC on all metering points and meter reading for bilateral transactions will be carried out as per procedure given in the PPAs/EPAs. The hourly data collected by the MSP will be used for calculation of imbalances of market participants only and not for the legacy IPPs. Regarding the comment on force majeure events of the generation facilities, CPPA-G submitted that these concerns shall be addressed in the bilateral contracts and is not a subject of the MCC.

- (k). In response to the comments of IPPAC regarding saving of their rights available in the PPAs, IAs etc. it was submitted that provisions of the MCC are designed in such a way that the rights and obligations of the existing IPPs will not be prejudiced. Further, the existing IPPs will not be market participants, and the MCC is not applicable on them. Regarding the role of SPT, it was stated that CPPA-G as the SPT, will remain as of today and there will be no change except that it will not sign any further contracts. Regarding the comment of IPPAC that IPPs were not consulted during the implementation phase of the CTBCM, it was informed that the CPPA-G held several webinars with all the stakeholders including IPPs to address their concerns and



queries pertaining to CTBCM. Related to the comment on saving clause for legacy IPPs, it was submitted that adequate protection is already provided in the MCC. Regarding the financial situation of the power sector, it was submitted that Government is already taking concrete steps to bring reforms in the administration of the weak DISCOs; however, it is not a precondition to start the market. Regarding the issue of circular debt, it was explained that the government is already taking steps to improve the performance of the XW-DISCOs and ensure liquidity in the market, and the introduction of the CTBCM is one of such steps. Further, it was explained that market transactions will be backed by the security cover mechanism provided in the MCC. Therefore, the issue of circular debt will be addressed over time through the actions including elimination of boom and bust cycles in generation capacity addition while ensuring a sustainable balance through proper implementation of the capacity obligations, reduction in power purchase costs through competitive auctions, cost savings through improvement in the dispatch operations of the SO and efficiency in processes through IT systems and training and capacity building.

- (i). Regarding the comments of HSPL, the CPPA-G explained that projects which have Letter of Support and have signed EPA/PPA with the CPPAG will be classified as legacy contract, and all legacy generators are exempted from enrolment. Further, as per draft commercial code, intermittent generation with storage is categorized as dispatchable generator, in which the methodology for firm capacity calculation takes into account the storage system. It was claimed that providing and maintaining security cover in cash will be an effective approach as CTBCM success relies upon the regular monthly clearance of imbalance amounts. Keeping in view our banking system, swift and same day clearance will be possible by dealing in cash. The SBLC mechanism will be considered at later stages when its effectiveness has been evaluated properly. Further, enrolment fee and other fee will be part of MO fee, which will be approved by the



Authority, separate approval is not required. It was explained that the understanding of HSPL is correct, CCOPs will not be approved by Authority. As per the draft MCC, the existing PPAs/EPAs will not be affected after CMOD as they will be treated separately by the CPPA-G in the role of special purpose agent (SPA). CCOPs will also cover detailed procedure of their treatment. Further, it was agreed that good financial performance of the Ex-WAPDA DISCOs is important for the implementation of CTBCM but it's not a pre-requisite, there are credit cover and guarantee mechanism in draft MCC which will assure smooth operation of the market.

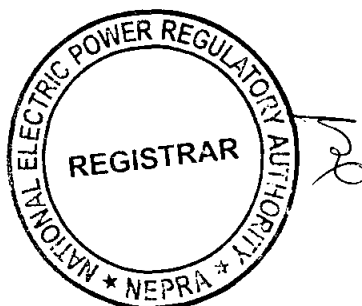
(ii). The Authority examined the above rejoinders by CPPA-G on the comments of the stakeholders and decided to hold a public hearing in the matter.

(E). Public Hearing

(i). In consideration of the above, notices of public hearing were published in the press on April 14, 2022, informing the relevant stakeholders and the general public about the public hearing and the issues framed for the same. Further, letters were also sent to different provincial and federal ministries, their attached departments and representative organizations informing about the said hearing and their participation thereof.

(ii). The public hearing in the matter was held on April 20, 2022, at the head office of NEPRA in Islamabad as well as through video link wherein representatives of different organisations participated. These included the representatives of CPPA-G, NTDC/NPCC, PPDB, XW-DISCOs, KEL, representative of IPPs, and other interested persons/parties. Following issues were discussed:

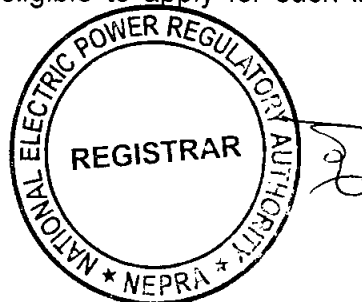
- (a). Whether it is prudent to grant the MO licence to CPPAG in addition to its existing role as agent of XW-DISCOs, or a separate legal entity is required to be established for the grant of MO Licence?
- (b). Whether it is prudent to grant the MO licence in absence of relevant eligibility criteria rules?
- (c). Whether the MO licence can be granted in view of the moratorium on Sections 23A and 23B of the Act?



- (d). Whether the mechanisms, processes and formulas given in the market commercial code (MCC) for the enrollment, imbalances settlement, contract registration, capacity obligations, firm capacity certification, security covers, dispute resolution and enforcement etc. are adequate to enable and ensure the liquid and efficient competitive wholesale power market under the CTBCM?
- (e). Whether it will be prudent that market commercial code operating procedures (CCoPs) to be made under the MCC by the MO should be approved by the Authority?
- (f). Whether the MCC has any impact on existing power purchase agreements entered into by the CPPAG with generation licensees/companies including IPPs?
- (g). Whether elimination of circular debt and improvement of the financial performance and condition of the XW-DISCOs as suppliers of last resort, is a pre-requisite for successful operationalization of the CTBCM?
- (h). Whether the essential ICT infrastructure required for power market administration and settlement of commercial transactions under the CTBCM is available with relevant entities including System Operator?
- (i). Whether it will be prudent to allow the MO licensee for the dry-run of CTBCM, keeping in view the moratorium on Sections 23A and 23B of the NEPR Act? If yes, what should be the scope and modalities for the dry-run?
- (j). Any other issue with the permission of the Authority.

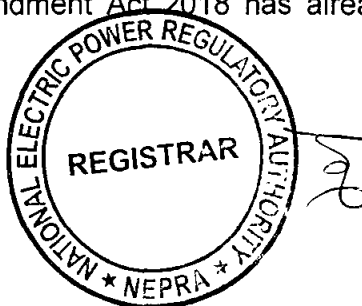
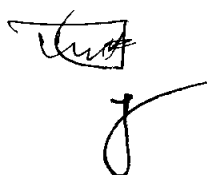
(iii). In this regard, the CPPA-G team gave a detailed presentation on the abovementioned issues. In this regard, the submissions made by the CPPA-G are summarised as follows:

- (a). About the issue pertaining to the grant of the MO licence to CPPA-G in addition to its existing role as agent of the XW-DISCOs, it was submitted that as per Section 23A of the Act, only the person acting as the MO is eligible to apply for such licence and only one such



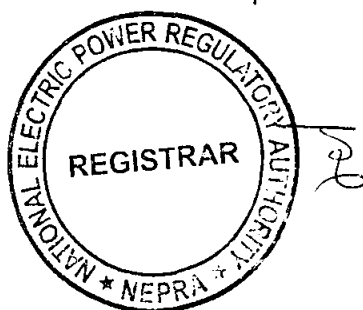
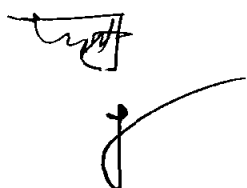
licence can be granted. Since, the CPPA-G is the only entity that is performing the role of the MO under the Registration granted in 2018, therefore, it is eligible for the grant of the MO licence. Further, it was stated that at the start of the market, there would be very limited transactions therefore no material conflict of interest would arise with the SPT. However, for the greater transparency, the accounting and management segregation of both functions (SPT and the MO) will be ensured from day one of the grant of the licence. And eventually a new company will be established, and the licence will be transferred through a business transfer agreement (BTA) to such company, in accordance with Section 27A and Section 33 of the Act.

- (b). Regarding the issue of eligibility criteria rules, it was submitted that the Federal Government has already consulted all the stakeholders on the draft rules, and the preliminary review of the same reveals that CPPA-G fulfills the requirement of the eligibility criteria. However, if there is any further requirement in the future, the CPPA-G submitted an undertaking confirming that it shall comply with the same. It was explained that along with the Application, the detailed documents related to human resource and technical capability of the CPPA-G to perform the functions of the MO have been submitted. Further, during the previous four-five years, the market team of the CPPA-G has developed experience in the design and implementation of the competitive electric power markets and is well equipped to perform the role of the MO. Further, it was also highlighted that the MoE (PD) has initiated the process of lifting of moratorium and a draft summary in this regard has also been initiated and accordingly supported the grant of license with six months as dry run for commercial code.
- (c). Regarding the issue of grant of the MO licence in presence of the moratorium on Sections 23A and 23B of the Act, it was stated that Section 22 of the General Clauses Act, 1897 stipulates that any rule, by-laws, regulation can be made, or orders can be issued between the passing and commencement of the enactment of any law. In this case, the Amendment Act 2018 has already been passed by the



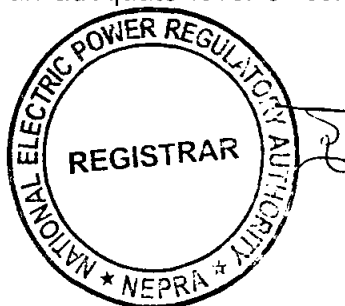
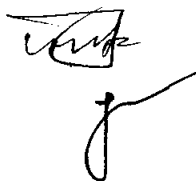
legislator and only commencement of specific sections is remaining. Therefore, the said section of the General Clauses Act, 1897, provides the Authority, sufficient powers to grant the MO licence to CPPA-G in presence of moratorium on Sections 23A and 23B of the Act. Further, the CPPA-G relied on case laws reported as "2011 PTD 2465" and "2012 PTD 798". CPPA presented that MoE (PD) also supported the grant of the MO licence to CPPA-G in light of Section 22 of the General Clauses Act, 1897 in presence of moratorium on Sections 23A and 23B of the Act.

- (d). Regarding the issue of adequacy of the mechanism and processes provided in the MCC, it was submitted that these have been developed based on the global best practices, applicable regulatory and policy framework and local conditions and ground realities of the country. Whereas formulas provided under the MCC have also been tested through simulation software and in IT applications such as MMS, SDXP and Marginal Price Application.
- (e). About the issue of approval of CCOPs, it was submitted that main procedures are part of the draft MCC which will be approved by the Authority. The CCOPs will only provide procedural details to implement such provisions and therefore may not be approved by the Authority. Instead, the same may be referred to the CCRP for review and approval.
- (f). Regarding the issue of the impact of the MCC on the existing PPAs/EPAs signed by the CPPA-G with the IPPs, it was clarified that the existing PPAs/EPAs i.e. legacy contracts are protected under the policy and approved CTBCM Design. Legacy contracts will be integrated in the CTBCM in such a way that there will be no impact on the existing IPPs. Further, such IPPs will not be enrolled as market participants under the MCC and will be dealt in accordance with their existing PPAs/EPAs through CPPA-G in its role as SPT.
- (g). About the issue pertaining to elimination of circular debt and improvement of the financial performance of DISCOs, as pre-



requisite for the successful operationalization of the CTBCM, it was submitted that elimination of circular debt is not a pre-requisite, however in the market there will be two types of transactions (a) imbalances which will be secured through credit cover mechanism and (b) bilateral payments between parties in accordance with their bilateral contracts. Initially, there will be sovereign guarantees for government owned DISCOs, however, the NEP 2021 provides that gradually there will be a shift from sovereign guarantees to credit cover mechanisms starting from financial healthy XW-DISCOs which will put pressure on the XW-DISCOs to improve their financial health to meet the payment obligations in the bilateral contracts resulting in improved cash flow in the sector to ultimately address the issue of circular debt. Further, the cost of generation will be also reduced as a result of competitive auctions and proper planning through IGCEP and procurement plans which may reduce overall electricity costs.

- (h). About the issues pertaining to the availability of ICT infrastructure, it was submitted that the CPPA-G has developed the MMS through which all the processes of the MCC have been automated. Further, the SO has also developed the SDXP and Marginal Price Applications which are also integrated with the MMS. Therefore, the required IT infrastructure and systems required for implementation of the CTBCM is already deployed and functional.
- (i). Regarding the issue of dry-run of the CTBCM and its modalities, it was submitted that the concept of dry-run/shadow market is not new, it was envisaged and approved in the Implementation Roadmap. During the dry-run, the systems and processes will be tested without creating any financial obligations on market participants and to assess the impact of market transactions. This will also help in developing stakeholders' confidence on the processes developed by the MO for implementation of the CTBCM and will ensure smooth roll-out of the market and subsequent transactions. During the dry-runs, it is intended to develop capacity of the relevant stakeholders so that they can get an adequate level of confidence as well as sufficient

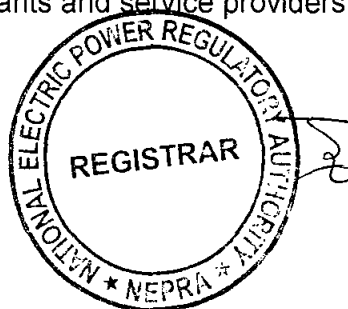


acquaintance with the day-to-day business processes of the market prior to the actual transactions in the CTBCM.

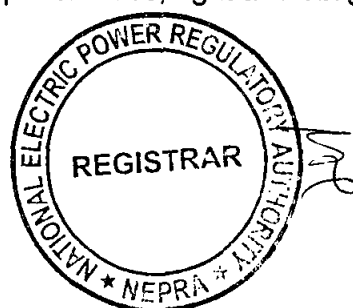
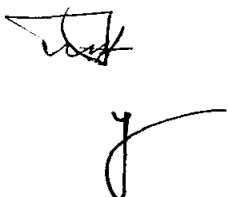
- (j). Regarding the modalities during the dry-run period following actions were proposed to be performed: (a). trial enrollment of market participants and service providers through MMS; (b). registration of Common Delivery Points (CDPs) and integration of MMS and Secured Metering System (SMS) for transfer of meter reading; (c). contract registration and commercial allocation of legacy contracts; (d). shadow monthly settlement statements including BME, additional market services charges and operator fee; (e). shadow yearly settlement statements including BMC and excess losses; (f). capacity obligation calculations against demand forecast of DISCOs to be used for onward preparation of power acquisition plans; and (g). testing/improvements in the IT infrastructure including MMS, SMS, SDXP and Marginal Price Applications.

(iv). During the proceedings of the public hearing, other stakeholders also presented their point of view in the matter. In this regard, verbal as well as written comments on the Issues of Public Hearing were also submitted by Ministry of Energy (Power Division) (MoE (PD)), Peshawar Electric Supply Company Limited (PESCO), LUMS Energy Institute (LEI), Axis Law Chambers (ALC), Director General (Law) of the Private Power Infrastructure Board (PPIB). The salient points of the comments are summarised below:

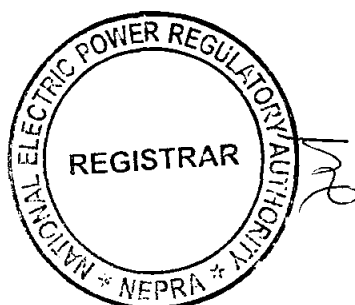
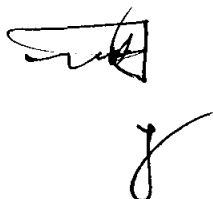
- (a). MoE (PD) vide its letter No.F.2(2)2021-Policy dated 19.04.2022 supported the views of CPPA-G that the MO licence could be issued despite moratorium on Sections 23A and 23B of the Act, in light of Section 22 of the General Clauses Act, 1897. MoE (PD) further stated that it has already initiated process of lifting the moratorium and draft Summary was shared with the NEPRA in this regard. MoE also supported the option of dry-run of CTBCM during the moratorium and even if the moratorium is lifted, the dry-run of the market may continue for a reasonable period to allow testing of all infrastructure, the IT systems and processes by allowing dry-run transactions among the market participants and service providers.



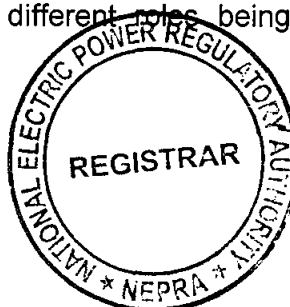
- (b). In response to the framed issues, PESCO supported the grant of the MO licence to CPPA-G. In this regard, it was commented that tremendous efforts have been put in by all stakeholders including DISCOs, Private Power Infrastructure Board (PPIB), MoE (PD) and especially the CPPA-G as the deemed MO to implement the market reforms in the last eighteen months. Further, the CPPA-G has demonstrated an outstanding capacity in developing the competitive regime and therefore the CPPA-G may be given the licence till the new company is established to implement CTBCM on time. Regarding the issue of eligibility criteria rules, it was submitted that the CPPA-G is already the MO and has demonstrated the capacity to operate as the MO in competitive regime, therefore, the licence to the CPPA-G may be granted, however, the terms of the licence may include obligations on the CPPA-G to fulfil the eligibility criteria rules requirements, whenever they become available. On the issue of adequacy of the MCC, it was submitted that as a first step the current version of the MCC is adequate to enable and facilitate the wholesale market operations. Regarding the legacy contracts, it was submitted that the same are isolated from CTBCM as per the approved model, and therefore, there should be no effect on them. On the issue of circular debt, it was submitted that elimination of circular debt is the major underlying bottleneck and barrier in the transition of the single buyer model to competitive market. However, it is expected that CTBCM will, in medium term, improve the power purchase price for DISCOs through competitive tension and will improve efficiency in wholesale transactions and help power sector move away from surplus and shortage conditions, apart from several other stated benefits. In addition to the said comments, PESCO supported the idea of dry-run and stated that it will be more effective to allow the MO licensee for the dry-run of CTBCM rather than immediately going live. Further, this will also help the stakeholders to better understand their roles, responsibilities, right and obligations in the market.



- (c). LEI submitted that being an active partner in trainings, research, development, and allied activities, LEI has found market development and operations team of the CPPA-G as highly competent professionals capable of managing and administrating the operations of the power market. Further, the said team of the CPPA-G has an excellent exposure, rich experience, and strong grip about power markets. In view thereof, LEI supported the grant of the MO licence to CPPA-G. In addition, LEI submitted its comments on the specific issues of hearing. Regarding mechanisms, processes and formulas given in the MCC, it was submitted by LEI that these have been developed after thorough consultations with international and local consultants and reflect global practices in market operations and regulatory frameworks. A positive aspect is the level of familiarity compared to existing mechanisms in terms of variable costing, merit order, dispatch, settlement, and energy balancing. This will allow market participants to participate with relative ease and will enable their evolution to more robust and market-oriented mechanism smoothly. Regarding CCOPs, it was stated that it is not necessary for the regulator to approve them. Since Pakistan's electricity market is transitioning from highly regulated single buyer to a competitive one, therefore, it is essential for de-regulation to be adopted to ensure less regulatory interventions and more institution-driven processes. Since the MCC is approved by NEPRA, all CCOPs are its sub-servient and hence need only be approved by the CCRP. In addition, it was commented that the idea of 'dry-run' of CTBCM in the form of running a shadow market for a transitive period holds solid ground. It will provide the internal and external stakeholders an opportunity to see the market operations before it is formally launched. This will alleviate unfounded concerns, impart adequate level of confidence in CTBCM, and demonstrate transparency in the market operations. It will also strengthen the capacity of stakeholders to participate in the competitive market regime in true spirit.



- (d). ALC provided its legal opinion regarding the grant of market operator licence given that the Section 23A of the Act, the relevant section which places a licensing requirement on any entity that intends to act as the market operator, is not in force at the moment. In this regard, it was opined that NEPRA can issue a license to CPPA-G pursuant to Section 22 of the General Clauses Act, 1897 even though Section 23A of the Act is not in force. Provided that a licence falls under the ambit of an 'order' and provided further that such issued licence including all the terms and conditions set out therein will not take effect until Section 23A of the Act is in force. In this regard, ALC quoted a judgement from the Indian jurisdiction reported as The State of Andhra (Now Andhra Pradesh), by Dy. Commr. of Commercial Taxes. Kakinada v. Bellamkonda Venkata Subbaiah and another (AIR 1957 ANDHRA PRADESH 462) which provides that "...an order would indicate some expression of opinion which is to be carried out or enforced". It was explained that since a licence issued by NEPRA to CPPA-G in exercise of the authority stated in Section 22 of the General Clauses Act, 1897 will authorise CPPA-G to act as the market operator, along with setting out detailed terms and conditions, it can be construed as an 'expression of opinion which is to be carried out or enforced', therefore it was opined that a licence will constitute an order and therefore can be granted by NEPRA prior to Section 23A coming into force. The licence, however, will not be effective until Section 23A comes into force.
- (e). Director General (Law) of the PPIB opined that in view of the general or special powers of the Authority under Section 7 read with Section 48 as well as Section 23A and 23B read with Section 22 of the General Clauses Act, 1897, there is no legal bar on the grant of MO licence, however, the licence will become effective only when moratorium on Sections 23A and 23B of the Act is lifted. On the issue of grant of MO licence to CPPA-G in addition to its existing role of agent of DISCOs, it was opined that there is no legal bar on one entity performing two different roles being governed through separate

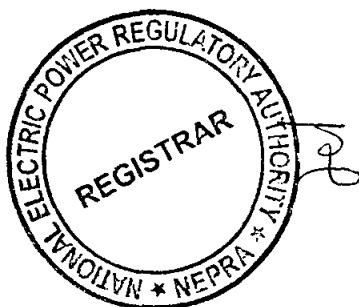


regulator regimes. The market is expected to kick start in phases, and at the initial stage, there is no harm in granting a licence to CPPA-G for the role of market operator with complete operational ring-fencing which can later be assigned to an entity. Therefore expediency demands that the process should not be delayed because a new legal entity has not yet been established. Since Section 23 of the Act is not effective which requires grant of licence subject to prescribed conditions, the Authority may under general or special powers grant a licence and impose such conditions as deemed appropriate. This however is subject to three restrictions as laid down by the superior courts, (i). the conditions should not be unreasonable, (ii). they should be just and meet the purposes of the Act and, (iii) such conditions should not be discriminatory in nature. Regarding the issue of impact on existing energy purchase agreements entered into by the CPPA-G with generation licencees companies including IPPs, PPIB stated that the market commercial code should clearly specify that it will not be applicable to existing PPAs/EPAs as any legal requirements which will affect the rights under the PPAs/EPAs may trigger claims under the Change in Law regime provided thereunder.

(F). Internal Deliberations

The Authority further deliberated in the matter, wherein Chairman, Member (M&E/CAD), Member (Licensing/Tariff) expressed their point of views in favor or deferment of the grant of the MO Licence. In this regards opinion of legal advisors as well as the head of departments was also sought in the matter, who unanimously supported the grant of the MO license and approval of the MCC. Subsequently, Member (Licensing/Tariff) raised additional queries and sought the response on the same from the concerned Legal Advisor (Legislation/CTBCM), the said queries were responded by Legal Advisor (Legislation/CTBCM), which are reproduced below:

Query #01: "Can NEPRA grant the Market Operator (MO) License right now under the stand alone provision(s) of NEPRA Act?"



Response: The Legal Advisor (Legislation/CTBCM), responded that:

“It is submitted that the NEPRA Act has to be read in conjunction with the General Clause Act, 1897 as the General Clauses Act is the key to interpretation of the laws in Pakistan. Detailed opinion in this regards has already been submitted.

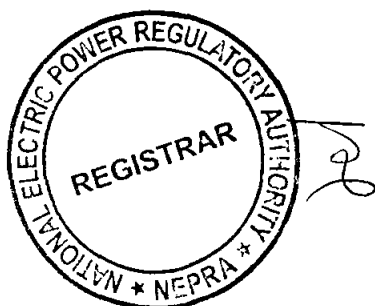
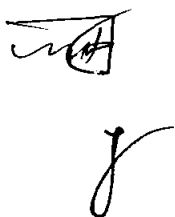
Nevertheless, even if for the sake of argument, we review the relevant provisions of the NEPRA Act are reviewed without reference to any other laws including General Clauses Act, 1897, it transpires that an application for grant of MO licence had to be made within one year from the commencement of the NEPRA Amendment Act, 2018 as per Section 23A of the NEPRA Act. Although Section 23A is under moratorium, however, Section 23A of the Act does not make a reference to the date of lifting of the moratorium but to the date of commencement of NEPRA Amendment Act 2018 i.e. 30.04.2018. The relevant provision is reproduced for ready reference:

23A. Market operator licence.— (1) No person shall, unless licensed by the Authority under this Act and subject to the prescribed conditions, act as a market operator:

Provided that any person acting as a market operator on commencement of the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018, shall within a period of one year apply for a licence under this Act:

[Emphasis Added]

Moreover, as per the CTBCM detailed design approved by the Authority, the MO licence had to be applied by April 2021 and was envisaged to be granted by December 2021. Thus, even when we look at the stand alone provisions of the NEPRA Act, the legislative intend is clear that MO licence can be applied and granted even during the moratorium. However, the licence shall become effective only upon lifting of the moratorium”.



Query #02: "Would the MO License granted by relying on the provisions of the general clauses Act be effective in absence of the gazette notification required under Section 1 (3) of NEPRA Act?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

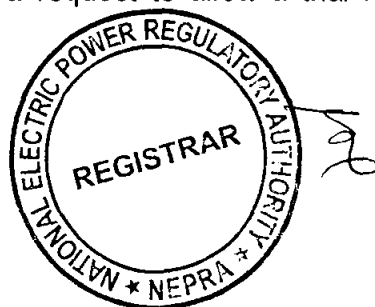
"It is submitted that in view of Section 22 of the General Clauses Act, licence if granted by the Authority during the moratorium, shall become effective only upon lifting of the moratorium from Sections 23A and 23B of the Act."

Query #03: In case the License granted will not take effect till lifting of moratorium on Section 23A, what is the need to grant license and approval of Commercial Code which is not yet finalized by the applicant itself and is still under debate?

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"Whereas Section 1(3) of the Act provides for a maximum moratorium of five years, Section 23A of the Act requires the existing MO to apply for a licence within a period of one year from the commencement of the NEPRA Amendment Act, 2018 i.e. 30.04. 2018. thus, the legislature in its wisdom has required filing of application of MO licence under Section 23A of the Act within one year from 30.04.2018 regardless of the status of moratorium. The rationale for it appears to be to provide sufficient time for the market operator to complete necessary ground work to ensure proper implementation of the MCC and put in place relevant contractual frameworks, associated IT systems and hardware infrastructure for effective working of the electric power market under CTBCM regime.

Regarding finalization of the Market Commercial Code (MCC), it is submitted that the MCC was initially submitted to the Authority under authorisation of the Board of Directors (BoD) of the CPPA-G. Subsequent correspondence made by the CPPA-G does not appear to have been issued with approval of the BoD of CPPA-G. Nevertheless, the latest correspondence received from the CEO CPPA-G clearly requests the Authority to grant the MO licence and approve the MCC with a request to allow a trial run period. Pertinently, MCC is a



dynamic document and if required, the Authority can require its amendment even after its approval.

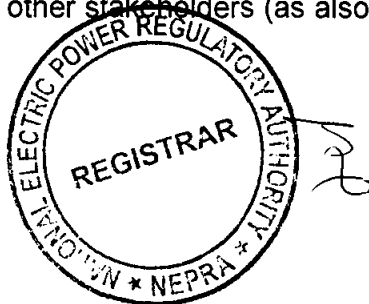
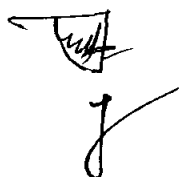
The relevant provisions of NEPRA Act when read with Section 22 of the General Clauses Act, 1897 make it clear that the legislature in appropriate cases has provided for issuance of necessary orders, notifications etc. prior to coming into effect of the relevant provisions of the law in order to allow for preparation of required ground work. Thus, issuance of the MO licence and approval of Market Commercial Code at this stage (without the same coming into effect until moratorium is lifted) shall provide an excellent opportunity for completing and testing necessary arrangements allowing better risk assessment and management. Based on the trial run of the MCC, if it is deemed appropriate, the Authority can require any amendments in the MCC in the public interest.”

Query 04: “After having received the letters dated 31.03.2022, 19.04.2022 and 29.04.2022 of CPPA-G, highlighting issues in the draft commercial code, is it not necessary to seek comments afresh from stakeholders on issues highlighted through referred letters?”

Response: The Legal Advisor (Legislation/CTBCM), responded that:

“As per the regulatory practice, the Authority has already conducted a detailed consultative process for the approval of MCC and considered the relevant comments of the stakeholders. The Authority in response to the letter dated 31.03.2022 has already decided that the MCC could not be returned at this stage and asked CPPA-G to provide any additional comments. The additional comments provided by the CPPA-G have also been considered in the Working Paper submitted to the Authority.

Though the Authority is empowered to enter into another round of consultations, in my humble view, it may be more appropriate if the MCC is approved for a test run period (without any commercial or legal implications) with a direction to the CPPA-G to submit a more comprehensive report in the matter along with changes, if any, required in the approved MCC in consultation with other stakeholders (as also proposed in Working Paper). In



this way, the Authority will get a more realistic and concrete feedback from the whole sector on a firm document i.e. approved MCC, instead of relying on comments of certain officials of the CPPA-G."

Query #05: "Whether provisional approval of the Market Commercial Code is provided under NEPRA laws?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"The Market Commercial Code approved by the Authority can be changed either on its own motion or upon request of the licensee or any other stakeholder. Section 23B is reproduced for ready reference please:

23B. Duties and responsibilities of a market operator.— (1) A market operator may, from time to time and subject to approval by the Authority, make such commercial code as may be required to enable it to perform its functions as a market operator.

(2) A market operator shall regulate its operations, standards of practice and business conduct of market participants and their representatives in accordance with its commercial code, policies and procedures as approved by the Authority.

(3) The Authority may, if required in the public interest, direct a market operator to make such commercial code or amend its existing regulations as it may specify in writing:

Provided that if the market operator does not comply with the direction of the Authority within a period of thirty days without providing just cause for such non-compliance to the Authority, the commercial code of the market operator shall be deemed to have been made or amended, as the case may be, and shall take effect accordingly.

[Emphasis Added]

Thus, the use of words "from time to time" with making of the Market Commercial Code clearly shows that it shall have to be a dynamic document. Even the CTBCM detailed design itself refers to this aspect of the market as the market is going to be opened gradually and the MCC may, even otherwise,



required to be changed from time to time if required in the public interest by the Authority.

The working paper does not recommend "provisional" approval of the MCC basis but approve it for a test run period of six months before start of commercial operations of the market. CPPA-G in its latest letter dated 29.04.2022 has also requested for approval of MCC without any prefix of "provisional". The CPPA-G has also submitted in its said letter as follows:

"Moreover, it is submitted before the Authority that CPPA will internally discuss the comments communicated through letters at serial 1 and 2 during the trial run period and based on trial run results share the final comments (if any) for consideration of the Authority during or after trial run."

Query #06: "Whether actions mentioned under the Implementation Roadmap of CTBCM have been complied with by the respective stakeholders?"

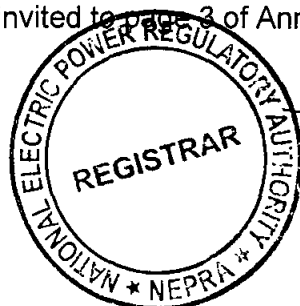
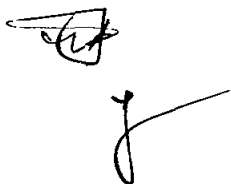
Response: The Legal Advisor (Legislation/CTBCM), responded that:

"Reportedly, implementation of certain actions required under CTBCM have been completed whereas some actions are lagging behind. However, the requisite actions needed for the test run of the market appear to have been completed by the responsible entities and remaining actions are proposed to be directed to be completed during test run period. A "CTBCM Test-Run Plan", in this regards is annexed with working paper for consideration and approval of the Authority".

Query #07: "Whether grant of MO License to CPPA-G without legal separation of the MO will not cause conflict of interest between SPT and MO, both functions being carried out by the CPPA-G?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"As per the CTBCM design and implementation roadmap approved by the Authority, the MO licence was to be granted in December 2021 whereas the legal separation of the MO and SPT function was to be completed by March 2022 (reference is invited to page 3 of Annexure-I of the Authority's approved



CTBCM design). Thus, the legal separation of SPT function and MO functions was to be done subsequent to the grant of MO licence to CPPA-G though the approved CTBCM design recognized the conflict of interest between the two functions.

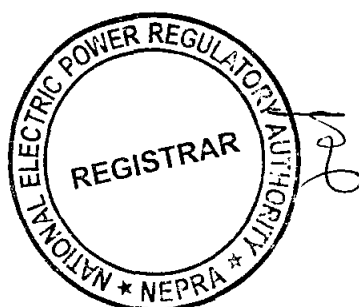
In any case, during the test run period, this may not create any conflict of interest as there will not be any financial or legal implications. Moreover, functional and legal separation provisions are proposed to be incorporated in the MO licence and Authority's determination and Market Operator may be directed to undertake measures for legal separation of the SPT and MO functions within one year of the grant of licence."

Query #08: "Whether grant of MO License prior to completion of actions on part of stakeholders including but not limited to development of New Rules, Market Participation Agreement (MPA) and Special Purpose Trader (SPT) Code, Commercial Allocation of existing PPAs/EPAs, Separation of CPPA-G into Market Operator (MO) and SPT Functions, KEL integration into CTBCM etc. will not have legal and financial repercussions for the power sector?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"The relevant rules are to be, primarily, formulated by the Federal Government. Reportedly, the Federal Government is working on the same and NEPRA has also provided comments on draft rules. The Ministry of Energy has also apprised the Authority in this regard and supported grant of MO licence to CPPA-G and approval of the Market Commercial Code for the dry run. An undertaking from the CPPA-G is also obtained by the Authority for compliance with the relevant eligibility criteria rules as and when framed by the Federal Government. Relevantly, the Authority has previously granted licences in the absence of eligibility criteria rules on the basis of similar undertaking by the applicants.

As far as Market Participation Agreement (MPA) is concerned, reportedly, the applicant has submitted draft of MPA to the NEPRA.



Concerning SPT Code, it is submitted that the relevant timeline has not been met by the CPPA-G in this regard and the Authority has already taken serious note of the same to expedite the action.

With regard to the commercial allocations of existing PPAs/EPAs, it is submitted that relevant provisions are provided in the Market Commercial Code in pursuance of the National Electricity Policy (NEP).

Regarding the question of separation of MO and SPT functions, detailed submissions have been made above.

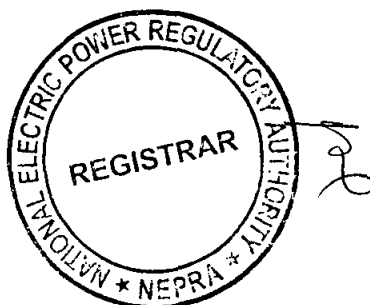
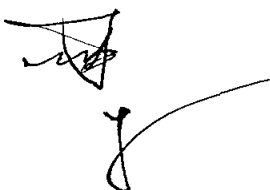
KEL integration into CTBCM is under advance stage of processing with the Authority and the Authority has already held public hearing on the same and case officer report in the matter was also submitted to the Authority.

Accordingly, the Working Paper for approval of MO licence and MCC was submitted for consideration and decision of the Authority keeping in view the timelines set by the Authority.”

Query #09: “Whether MO License is a mandatory requirement for dry run test of Market Operations?”

Response: The Legal Advisor (Legislation/CTBCM), responded that:

“The test run period was set in the CTBCM approved design from August 2021 to Mar 2022; and the MO licence was to be granted in Dec. 2021. Thus, the approved design also envisioned that certain actions with regard to testing the proper functioning of the market functions and applications, could only be completed after grant of MO licence. Moreover, without grant of MO licence and approval of the Market Commercial Code, the requisite legal certainty and firm position required for test run of the Market Commercial Code may not be achieved. Even otherwise, the ground work required for successful commercial operation of the electric power market shall be completed in a more certain and meaningful way once the Authority approves the MO licence and Market Commercial Code as also envisioned in the approved CTBCM design.”



Query #10: "How dry run of CTBCM can be carried out in absence of the BPCs transactions?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"BPCs are one of the market participants and there shall be a number of other transactions in the market. Moreover, the test run can be carried out on the basis of the data available with the CPPA-G from DISCOs and SMS metering etc."

Query #11: "Since power/authority to lift the moratorium under Section 1(3) of the Act rests with the Federal Government, whether comments of the Federal Government are not necessary in the matter?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

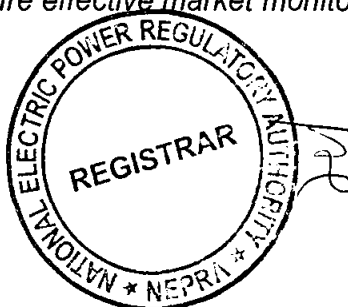
"The Authority has publicized the MO licence application as well as the Market Commercial Code. Thus, any stakeholder including the Federal Government was given the opportunity to provide its comments. The relevant Ministry (MoE) of the Federal Government has provided its comments in the matter that were presented to the Authority. In its comments, MoE has supported grant of MO licence to CPPA-G and approval of the Market Commercial Code.

It is also pertinent to note here that the Federal Government has notified the National Electricity Policy (NEP) with approval of the Council of Common Interest (CCI) wherein the CTBCM detailed design objectives, principles and features as approved by the NEPRA has also been endorsed by the CCI. The relevant clauses of the NEP read as follows:

5.5.1. The efficient and liquid power market design, as approved by the Regulator (CTBCM), will contribute for attaining the policy goals.

...

5.5.4. In order to ensure implementation of wholesale market design and its further evolution, the Regulator shall in a timely manner frame, modify and evolve regulatory framework for, inter alia, supply, procurement, open access / wheeling, competitive bidding, import of power, and ensure effective market monitoring and enforcement.



Thus, NEP clearly requires the regulator to follow the timelines approved in the CTBCM design. Lifting of moratorium is either by the Federal Government or through flux of time. As per section 14A of the NEPRA Act, the NEP is binding on the NEPRA. The relevant provision is reproduced as follows:

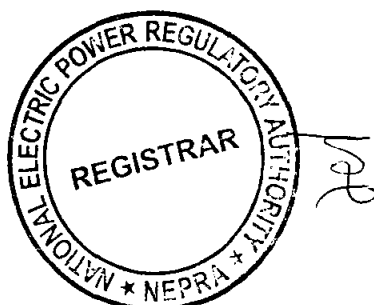
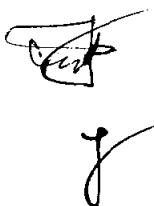
14B (5) The Authority shall perform its functions in accordance with the national electricity policy and the national electricity plan.

It may also be pertinent to mention here that even prior to approval of NEP, the Federal Government in its meeting held on 19.01.2020 vide its Decision No. 65/03/2021 dated 19.01.2021 had approved principles for establishing competitive whole market, essential design features of CTBCM and timelines for its implementation upon recommendation by the CCoE (Decision No. CCoE 07/02/2021 dated 14.01.2021). (Copy of the notification of the above decisions is enclosed as Annex-I). Thus, the intention of the Federal Government pertaining to timely start of the market and completion of relevant actions is clear from the above decisions/correspondence and NEP".

Query #12: "Is it not needed to seek clarification from MoE (PD) that its comments regarding grant of MO License conveyed through correspondence dated 19.04.2022 are MOE's own comments/views or the comments of the Federal Government?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"In addition to the above detailed submissions, it is humbly submitted that the NEPRA Act requires the Authority to act as an independent regulator. Even otherwise, Supreme Court's Judgment in Mustafa Impex Case (reported as PLD 2016 SC 808), whereby the Federal Government is defined as a collective of Prime Minister and the Cabinet, pertains to those cases where a statute requires something to be done by the Federal Government. Pertinently, under the NEPRA Act, the Authority is not legally required to seek comments of the Federal Government before a decision on the licence application. Nevertheless, the Authority is free to seek input from any specific stakeholder as may be deemed necessary."



Query #013: "Please also confirm how can CTBCM can be implemented in the presence of Stay Order of Islamabad High Court against wheeling decision of NEPRA dated 11-01-2021?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

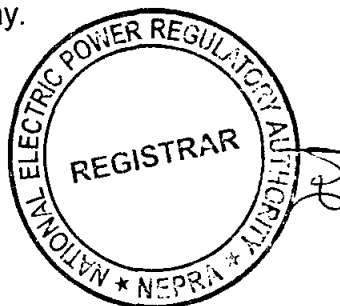
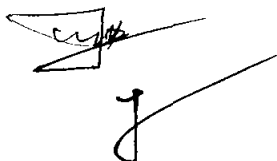
"CTBCM framework is being formulated and implemented in pursuance of the NEPRA Act (this exercise was to be completed within one year of the amendments introduced in the NEPRA Act in 2018). Whereas the said stay order is with regard to wheeling agreements to be entered under the NEPRA (Wheeling of Electric Power) Regulations, 2016. The said stay order does not extend to the grant of MO licence and the Market Commercial Code and other regulations recently approved and notified by the Authority as to-date. Moreover, the Authority may have to reconsider its decision dated 11.01.2021 keeping in view the directions given in the NEP with regard to the open access charges, cross-subsidy etc. It is also pertinent to note here that the NEPRA (Wheeling of Electric Power) Regulations, 2016 are also being reviewed keeping in view the relevant provisions of the NEPRA Act as amended up-to-date, approved CTBCM design and NEP. In view of the above, we do not see the said stay order as a hurdle in the grant of MO licence and approval of Market Commercial Code."

Query #14: "Under Section 1(3) of Act, the Federal Government can lift moratorium on Sections 23A, 23B, etc. earlier than five years by notification in the official Gazette; Since no such notification has so far been made, can NEPRA process the MO License application in the absence of such notification?"

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"Yes, NEPRA can process and issue the MO licence in the absence of notification under section 1 (3) of the NEPRA Act.

It is submitted that the very purpose of moratorium read with section 22 of the General Clauses Act, 1897, is to enable the relevant stakeholders to make necessary preparations so that when the law comes into force, it can be implemented without any further delay.



In this regard, reliance is also placed on case law reported as **2004 (2) ALD 592:**

*16. This Section [Section 22 of the General Clauses Act] is analogous to Section 37 of the English Interpretation Act, 1889 i.e., exercise of powers between passing and the commencement of Act. This section is filling in the gap between the passing and the coming into operation of an enactment. An Act may be passed any day but its commencement may be postponed and various orders or Rules may be needed to bring it into operation. **This section virtually provides for the things preparatory to the commencement of an Act and an authority is given by this section to make provision for all such incidents and instrumentalities with the aid of which enactment is to achieve its purpose.***

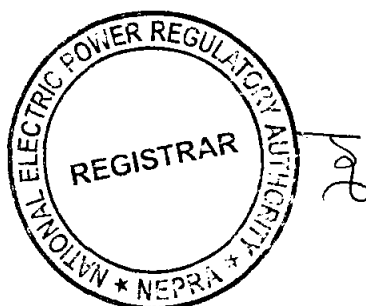
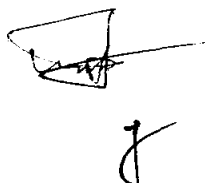
[Emphasis Added]"

Query #15: "To my understanding there is no need of MO Licence for dry run operations of CTBCM? Please confirm this understanding."

Response: The Legal Advisor (Legislation/CTBCM), responded that:

"The grant of MO licence even prior to lifting of the moratorium shall be needed for, inter alia, following reasons:

1. It will show Authority's commitment and resolve in meeting the timelines set by it with regard to the opening of electric power market and shall be in accordance with the Authority's approved CTBCM design which is also endorsed in National Electricity Policy;
2. It will bring the required legal certainty and firm the obligations of the MO and relevant stakeholders of Market Commercial Code against which test run shall be conducted;
3. In fact issuance of MO licence during moratorium is a blessing in disguise as it will enable the MO and other stakeholders to test their systems in light of the firm Market Commercial Code during the test run without any legal implication. Otherwise, if moratorium is lifted, a legal



question may be raised as to Authority's powers to allow test run of the Market Commercial Code without legal and financial implications;

4. It is a landmark step being taken by the Authority in the history of electric power market, therefore, issuance of licence at this stage with a test run period shall provide sufficient time for relevant risk management;

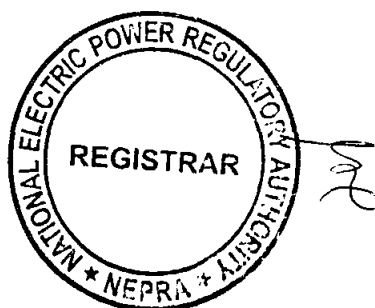
5. It will enable CPPA-G to firmly put in place functional separation between the SPT and MO functions within CPPA-G and move towards legal separation;

6. Without grant of MO licence and approval of Market Commercial Code, NEPRA may not be able to fully firm up the obligations of the DISCOs during their licence renewals;

7. There are certain elements that are being approved in the Market Commercial Code against which test run is to be conducted. In the absence of approval of Market Commercial Code, the Authority may not have a legal basis to direct the relevant stakeholders to act accordingly to those factors. For instance, the allocations factors of DISCOs are being approved in the Market Commercial Code against which these DISCOs shall calculate their mock financial obligations and settlements.

It is submitted that in order to test run/dry run the market, the performance of IT tools, software deployed for transactions in the market (i.e. Market Management System, System Operator Data Exchange Portal, Marginal Price Discovery Application etc.) is required to be tested. Further, the MO and SO have to check the validity of data received from SMS metering system to calculate system marginal price and subsequently run the balancing mechanisms.

All these IT systems, software and the processing of data received from SMS metering systems and subsequent calculations of balancing mechanisms for energy and capacity (i.e. BME and BMC) are based on the procedures and mechanisms proposed in the Market Commercial Code (MCC).



Therefore, if the MCC is not approved, which is linked with the grant of MO licence, the abovementioned actions i.e. dry run of the market cannot be started."

Query #16: "If the MO licence is necessarily required for dry run, how an ineffective MO Licence (i.e. till lifting of moratorium) could provide the required legal backing?"

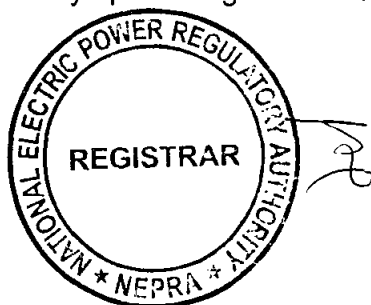
Response: The Legal Advisor (Legislation/CTBCM), responded that:

"The MO licence and Market Commercial Code approved by the Authority (though ineffective during moratorium) shall provide a firm document on the basis of which necessary steps for fully functional electric power market can be taken. For instance these shall enable the relevant stakeholders and their Boards for necessary decision making and assignment of market related roles within their own organizations.

As explained above, the dry run period will be used to test the effectiveness and accuracy of the IT tools, softwares, and market transaction mechanisms for whole sector including BPCs (BME, BMC, marginal price calculations, settlement etc.). Therefore, even if the MO licence is not effective, the approved MCC will provide certainty that the mechanisms/formulas proposed in the MCC are approved by the Regulator and can be used by the sector entities i.e. MO, SO, and other relevant entities to test run their systems and identify any issues that may arise during test run.

Based on the above, the MO can propose amendments in the MCC (if any required) so that before the actual start of the market, all the relevant systems, methodologies, mechanisms, after due testing, can be firmly approved and made available for the efficient and liquid power market operations.

Accordingly, the grant of MO licence and approval of MCC is considered necessary for the dry run of the CTBCM. Otherwise, it is considered that if the MO licence is not granted till lifting of moratorium, then the dry run of the market will be accordingly delayed for such period and the market will not commence immediately upon lifting of the moratorium."



(G). Analysis/Findings of the Authority

(i). The Authority has examined the Application, the MCC, comments of the stakeholders and rejoinder of the CPPA-G, internal deliberations, response of Legal Advisor (Legislation/CTBCM) to the queries raised by Member (Licensing/Tariff), provisions of the Act, the rules and regulations, the CTBCM Design, the Implementation Roadmap, and other applicable documents.

(ii). In this regard, the analysis/findings of the Authority can be bi-furcated as follows:

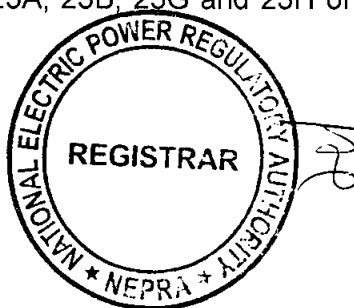
(a). Findings/Analysis on the Application; and

(b). Evaluation/Analysis on the MCC;

(a). Findings/Analysis on the Application

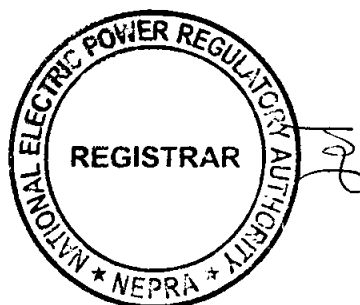
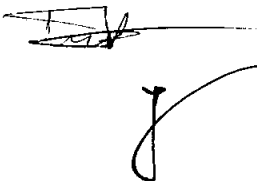
(i). The Authority observes that the Act was amended through the Amendment Act 2018 which received the assent of the President on 27.04.2018 and was notified on May 02, 2018. The Amendment Act 2018 amends the Act to provide the required regulatory framework for the introduction and development of a competitive electric power market in the country. In this regard, *inter-alia*, Sections 23A and 23B were introduced in the Act which provide for grant of the MO licence and its duties and responsibilities.

(ii). However, Section 1(3) of the Act stipulates that Sections 23A, 23B, 23G and 23H of the Act shall come into force within a period of five (05) years of coming into force of the Amendment Act 2018 or at such an earlier date as may be notified by the Federal Government. Section 1 (2) of the Amendment Act 2018 states that it shall come into force at once, however, no particular date for its coming into force is given. As per Section 5 of the General Clauses Act, 1897, where no particular day for coming into force of an Act of the Parliament is provided, it shall come into force on the day it receives assent of the President, which in the instant case as per the Gazette Notification of the Amendment Act, 2018 is 27.04.2018. Thus, Sections 23A, 23B, 23G and 23H of the Act shall come into force

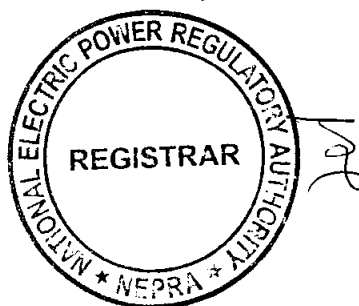


on 27.04.2023 (upon expiry of the five year period from the promulgation of the Amendment Act 2018) or on any earlier date as may be notified by the Federal Government.

- (iii). The Authority is of the view that the legislative intent behind placing moratorium on the abovementioned sections was to provide a transition period for a smooth shift from the existing single buyer regime towards the competitive electric power market.
- (iv). In consideration of the above, the Authority vide its determination dated November 16, 2018, granted the Registration to the CPPA-G to act as the MO and develop a model for competitive market operations and submit the same for approval of the Authority.
- (v). The CPPA-G prepared and submitted the high-level/conceptual design of the CTBCM model for approval of the Authority in 2018. The Authority reviewed the submitted model and after due diligence approved the high-level design of the same in December 05, 2019 and the CTBCM Detailed Design along with an Implementation Roadmap of the same on November 12, 2020. The Implementation Roadmap contained eighteen (18) Group of Actions to be taken by the relevant power sector entities i.e. the NEPRA, MoE(PD), CPPA-G, NTDC, NPCC, XW-DISCOs, KEL, AEDB and PPIB for implementation of the power market.
- (vi). It is pertinent to mention that in terms of Section 23A of the Act, the person acting as the MO on the date of commencement of the Amendment Act 2018 shall apply for the grant of the MO licence. Since the CPPA-G was acting as the deemed MO on the said date, therefore, it has submitted the Application. Currently the CPPA-G is performing two roles, i.e. (i). the MO, and (ii). agent of DISCOs. The said roles have inherent conflict of interest as the agent of DISCOs (the market participants in the CTBCM) may not be able to act as an impartial MO. Moreover, the MO must not have any commercial interest in the market operations.



- (vii). The Authority duly identified the above conflicting roles in the Registration as well as in the CTBCM Design. Accordingly, the registration obligated the CPPA-G to remove any conflict of interest that may impact its functioning as an independent and impartial MO, including but not limited to segregation, bifurcation or removal of its power procurement and agency functions from other MO functions. In this regard, the abovementioned Implementation Roadmap also contained timelines whereby the CPPA-G was required to functionally separate the MO and agency functions followed by their legal separation. Further, the CPPA-G was also required to submit separate applications for the grant of MO licence and registration as SPT under Sections 23A and 25A of the Act respectively, to pave way for their functional and legal separation. In light of the same, the CPPA-G submitted the Application for grant of MO licence in October 2021 and as explained in Para B(ii) till B(iv) above, the Authority decided to process the same.
- (viii). The Authority observes that although Sections 23A and 23B have not yet come into force till date and the eligibility criteria rules required for the grant of the MO licence have not yet been prescribed by the Federal Government, the grant of the MO licence and the approval of the MCC are critical to prepare the grounds for the commencement of the CTBCM.
- (ix). It is important to note here that the MCC is the governing document for all the market transactions and therefore it is imperative that the formulas, methodologies, and the processes contained therein and the IT system developed based on the same are tested and the associated risks are identified and mitigated before actual market transactions can take place. This will develop the confidence of the market players and enhance their understanding of the processes and system to be used in actual market transactions. The same was also envisioned in the Implementation Roadmap wherein six (06) months were dedicated for dry run of the market before the CMOD.



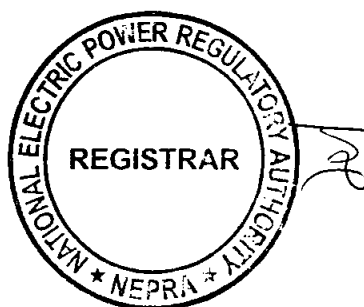
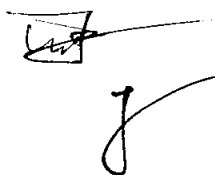
- (x). The Authority considers that Section 22 of the General Clauses Act, 1897 provides sufficient powers for the grant of licence along with the approval of the MCC in the presence of moratorium on the relevant sections of the Act i.e. Sections 23A and 23B. As highlighted above, the Authority is of the considered opinion that moratorium was enacted so that the necessary preparation/steps for transition towards competitive electric power market can be undertaken during that period. This means that the readiness to achieve the competitive market operations is to be ensured before the end of moratorium period as given in the Act. However, if the grant of license to the MO is put on hold till the lifting of moratorium in May 01, 2023, the commencement of the market might get delayed.
- (xi). Further, it is also noted that MoE (PD) has initiated the process of lifting of moratorium and circulated the draft summary dated April 12, 2022 for stakeholder's comments and subsequently NEPRA has also supported the same through letter dated April 21, 2021. In this context it is also important to observe here that as per Section 23A (1) of the Act, the existing MO was to apply for the grant of MO licence within a period of one year from the date of commencement of the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018 (the "Amendment Act, 2018"). The same reads as follows:

23A. The Market Operator licence.— (1) No person shall, unless licensed by the Authority under this Act and subject to the prescribed conditions, act as a the MO:

Provided that any person acting as the market operator on commencement of the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018, shall within a period of one year apply for a licence under this Act:

Provided further that only one the market operator licence shall be granted at one time.

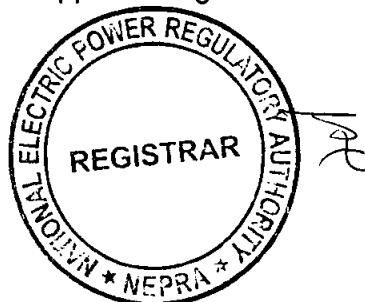
[Emphasis Added]



Although Section 23A of the Act has not yet come into force, nevertheless, the intent of legislature appears to be clear from first proviso to Section 23A (1) of the Act that reference point for calculation of the period of one year for applying for MO licence is commencement of the Amendment Act, 2018, and not coming into force of Section 23A of the Act. Even otherwise, whenever the moratorium is lifted, it shall mean that the time period provided in the law to apply for the MO licence shall have already passed. Thus, it may be safe to conclude that when first proviso of Section 23A (1) of the Act is read with Section 22 of the General Clauses Act, 1897, the MO should have approached the Authority for grant of licence within one year of the commencement of Amendment Act 2018.

(xii). Regarding eligibility criteria rules, the Authority observes that the CPPA-G being a wholly owned company of the GOP has submitted that in the Application that it has the necessary human resources and technical capabilities to undertake the functions as the MO. Further, an undertaking has also been submitted by the CPPA-G that it shall comply with any requirement/conditions which may arise due to the finalization of the MO eligibility criteria rules by the Federal Government. It is important to highlight here that in the past the Authority has also granted the licences to Provincial Grid Companies in the absence of the eligibility criteria rules considering that the applicants were provincial government owned companies and submitted undertaking/certificates to comply with the eligibility criteria whenever prescribed. In view of the said, the Authority considers that the MO licence can be granted in the absence of eligibility criteria rules.

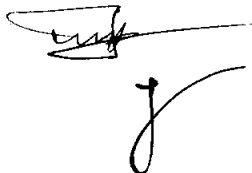
(xiii). Regarding the agent role of the CPPA-G, the Authority observes that though necessary actions in this regard should have been taken timely by bifurcating the CPPA-G in two separate entities whereby CPPA-G's role as agent of DISCO was entrusted to one entity and the MO function was given to another entity. However, as CPPA-G has applied for grant of the MO licence while relying on



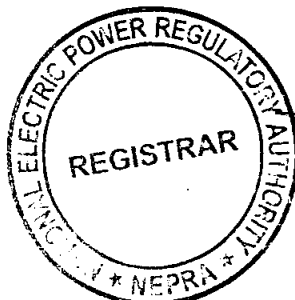
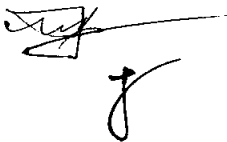
first proviso to Section 23A (1) of the Act and the MoE has also supported the Application, the Authority considers that MO licence can be granted to CPPA-G for the time being with clear directions to immediately ensure functional separation of the two roles in order to properly manage any conflict of interest and move towards legal separation of the two roles in two distinct entities as per the timelines provided hereunder. The Authority is of the considered opinion that the existing registration certificate granted to CPPA-G as the MO shall be limited to its role as agent of DISCOs and market operations and development function shall be carried out in pursuance of the MO licence. CPPA-G's registration certificate is to expire within period of five years from the date of its issue or upon coming into force of Section 23A of the Act (whichever is earlier), therefore, CPPA-G is to file, within a period of one month, a separate application for registration of its role as agent of DISCOs in line with the approved CTBCM detail design under Section 25A of the Act read with NEPRA (Registration) Regulations, 2022.

(b). Evaluation of the MCC

- (i). Before making the MCC public for comments of the stakeholders, the Authority internally reviewed the same and also got it reviewed from its international consultant. In this regard, the Authority observed that the MCC contained provisions that fell under the domain of the Regulator like market monitoring, dispute resolution, imposition of fines and penalties on market participants, registration of market participants etc. Further, the MCC also contained provisions that were out of the scope of the MCC including the operational and technical matters falling under the domain of the Grid Code and the Distribution Code.
- (ii). In consideration of the above, the observations of the Authority were forwarded to CPPA-G on November 8, 2021 and November 25, 2021. In these observations, the Authority directed the CPPA-G to remove and update the abovementioned provisions and submit a revised MCC for approval of the Authority.

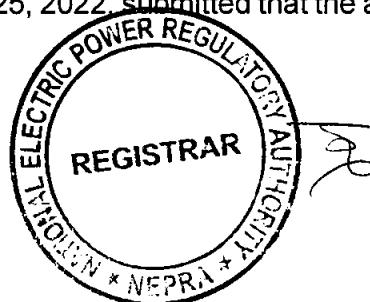
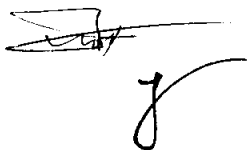


- (iii). The CPPA-G submitted its detailed response to the above comments/observations of the Authority on December 24, 2021. The said response was examined and further observations were communicated to the CPPA-G through various communications. In view of the said, the CPPA-G proposed to hold a discussion session to discuss the observations of the Authority on the MCC especially (a). establishment of the procedures and conditions for the MO administration, (b). dispute resolution mechanism, (c). causes for rejection of amendments to MCC, (d). open access rights and non-discriminatory services by service providers, (e). registration of transmission service providers/distribution service providers with the MO, (f). allocation of legacy contracts and its effect on consumer tariffs, (g). clarity on the role of market monitoring and surveillance (h). imposition of penalties (k). disconnection order by MO (l). CCRP constitution and composition; and (i) security cover mechanism, etc.
- (iv). Consequently, dedicated sessions were held in January 2022 and the above-mentioned observations of the Authority were thoroughly discussed and deliberated upon. In light of the said sessions, the CPPA-G submitted a revised draft of the MCC in March 2022 for approval of the Authority. The Authority made the draft MCC public along with the Application for comments of the general public, interested/affected persons, and the stakeholders.
- (v). In this regard, the Authority has considered the comments of the stakeholders as detailed in Para (D) above and observes that the comments raised by the stakeholders are more of operational and technical nature except the comments of Uch, Uch-II, and IPPAC which have proposed the inclusion of protection clause in the MCC for the legacy IPPs. In this regard, the Authority observes that in the CTBCM Design, the legacy IPPs are protected and saved from the potential impact of the CTBCM. As for the other comments of the stakeholders, the Authority considers that the same have been duly responded by the CPPA-G in a plausible manner as detailed in Para (E) above. Further, as explained in the above analysis, the Authority



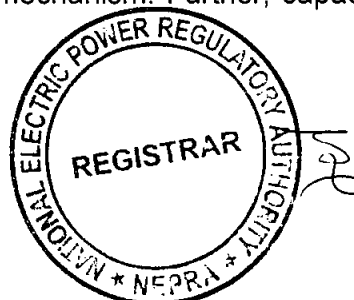
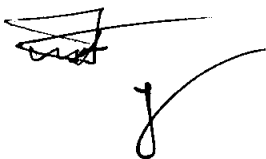
considers that the provisions of the MCC are required to be duly tested so that the confidence of stakeholders can be developed on the same. Therefore, the Authority considers it prudent that before the actual commercial market operations, a soft-launch of the market must be carried out involving all relevant stakeholders to test the methodologies, processes of the MCC and make necessary adjustments before the commencement of the actual transactions in the market.

- (vi). At an advanced stage of processing of the Application, the Authority received a request dated March 31, 2022, from the CPPA-G's operational/SPT team to hold in abeyance the proceedings for the approval of the MCC and allow it to resubmit the draft code after making key structural changes and improvements. The Authority rejected the request of the CPPA-G vide its letter dated April 5, 2022, considering that the same had already been submitted with significant delay and any delays may have an adverse impact on the CMOD of the CTBCM and therefore, directed it to provide comments (if any) in writing during the consultation process.
- (vii). In response, CPPA-G through its letter dated April 19, 2022, provided its comments with regard to the draft code pertaining to (a). role of the MO in the settlement and payment of imbalances among market participants, (b). the provisions w.r.t. imposition of default interest on the market participants, (c). the identification of market participants that are party to imbalance settlement, (d). security cover mechanism and the associated risks in case of default by market participants, (e). marginal price methodology, (f). balancing mechanism for capacity and the associated effectiveness of security covers in case of default by market participants, (g). treatment of and payments w.r.t ancillary services, (h). role of the MO pertaining to determination of firm capacity certificates, (i). mechanism for treatment of transmission and distribution losses.
- (viii). In furtherance of the above, the CEO CPPA-G through its letter dated April 25, 2022, submitted that the abovementioned comments



were proposed by the operational/SPT team to further fine tune the draft MCC. Further, it was requested in the letter that the Authority may grant the MO licence along with the 'provisional' approval of the draft MCC for test-run of at least six (06) months so that the changes/improvements are proposed in the provisionally approved code in light of the test run for approval of the Authority.

- (ix). In light of the above, the Authority is of the considered opinion that the MCC originally submitted by the CPPA-G along with the Application has been thoroughly examined and is found to be based on global best practices in the competitive electric power markets. The same has also been reviewed and endorsed by the external consultant of the Authority. Further, as explained in above paras, the observations of the Authority as were also addressed by the CPPA-G and a revised draft MCC was submitted which was made public for stakeholders' consultation.
- (x). The Authority observes that the abovementioned comments by the SPT/operational team of the CPPA-G and are not endorsed by its Board of Directors as also evident from the above letter of the CEO CPPA-G where the MO licence and MCC were originally submitted with authorization of its Board of Directors. It is important to mention here that the comments forwarded by the SPT/operational team appear to misconceive the relevant CTBCM concepts. For example, it has been commented that the MO cannot take credit cover and make payments to the market participants for energy imbalances. Further, it is commented that the determination of firm capacity certificates and the planning for capacity expansion fall within the ambit of the Ministry of Planning, Development and Special Initiatives. In this regard, it is important to note that the very concept of the MO is to provide a centralized settlement mechanism to build necessary trust in the market. An overview of electric power markets around the globe shows that in various markets, the MO perform this function and settle the imbalance payments through a central clearing mechanism. Further, capacity expansion planning



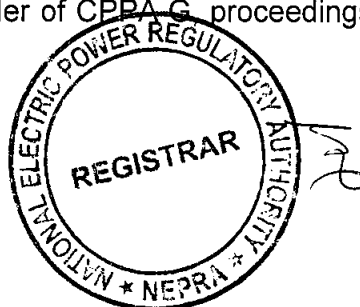
is a function assigned under the Act to the system operator. Moreover, in the electric power market, private players shall be at liberty to plan and expand their capacity as per their business needs whereas the procurement of capacity by suppliers of last resort shall be regulated by the Authority.

(xi). In view of the above, the Authority observes that the above-mentioned comments do not require any intervention at this stage. However, during the soft-launch of the market, if any improvements are required in the MCC based on the test-run of the various systems and processes developed under the said code, the same can be submitted for consideration of the Authority. It is also pertinent to mention that CEO CPPA-G vide letter dated April 29, 2022, further clarified and submitted that CPPA-G team will internally discuss the comments earlier communicated to the Authority and share the final comments (if any) for consideration of the Authority during or after the test run and requested that Authority may consider the grant of MO License to the CPPA-G alongwith the approval of MCC for the test run on the actual data of at least 6 months.

(xii). Regarding the request for provisional approval of the MCC, the Authority observes that there will be a period of test run before the actual market transactions are allowed with financial and legal implications to take place, therefore, there will be an opportunity for the CPPA-G to thoroughly test process and mechanisms of MCC in light of the test run of the market in consultation with all the relevant stakeholders including SPT team of the CPPA-G and changes if any required in the MCC, can be proposed to the Authority in the report to be submitted to the Authority upon completion of test run period by the licensee.

(H). Decision of the Authority

(i). The Authority has examined the Application, the draft MCC, comments of the stakeholders, rejoinder of CPPA-G, proceedings of the public hearing in the



matter, internal deliberations and responses, provisions of the Act, rules, regulations and other applicable documents.

(ii). In this regard, the Authority considers that the grant of the MO licence and approval of the MCC are necessary for timely CMOD of the CTBCM. Although the MO licence and the MCC shall come into effect upon commencement of the Section 23A and 23B of the Act, the period of moratorium presents an opportunity to test-run the processes and IT system before actual operations in the market.

(iii). In this regard, the Authority hereby approves the grant of the MO licence to the CPPA-G subject to the terms and conditions contained in the licence along with approval of the MCC, and CTBCM test-run plan to be under taken by the CPPA-G during the soft-launch of the market (attached with this determination as Annexure-B) with the following decisions and directions:

(a). Market Commercial Code

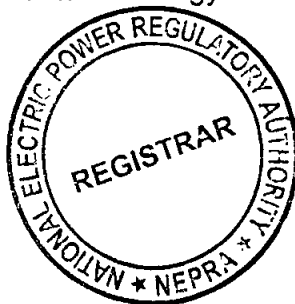
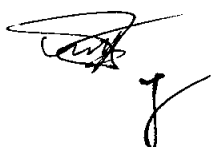
The Authority approves the Market Commercial Code attached to this determination (as Annexure-A) for test-run during the soft-launch of the market.

(b). Test-run/Soft Launch of the Market

The CPPA-G in its role as the MO shall test and implement, without any financial implications for any players in the market, the MCC and the processes, IT systems, and methodologies developed thereunder for a period of six (06) months from the date of issuance of this determination.

The said period of six (06) months shall be considered the soft-launch of the market. Provided that commencement of Sections 23A and 23B of the Act before completion of the afore-said six months period, shall not reduce the period of soft-launch.

For the purpose of test-run, the CPPA-G shall perform the activities such as enrolment of market participants and service providers, commercial allocation and registration of legacy contracts, collection of metering information, calculation of firm capacity certificates, calculation of capacity obligations, calculation of security covers, shadow monthly settlement statements for energy and capacity imbalance etc.



During test-run of the market, the CPPA-G shall coordinate with the DISCOs, NTDC (in its roles as TSP and system operator), KEL, and other stakeholders to perform the test-run plan actions as per Annexure-B of this determination.

During test-run of the market, the CPPA-G shall publish on its website all such information which is necessary to facilitate and develop understanding of the market players and stakeholders about the market.

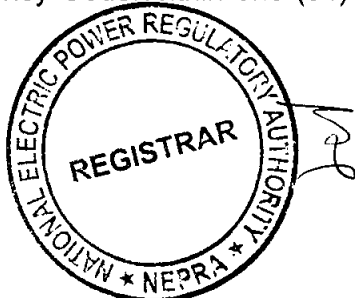
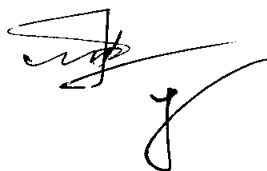
(c). Test-Run Report

During the period of market soft-launch, the CPPA-G shall submit monthly progress reports to the Authority highlighting the actions taken, issues faced, and measures taken to address such issues during the reporting period.

Within seven days of the completion of the test-run/soft-launch period, the MO shall submit a comprehensive final test-run report in consultation with NTDC and DISCOs and other relevant stakeholders to the Authority proposing, *inter alia*, (a). the amendments to be made in the MCC in light of the results of the test-run (if any), (b). performance of the test-run plan actions, findings and problems detected during this period, (c). the improvements to be made in the operating procedures and IT infrastructure; and (e). recommendations, if any, regarding the amendments in any other applicable document.

(d). Functional and Legal Separation of CPPA-G

In the CTBCM detailed design, the CPPA-G's existing role as an agent of DISCOs was termed as Special Purpose Trader (SPT) to be a registered entity. However, as electric power trader is a defined term in the Act that requires a licence under Section 23C of the Act and even otherwise, the functions to be performed by CPPA-G as agent of DISCOs do not qualify as purely trading function rather CPPA-G acts as an agent of DISCOs. Therefore, the term Special Purpose Trader (SPT) is being replaced with the term Special Purpose Agent (SPA). Moreover, the title of existing Commercial Code of CPPA-G shall also be re-named accordingly as Agency Code. Within one (01) month of the issuance of



this determination, the CPPA-G shall submit an application to the Authority for the grant of registration as Special Purpose Agent of DISCOs (SPA) along with the draft Agency Code (AC) to perform its role as Agent of DISCOs and accompanied with a proposed roadmap for legal separation of the SPA and the MO functions within one (01) year from the date of issuance of this determination.

Until such time the functions of the Licensee as agent of the DISCOs and Market Operator are not separated in two distinct legal entities, the Licensee shall ensure that its business is operated in such a manner that the management responsible for Market Operations and accounting thereof is segregated from the CPPA-G's role as agent of the DISCOs so that the Market Operations are carried out independently, transparently, and impartially. This segregation of two functions of the Licensee shall be ensured at the earliest but in any event not later than three months from the date of issuance of this determination.

(e). **Competitive Market Operations Date (CMOD)**

Based on the review of the final test-run report, the Authority may declare in writing the date on which the actual competitive market operation shall start, provided that such date shall not precede the date on which Sections 23A and 23B of the Act come into force.

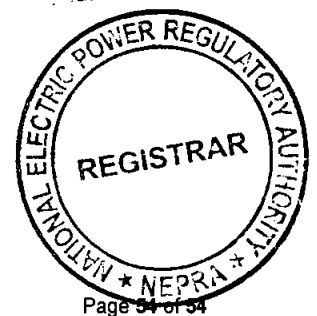
⊗ I am making this decision
based on the comments given
in responses to my question
by F.A. (C.T.B.C.M.) Authority

Maqsood Anwar Khan
Engr. Maqsood Anwar Khan
Member

Rafique Ahmed Shaikh
Engr. Rafique Ahmed Shaikh
Member

Tauseef H. Farooqi
Engr. Tauseef H. Farooqi
Chairman

⊗ My dissent is attached herewith.
30/5/22



At the outset, I would like to mention that for development of Electric Power Market in Pakistan the requirement of Independent Market Operator and Independent System Operator was introduced in NEPRA Act through amendment made in April 2018.

Section 23A¹ & 23B of the amended NEPRA Act are dealing with the requirement of Independent Market Operator while Section 23G² & 23H are dealing with the requirement of Independent System Operator.

It is relevant to mention that all amendments made in NEPRA Act in April 2018 came into force at once i.e. on the date of their notification in the official gazette except for the Section 23A, 23B, 23G and 23H. Regarding commencement of these Sections (23A, 23B, 23G and 23H) it is mentioned in the Section 1(3)³ of NEPRA Act that these will come into force within a period of five years of coming into force of the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act 2018 or on such earlier date as the Federal Government may, by notification in the official gazette, appoint.

It is a fact on record that no such notification has so far been made in the official gazette, meaning thereby, that the Sections dealing with the license of Market Operator and System Operator in NEPRA Act have not come into force as yet. Therefore, on account of exception provided in Section 1(3) of NEPRA Act, the present NEPRA Act does not provide strength to grant license for Market Operator as well as System operator.

It is being advised that the license can be granted under the provisions of General clauses Act. In case, if any such license is granted under General Clauses Act then still it will not be effective till these Sections of NEPRA Act come into force. Thus, I am finding no benefit of granting an ineffective license that too in haste.

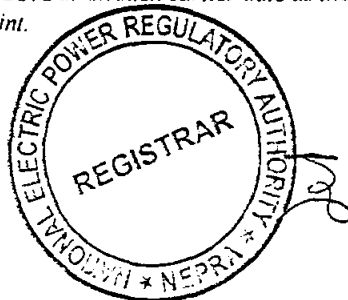
It is relevant to mention that several Actions envisaged on part of stake holder(s) in the implementation road map of the CTBCM dated 12.11.2020 have not been completed yet. These actions include but not limited to the Development of New Rules, New Commercial Code along with Market Participation Agreement (MPA) and Special Purpose Trader (SPT) Code, Commercial allocation of existing PPAs/EPAs, Separation of CPPA-G into Market operator (MO) and Special Purpose Trader (SPT) Functions, NPCC Actions including its strengthening, DISCOs Actions including their strengthening, KEL integration into CTBCM etc.

Furthermore, the communications dated 31.03.2022, 19.04.2022, 25.04.2022 (copies attached) received from CPPA-G also show that the applicant requires more time and consultation/Assistance to finalize the draft Commercial Code. In case if applicant itself want more deliberation on the draft

¹ 23A. **Market Operator licence.**— (1) No person shall, unless licensed by the Authority under this Act and subject to the prescribed conditions, act as a market operator:

² 23G. **System Operator licence.**— (1) No person shall, unless licensed by the Authority under this Act, undertake functions as a system operator as may be specified by the Authority, including but not limited to.

³ It shall come into force at once, except sections 23A, 23B, 23G and 23H which shall come into force within a period of five years of coming into force of the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018 or on such earlier date as the Federal Government may, by notification in the official Gazette, appoint.



Commercial Code then granting license and approving Commercial Code, even on provisional basis, may not be appropriate.

The development of Electric Power Market, is very sensitive issue and may impact power sector in Pakistan. Therefore, this issue needs to be dealt very carefully after ensuring that all stakeholders are on board and fully prepared with actions on their part completed. Careful processing of the license application becomes more important because the electric power sector of Pakistan is already facing serious financial challenges.

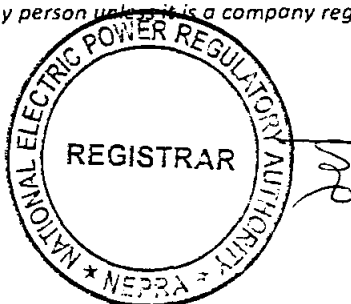
It is also a fact that there is conflict of interest among the SPT and the Market Operator; therefore, besides functional separation, legal separation of CPPA-G into Market operator and Special Purpose Trader was also envisaged under Action 7 of the Group of Action but same has not been done yet. Under Section 24 of NEPRA Act⁴, the licence shall not be granted to any person unless it is a company registered under the Companies Ordinance, 1984. In the instant case, CPPA-G has applied for MO license instead of a separate company incorporated to act as independent MO. In the backdrop of conflict of interest mentioned above as well as for functional and legal separation of MO function, ideally a separate company should have been formed to act as independent MO which should have applied for grant of MO license.

Similarly, for transparent Market, independent System Operator (SO) with NEPRA approved license is also necessary but no such progress has been witnessed on this front. The anticipated date for SO restructuring and licensing was mentioned as September 2021 under Group Action 9 of the Implementation Roadmap of CTBCM.

It is being stated that provisional Market Operator License may be granted for dry run (pilot shadow market) of the proposed electric power market. In this regard I am of the considered opinion that there is no requirement of Market operator License for dry run of the proposed market. In the implementation road map of CTBCM, under Group Action No. 17, the date to initiate dry run (Pilot shadow market to test live systems mechanism) is mentioned as August 2021 while under Group Action No. 7, the anticipated date for grant of Market Operator License is mentioned as December 2021. It clearly shows that the Authority has already decided to initiate dry run operation independent of having Market Operator license.

Therefore, in my opinion it is much better to start dry run immediately without waiting for MO license and in light of the experience of trial run, wherever felt necessary, the commercial code be updated and thereafter the license for Independent Market operator be granted along with the approved Commercial Code. Further, the respective entities also be directed to complete all their designated actions in the Implementation Roadmap of the Competitive Bilateral Contract Market approved by the Authority on 12.11.2020. In my opinion the relevant entities may also be directed to complete necessary work to file application for grant of license for independent System Operator till the time the Sections 23G of NEPRA Act regarding System Operator license comes into force.

⁴ 24. **Licensees to be companies.**-Except WAPDA, the [PEDO] or any other person specially exempted by the Authority a license shall not be granted to any person unless it is a company registered under the Companies Ordinance, 1984 (XL VII of 1984)



20

**National Electric Power Regulatory Authority
(NEPRA)
Islamabad – Pakistan**

MARKET OPERATOR LICENCE

No. MOL/01/2022

In exercise of the powers conferred under Section 23A of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Act No. XL of 1997) as amended from time to time, the Authority hereby grants the Market Operator Licence to

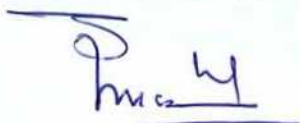
Central Power Purchasing Agency (Guarantee) Limited

Incorporated under Section 32 of the Companies Ordinance
1984, having Corporate Universal

Identification No. 0068608, dated January 28, 2009

to carry out the functions, operations, and responsibilities of Market Operator subject to and in accordance with the terms and conditions of this Licence enclosed as Annex-I.

Given under my hand this on 31st day of May Two Thousand & Twenty-Two and expires on 31st day of May Two Thousand & Forty-Two.



Registrar



Annex-I

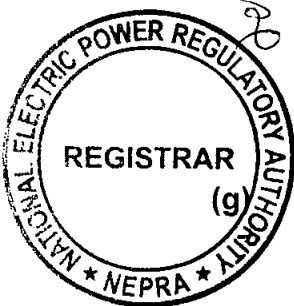
Terms and Conditions of Market Operator Licence

Article 1

Definitions

1.1 In this Licence, unless there is anything repugnant in the subject or context, —

- (a) "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Act No. XL of 1997) as amended from time to time;
- (b) "Applicable Documents" means the rules, regulations, terms and conditions of any licence, registration, authorization, determination, any codes, manuals, directions, guidelines, orders, notifications, agreements and documents issued or approved under the Act;
- (c) "Authority" means the National Electric Power Regulatory Authority established under Section 3 of the Act;
- (d) "Commercial Code" or "Market Commercial Code" means the Commercial Code prepared and maintained by the Market Operator pursuant to Section 23A and Section 23B of the Act and as amended from time to time and approved by the Authority;
- (e) "Confidential Information" shall mean any commercially sensitive information relating to a Market Participant or a Service Provider and shall include any other information as may be declared confidential by the Authority or in a Market Participation Agreement, service provider agreement or the Market Commercial Code;
- (f) "Corporate Governance Rules" means the rules, regulations and guidelines issued by the Securities and Exchange Commission of Pakistan or the Federal Government including but not limited to the Public Sector Companies (Corporate Governance) Rules, 2013;
- (g) "CTBCM" or "Competitive Trading Bilateral Contract Market" means electric power market established in accordance with the high-level and detailed designs approved by the Authority vide its determinations dated 5th day of December, 2019 and 12th day of November, 2020 as may be amended by the Authority from time to time;



- (h) "Effective Date" means the day on which Section 23A and Section 23B of the Act comes into effect.
- (i) "Licensee" means Central Power Purchasing Agency (Guarantee) Limited or its successors or permitted assigns;
- (j) "Licensing Regulations" means the National Electric Power Regulatory Authority Licensing (Application, Modification, Extension and Cancellation) Procedure Regulations, 2021 as amended or replaced from time to time;
- (k) "Market Operations" means the functions, operations and responsibilities to be performed and discharged by the market operator in accordance with the Market Commercial Code and other applicable documents but shall not include the sale and purchase of electric power carried out through contracts between the two parties;
- (l) "Market Operator" means a person responsible for organization and administration of trade in electricity and payment settlements among generators, licensees and consumers;
- (m) "Market Operator Regulations" means the National Electric Power Regulatory Authority Licensing (Market Operator) Regulations, 2022 as amended from time to time;
- (n) "Market Participant" means any person who has signed a Market Participation Agreement with the Market Operator;
- (o) "Market Participation Agreement" means the agreement executed by the Market Operator with another person who had applied to enroll as a Market Participant;
- (p) "Public Information" means any information other than the confidential information;
- (q) "Service Provider" means any distribution or transmission licensee and shall include any licensee or registered person who has signed a service provider agreement with the market operator; and
- (r) "System Operator" means a person licensed under the Act to administer



system operation and dispatch.

1.2 Words and expressions used but not defined herein shall have the same meanings as assigned to them in the Act, National Electric Power Regulatory Authority Licensing (Market Operator) Regulations, 2022 and other Applicable Documents.

1.3 Unless otherwise specified and without prejudice to any provision which restricts such variation, supplement or replacement, any reference to any agreement, licence regulation, statute, code, standard or other instrument shall include a reference to such agreement, licence, rule, regulation, statute, code, standard or other instrument as varied, supplemented, amended, or replaced from time to time.

1.4 Where any obligation under this Licence is expressed to require performance within a specified time limit, that obligation shall continue to be binding and enforceable after that time limit if the obligor fails to perform that obligation within that time limit (but without prejudice to all rights and remedies available against the obligor by reason of the obligor's failure to perform within the specified time limit).

Article 2

Grant of Licence

The Authority hereby grants this Licence to the Licensee to perform the functions of Market Operator subject to the provisions of the Act, rules and regulations made under the Act and other Applicable Documents, and the terms and conditions of this Licence contained herein.

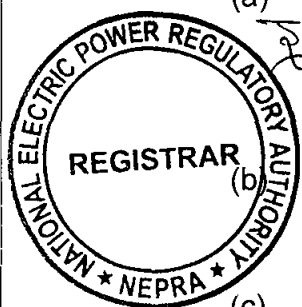
Article 3

Scope of Licence

3.1 This Licence authorizes the Licensee to undertake Market Operations in Pakistan subject to provisions of the Act, the rules and the regulations, as amended or replaced from time to time.

3.2 The Licensee shall perform the following functions:

- (a) organization, development, operation and administration of competitive electric power market in accordance with the Act, rules, regulations, the Market Commercial Code and other Applicable Documents;
- (b) draft or amend, from time to time, the Market Commercial Code with approval of the Authority; and
- (c) any other function incidental or ancillary thereto.



3.3 The Licensee is not authorized to perform any other activity that may require a separate licence or registration under the Act or act as agent of DISCOs subject to the provisions of Article 27 of this Licence.

3.4 The Licensee shall be an independent, not-for-profit organization and shall not have any conflict of interest in the competitive electric power market.

3.5 The Licensee shall be guided in organization, development, operation, and administration of the competitive electric power market by the CTBCM for the time being. However, as the regulatory framework evolves, the market operator shall perform its functions in accordance with the prevailing regulatory framework.

Article 4

Effective Date and Term of the Licence

This Licence shall come into force on the Effective Date and shall be valid for a term of twenty (20) years, subject to compliance of the Licensee with the Act, rules and regulations, terms and conditions of this Licence, and other Applicable Documents, and payment of annual fee and other charges as specified in the Applicable Documents from time to time.

Article 5

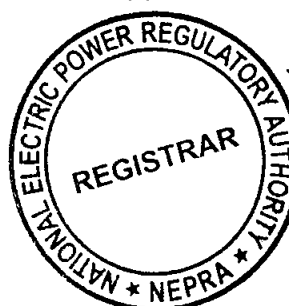
Renewal of Licence

5.1 If the Licensee intends to renew the term of this Licence at expiry of the term, it shall submit to the Authority an application for renewal of its Licence at least twelve (12) months prior to the expiry of the current term.

5.2 The application for renewal of Licence shall be accompanied with such documents, information and evidence as may be required under the Act or Applicable Documents.

5.3 In the event the Authority decides to grant an application for renewal of Licence, the Authority may renew the Licence on such revised terms and conditions as the Authority deems appropriate in accordance with the Act at the time of renewal of the Licence.

5.4 The Authority may grant or refuse an application for renewal of Licence after recording reasons in writing therefor.



Article 6

Annual Licence Fee

The Licensee shall pay to the Authority the annual fee in the amount and manner provided in the National Electric Power Regulatory Authority (Fees) Regulations, 2021 as amended from time to time.

Article 7

Modification of Licence

7.1 The Licensee may, at any time during the term of the Licence, communicate to the Authority a Licensee Proposed Modification in accordance with Section 26 of the Act and Regulation 10 of the Licensing Regulations.

7.2 The Authority may, at any time during the term of the Licence, communicate to the Licensee an Authority Proposed Modification or a Modification by Operation of Law in accordance with Regulation 11 of the Licensing Regulations.

Article 8

Transfer and Assignment of Licence

The Licensee shall not, without prior written approval of the Authority, surrender, assign or transfer its licence to any other person.

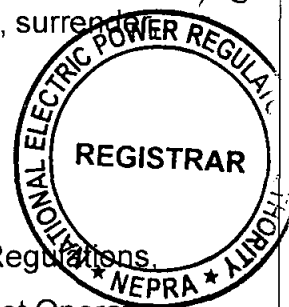
Article 9

General Obligations

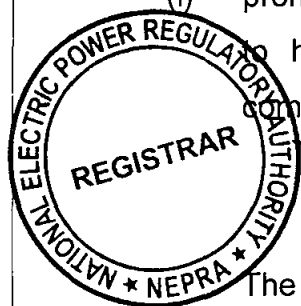
9.1 The Licensee shall comply with the Act, rules, the Market Operator Regulations, and other Applicable Documents, particularly with Regulation 8 of the Market Operator Regulations, as may be amended from time to time.

9.2 In order for the Licensee to perform its functions and meet its general obligations, the Licensee shall ensure that it:

- (a) procures or develops, and deploys a comprehensive market management system to be used by the Licensee to perform market operations in a transparent, efficient and effective manner in line with the relevant best practices and any directions of the Authority;
- (b) regularly updates its market management system to meet the latest or expected developments in the competitive electric power market;
- (c) opens separate bank accounts in accordance with the Market Commercial Code requirements;



- (d) issues standing instructions to its bankers for seamless settlements;
- (e) regularly updates the Market Commercial Code in accordance with the review procedures provided in the Market Commercial Code;
- (f) pays all fees, fines or other dues to the Authority in a timely manner;
- (g) complies with the Act, rules and regulations, Market Commercial Code and other Applicable Documents as may be amended from time to time and applicable to the Licensee and instructions issued by the Authority;
- (h) provides any information required by the Authority in a timely manner while ensuring that the information is correct and up to date;
- (i) organize, develop, operate and administer the competitive electric power market in accordance with the Act, rules, regulations, the Market Commercial Code and other Applicable Documents;
- (j) until such time the agency function and Market Operator functions are separated in two distinct legal entities, any correspondence with the Authority on behalf of the Licensee is made by a suitable senior officer dealing with Market Operations;
- (k) ensures that its Chief Executive Office and other relevant officers appropriately attend any hearing or meeting of the Authority if so required by the Authority;
- (l) promptly informs the Authority of any force majeure or other event that is likely to have an adverse impact on overall market operations or Licensee's compliance with the Licence terms and conditions.



Article 10

Eligibility Criteria

The Licensee shall, at all times, ensure that it is in compliance with the eligibility criteria rules prescribed under Section 23A of the Act, as may be revised by the Federal Government from time to time.

Article 11

Obligations with Respect to Competitive Electric Power Market

11.1 The Licensee shall facilitate the development of liquid and efficient competitive electric power market and shall submit to the Authority any proposals in furtherance of this objective.

11.2 The Licensee shall not engage in any activity that may disrupt or impede competition in the market that may impair its function as an independent and impartial Market Operator.

Article 12

Market Operator Functions

The Licensee shall perform such functions which are provided in the Act, Market Operator Regulations and approved by the Authority in the Market Commercial Code, *inter alia*, enrollment of Market Participants and Service Providers, registration of contracts, issuance of settlement statements, settlement of imbalances, determination of capacity obligations, issuance of firm capacity certificates, determination and obtaining of security covers, devising of dispute resolution mechanism, enforcement of the Market Commercial Code, training and capacity building of relevant stakeholders, and further development of the market.

Article 13

Non-Discrimination

The Licensee shall perform the market operator functions reliably, transparently, objectively, independently and in a non-discriminatory, fair, and unbiased manner. The Licensee shall not discriminate between market participants, whether prospective or incumbent and whether sponsored privately or by the Federal or Provincial Governments of Pakistan.

Article 14

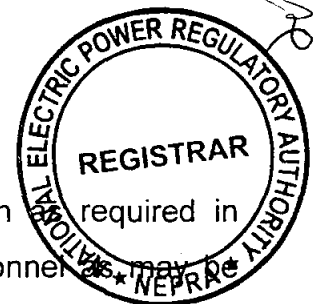
Availability of Resources

14.1 The Licensee shall, while maintaining functional separation required in Article 27 of this Licence, employ such number of qualified personnel as may be prudent to ensure that its activities are conducted effectively, efficiently, reliably, and prudently.

14.2 The Licensee shall ensure that, at all times, it possesses the relevant technical and financial capability and human resources in compliance with the relevant rules or regulations to perform its activities effectively, efficiently, reliably, and prudently.

14.3 During the term of this Licence, the Licensee shall:

- (a) ensure that it operates the market in accordance with the Market Commercial Code;
- (b) establish an efficient system of collecting, organizing and processing the data



sent by the System Operator, Service Providers and Market Participants;

- (c) establish and operate an IT based market management system to perform Market Operations, particularly, enrolment of market participants, contract registration, settlement of Balancing Mechanism for Energy and Capacity and other related functions; and
- (d) facilitate the Market Participants and Service Providers in performance of their functions in accordance with the Market Commercial Code.

14.4 The Licensee shall maintain adequate in-house capacity for training and capacity building of Market Participants, Service Providers and other relevant stakeholders on Market Operations and further market development.

Article 15

Provision of Information

15.1 The Licensee shall publish all information that is necessary for operations of the competitive electric power market on its website in order for it to be easily available to the general public to understand the market operations and procedures for becoming a market participant.

15.2 The Licensee shall keep confidential information of market participants through a combination of appropriate controls, security, transparency, and consent mechanisms relating to the collection and use of their personal data.

15.4 The Licensee shall furnish to the Authority such information, documentation, or data, in such manner, form, and time, as the Authority may require from time to time.

15.5 The Licensee shall submit progress reports to the Authority on the status of activities being undertaken and, where required by the Authority and applicable law, publish the required reports in an appropriate manner.

15.6 The Licensee shall submit an annual market report to the Authority within one (01) month of the close of the financial year in accordance with Regulation 9 of the Market Operator Regulations and shall also make the same available on its website.

15.7 The Licensee shall make available its audit reports and financial statements on its website in a timely manner.

Article 16

Commercial Obligations



During the term of this Licence, the Licensee shall:

- (a) establish processes ensuring adherence to the Market Operator Regulations, Market Commercial Code and other Applicable Documents;
- (b) manage the processes of settlement of transactions in accordance with the Market Commercial Code;
- (c) keep or cause to be kept separate accounts for the distinct Market Operator functions; and
- (d) submit to the Authority, as and when directed, correct and reliable information regarding imbalances, settlements, prices, number of market participants, percentages of market share, forecasted prices and statistics.

Article 17

Compliance with Codes, Standards and Market Operator Regulations

17.1 The Licensee shall comply with all applicable codes, guidelines, directions, and performance standards issued by the Authority from time to time.

17.2 The Licensee shall provide to the Authority, for its review, yearly reports relating to compliance with the terms and conditions of this Licence.

17.3 The Licensee shall be under an obligation to follow and comply with the Market Operator Regulations in letter and spirit. All provisions of the Market Operator Regulations are hereby incorporated by reference in the terms and conditions of this Licence.

Article 18

Fines and Penalties

18.1 Without prejudice and in addition to the powers of the Authority under the Act, and rules and regulations made thereunder, where the Authority determines that the Licensee is in violation of any applicable law or the terms and conditions of this Licence, the Authority may:

- (a) investigate the violation as per Section 27A of the Act;
- (b) order the Licensee to:
 - (i) cease a specific activity; or
 - (ii) direct its external auditor to report directly to the Authority;



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- (c) appoint and engage an external auditor to review the operations and compliance of the Licensee with applicable laws and this Licence;
- (d) appoint an administrator to take over the operations of the Market Operator for such time or until such event as the Authority may approve; or
- (e) increase the reporting requirements of the Licensee on any matter related to its technical and financial performance or related to service quality.

18.2 Any contravention or non-compliance on the part of the Licensee or any of its officers with respect to this Licence, or the terms and conditions and time limits prescribed herein, shall constitute grounds for initiating penal action by the Authority.

18.3 Any instrument, document, contract or agreement, or any part thereof, may be declared void if executed in contravention or non-compliance of this Licence, the provisions of the Act, the rules and regulations made thereunder, or the Market Commercial Code.

Article 19

Settlement of Disputes

Any dispute arising out of or in relation to this Licence or Market Operations or the activities performed by the Licensee in pursuance of this Licence, or the Market Operator Regulations shall be settled in accordance with Regulation 20 of the Market Operator Regulations.

Article 20

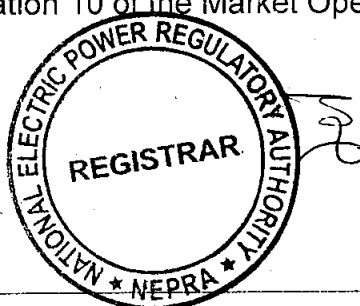
Prohibition against Anti-Competitive Practices

The Licensee shall not engage in any anti-competitive practices which are contrary to free and fair competition as required under Regulation 16 of the Market Operator Regulations and other applicable laws including the Competition Act, 2010. The Licensee is also required to follow and implement Corporate Governance Rules and submit an annual report in this respect to the Authority.

Article 21

Duty to Maintain Confidentiality

The Licensee shall maintain confidentiality of its Market Participants in accordance with Regulation 10 of the Market Operator Regulations.



Article 22

Maintenance of Record

22.1 The Licensee shall keep complete and accurate record and other data in respect of all aspects of the Market Operations in accordance with Regulation 15 of the Market Operator Regulations.

22.2 All record, and data maintained in an electronic form shall, subject to just claims of confidentiality, be accessible by staff authorized by the Authority.

22.3 The Authority may, upon forty-eight (48) hours prior notice in writing to the Market Operator, enter any premises of the Market Operator where any of its records or data are kept, for examination or taking copy thereof during office hours.

Article 23

Communication

23.1 The Licensee shall designate a senior officer that shall act as a primary contact with the Authority on the matters related to this Licence. The Licensee shall promptly notify the Authority, of any change in the designated contact.

23.2 All communication with the Authority must be carried out in writing that shall include designated electronic sources.

Article 24

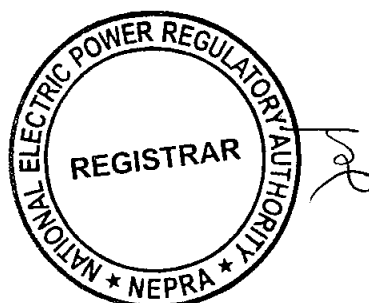
Economic Purchasing of Services and Assets

The Licensee shall ensure that the procurement of assets is undertaken in the most economical manner and in accordance with the applicable laws of the Federal and Provincial government or agency as the case may be.

Article 25

IT Infrastructure

The Licensee shall develop a robust IT strategy outlining the planning and execution roadmap for ensuring transparency, effectiveness, efficiency, and security in all Market Operations.



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Article 26

Effective Coordination

The Licensee shall ensure prompt and effective coordination with the Service Providers, Market Participants, and other relevant stakeholders to comply with the relevant provisions of the applicable laws.

Article 27

Functional and Legal Separation

27.1 The Licensee shall, at the earliest but not later than twelve (12) months from date of grant of this Licence, separate its functions, as market operator from its existing role as an agent of the DISCOs, in two distinct legal entities and apply to the Authority for transfer of this Licence. In the event, these two functions are not separated in two distinct legal entities as stated above, the same shall be treated as a persistent contravention of the terms and conditions of the Licence and the Authority may initiate legal proceedings against the Licensee accordingly, and also issue such directions as may be deemed appropriate that may include appointment of an administrator in respect of the market operator functions of the Licensee.

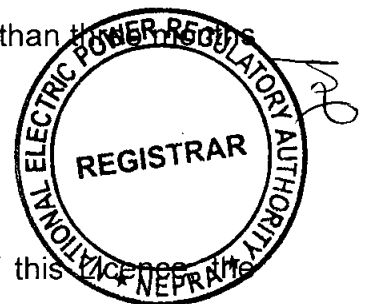
27.2 Until such time the functions of the Licensee as agent of the DISCOs and Market Operator are not separated in two distinct legal entities, the Licensee shall ensure that its business is operated in such a manner that the management responsible for Market Operations and accounting thereof is segregated from the CPPA-G's role as agent of the DISCOs so that the Market Operations are carried out independently, transparently, and impartially. This segregation of two functions of the Licensee shall be ensured at the earliest but in any event not later than twelve (12) months from the date of grant of Licence.

Article 28

Readiness for Market Operations

28.1 For a period of six (06) months from the date of grant of this Licence, the Licensee shall carry out test run of all activities provided in the Market Commercial Code in order to check effectiveness and adequacy of the Market Commercial Code and readiness of all the systems and processes for implementation of competitive electric power market in collaboration with the other stakeholders and licensees.

28.2 During the period of six (06) months from the date of grant of this Licence, the Licensee shall submit monthly progress reports to the Authority. Within seven (07)



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days from completion of six (06) months period, the Licensee shall submit a comprehensive final test-run report in consultation with the relevant stakeholders and other licensees with regard to the test run results of the competitive electric power market and any changes that may be required in the relevant systems and Market Commercial Code or other documents.

28.3 In its final test-run report, the Licensee shall highlight any issues observed during this period along with suitable recommendation for addressing these issues and may also propose any interventions required including amendments in the Market Commercial Code (if any) that in its view may be necessary for ensuring sustainable operation and development of an efficient and liquid electric power market.

28.4 After considering the final test-run report, the Authority may take such steps as may be deemed necessary including any changes in the Market Commercial Code or any other applicable documents.

28.5 The Authority upon being satisfied with regard to readiness of the Licensee and associated systems, authorize the Licensee to start competitive market operations including actual market transactions from such date as deemed appropriate by the Authority. Provided that the competitive market operations date shall not precede the date on which Sections 23A and 23B of the Act come into force.

Article 29

Market Operation Fee and Revenue Requirements

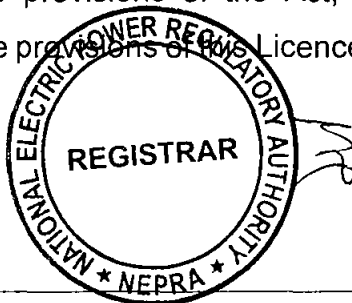
29.1 The Licensee shall charge the Market Participants and Service Providers only such fees and tariff which has been approved by the Authority.

29.2 Within ninety (90) days of this Licence becoming effective, the Licensee shall submit to the Authority a petition for determination of its tariff and revenue requirement under the Applicable Documents. The revenue requirement of the Licensee may be determined by the Authority periodically on an annual or multi-year basis as deemed appropriate.

Article 30

Interpretation of the Licence Provisions

30.1 In accordance with the provisions of the Act, the Authority shall make the interpretation of any or all of the provisions of this Licence. The decision of the Authority in this regard shall be final.



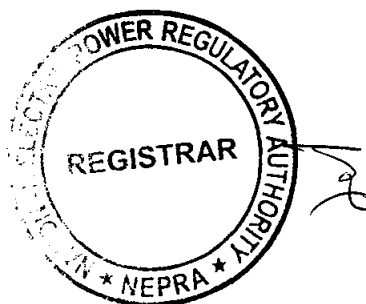
30.2 Where any obligation under this Licence is expressed to require performance within a specified time limit, that obligation shall continue to be binding and enforceable after that time limit if the obligor fails to perform that obligation within that time limit (but without prejudice to all rights and remedies available against the obligor by reason of the obligor's failure to perform within the specified time limit).

Article 31

Suspension or Revocation

31.1 Without prejudice to the powers of the Authority under the Act, upon being satisfied that the Licensee is not discharging its functions in accordance with the Act or Applicable Documents including terms and conditions of the Licence, or otherwise fails to carry on its business in the interests of the competitive electric power market, the Authority may, after providing an opportunity to show cause, take such measures as it deems expedient including, but not limited to, suspension or cancellation of the Licence and take such other action as may be necessary to safeguard the interests of all stakeholders.

31.2 Where the Authority revokes or suspends the Licence of the Licensee, it may appoint an administrator to take over its functions.





Market Commercial Code



Electric Power Market Operator of Pakistan

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Introduction

Pursuant to Section 23B of the Act, the Market Operator is required to prepare a Commercial Code to regulate its operations, standards of practice and business conduct of market participants and their representatives. The Commercial Code shall be submitted by the Market Operator to NEPRA for approval along with Market Operator licensing application.

The Commercial Code establishes efficient, non-discriminatory, and transparent market mechanisms centrally administered by the Market Operator including the associated settlement and payment arrangements and procedures and Security Cover. It is an essential requirement for the administration of the market. It specifies the rights and obligations of the Market Participants and Service Provider related to the market. This Code sets out the procedures among different market players to exchange information. All Market Participants and Service Providers shall sign respective agreements (Market Participation Agreement or Service Provider Agreement, as the case may be) with the Market Operator as per provisions defined in this Code and shall abide by the Commercial Code at all times to the extent this Code is applicable to them.

For a reader to understand this Code, it is important to highlight the roles of different institutions that will play their part in the CTBCM. The roles of different institutions are explained below. These roles are just summarized here for the understanding of the reader; however, each entity will perform its roles as per the provisions of the relevant rules, regulations, licenses, authorization, registration and codes.

Operators

I. Market Operator

The Market Operator is an entity responsible for establishing and administering the wholesale market and shall perform, *inter alia*, the following functions:

- a) enrolment of Market Participants and Service Providers;
- b) review of compliance of Contracts with the Commercial Code and registration of Contracts;
- c) registration of the Trading Points where commercial transactions may take place among Market Participants;
- d) registration of Metering Points, other than Trading Points, which are necessary for proper implementation of this Code;
- e) calculation of Firm Capacity of Generation Units and issuing of Firm Capacity Certificates;
- f) determination of prices for the Capacity to be used in the Balancing Mechanism for Capacity;
- g) administering a settlement system for the Capacity and Energy Balancing Mechanisms to clear differences between actual and contracted quantities;
- h) administering a payment system for the Imbalances of Market Participants and other market charges, including the verification and registration of Security Covers; and
- i) administer dispute resolution procedures in accordance to this Code.



i



The Market Operator will also be in charge to monitor market development and effectiveness and to propose changes for enhancing its efficiency. The Market Operator shall carry out all its activities in accordance with the provisions of the Act, rules, regulations, its License, this Code and any other applicable legal instruments.

2. SYSTEM OPERATOR

The System Operator is an entity responsible for planning, dispatch and secure & reliable operation of the Transmission and relevant segment of Distribution Network as specified in the Grid Code. The duties of the System Operator shall, *inter alia*, include:

- a) Generation scheduling, unit commitment and dispatch;
- b) Transmission scheduling and generation outage coordination including cross border Transmission coordination;
- c) conducting reliable short and medium term operational planning;
- d) implementing the Security Constrained Economic Dispatch (SCED) for secure and economic operation of the system including Transmission Congestion management;
- e) scheduling and dispatching the necessary Ancillary Services;
- f) calculation of System Marginal Prices for each hour;
- g) keeping the system in permanent balance by considering the security and reliability constraints;
- h) responsible for system planning for long term capacity; and
- i) such other activities as may be required for reliable and efficient system operations.

The System Operator will perform its duties in accordance with the provisions of the Act, rules, regulations, License, the Grid Code, this Code and any other applicable legal instruments. To ensure transparency in its operations, the System Operator will publish planning reports, real time operational decisions, the results of the dispatch on its website.

Market Participants

The Market Participants shall be the entities which buy and/or sell Energy and/or Capacity in the wholesale market. Following Categories of Market Participants shall be entitled to participate in the CTBCM:

- a) Generation Companies
- b) Captive Generators connecting to the national grid
- c) Electric Power Suppliers.
- d) Electric Power Traders.
- e) Bulk Power Consumers.

I. Generation Companies

A Generation Company shall be an entity which has installed a Generation Unit or a Generation Plant and is engaged in production and selling of electric power. To participate in the CTBCM, a Generator shall abide by the following requirements:

- a) A Generation Plant or a Generation Unit which has been classified as Dispatchable Generation Unit shall be operated in accordance with the centralized Security Constrained Economic Dispatch (SCED).
- b) A Generation Plant or a Generation Unit which has been classified as Non-Dispatchable Generation Unit shall be operated in accordance with the conditions, requirements and procedures specified in the Grid Code.
- c) Within its technical capabilities, it shall provide the Ancillary Services required by the System Operator, as specified in the Grid Code.
- d) It shall enrol as a Market Participant if it sells or plans to sell the Energy and/or Capacity to other Market Participants through a Bilateral Contract and/or Balancing Mechanism of Energy and Capacity. However, it is clarified that a small Generator, connected to a Distribution Network at the distribution voltage which does not fall in the scope of the Grid Code, and sells all its Capacity and Energy to a Supplier of Last Resort or an Electric Power Trader, shall not be required to become a Market Participant.
- e) A Generator may sell all of its Energy and/or Capacity through the Balancing Mechanisms as a merchant plant without registering any Bilateral Contract with the Market Operator.

2. Electric Power Suppliers

In the CTBCM, there shall be two types of Electric Power Suppliers Licensed by the Authority namely the Competitive Supplier and the Supplier of Last Resort. An Electric Power Supplier (EPS) shall be a Licensed entity as stipulated under the Act, which may involve in the procurement of electric power (Energy and Capacity) and sell it to the end consumers or re-selling it to other Market Participants as specified in the NEPRA regulations.

As Market Participant, the licensed Electric Power Supplier shall register its Contracts (with other Market Participants or BPCs) with the Market Operator as specified in Chapter 4 of this Code, provided that the Supplier of Last Resort shall not be required to register with the Market Operator its Contracts with its consumers.

3. Electric Power Trader

An Electric Power Trader shall be a Licensed entity which may carry out the functions of trading of electric power in accordance with the provisions of the relevant regulations, its Licence and other applicable documents: An Electric Power Trader may perform any or all of the following functions subject to the terms & conditions of its Licence:

- a) Import of electric power (Energy and/or Capacity);
- b) purchase of the electric power from a Generator or an Electric Power Trader or an Electric Power Supplier;
- c) sale of electric power to an Electric Power Trader or an Electric Power Supplier;
- d) Export of the electric power.

An Electric Power Trader may enter into an agreement with one or more Generators, which may or may not be Market Participants, and sell the aggregated Generation in the CTBCM through Bilateral Contracts. For Imports and/or Exports, the seller or buyer, as the case may be, will be exempted from enrolment as a Market Participant. The Market Participant that carries out Imports or Exports will represent the other party in the CTBCM.

4. Bulk Power Consumers

A Bulk Power Consumer (BPC) is a consumer who may buy electric power, Energy and/or Capacity, from the wholesale market or from an Electric Power Supplier of its choice through a Bilateral Contract as per the applicable NEPRA regulations.

A Bulk Power Consumer may be exempted from enrolling as a Market Participant in case it decides to buy both its Energy and Capacity from the relevant Supplier of Last Resort/DISCO or it decides to sign a Standardized Load Following Supply Contract with a Competitive Electric Power Supplier, as per the conditions stipulated in this Code.

Service Providers

1. Transmission Service Providers

All Transmission Service Providers shall be enrolled with the Market Operator as Service Providers. A Transmission Service Provider (TSP) shall be responsible for providing the non-discriminatory Transmission services to enable wholesale buying and selling of electric power (Energy and/or Capacity). TSPs shall include NTDC, which is the largest TSP and Licensed as national grid company by the Authority, the Transmission License activity of K-Electric, Licensed Provincial Grid Companies (PGCs) and Special Purpose Transmission Licensees (SPTLs).

Consistent with the Act, its license conditions and NEPRA regulations, a Transmission Service Provider shall provide Open Access to the Market Participants subject to payment of use of system charges determined by the Authority and signing use of system Agreements. Additionally, the TSP shall sign Connection Agreements with Generation Companies, Captive Generators, Distribution Licensees, network companies from foreign countries or territories where the applicability of the Act is not extended, and BPCs connected directly to transmission that will cover providing access to the Meters and metering values to an authorised Metering Service Provider in order to enable it to comply with its obligations.

2. Distribution Network Service Providers

All Distribution Network Service Providers shall be enrolled with the Market Operator as Service Providers. A Distribution Network Service Provider shall be a Licensed entity as defined in the Act which is required to develop and operate the Distribution Network infrastructure to enable the Generators and/ or BPCs connected to such network to participate in the wholesale market.

Consistent with the Act, the condition of its License and NEPRA regulations, a Distribution Network Service Provider shall provide Open Access to its network to enable buying and selling of electric power among Market Participants subject to payment of use of system charges determined by the Authority and signing Use of System Agreements as required in the NEPRA regulations. For information of Market Participants in relation to their market decisions, a Distribution Network Service Provider shall also publish on its website information related to the network availability and its future expansion plans.

3. Metering Service Providers

All Metering Service Providers shall be enrolled with the Market Operator as Service Providers. Metering Service Provider (MSP), in addition to the metering conditions established in the Grid Code and Distribution Code, shall be an entity, responsible:

- a) to collect all metering information required under this Code and its operational procedures, for the the Market Operator to perform the settlement functions;
- b) to assess the completeness and consistency of the metering information; and
- c) to transfer the metering information to the Market Operator through electronic means, at such intervals as stipulated in the relevant operational procedures.

4. The Independent Auction Administrator

The Independent Auction Administrator (IAA) shall be an entity registered with the Authority which shall perform the function of facilitating the electric power suppliers, in accordance with the applicable power procurement regulations of NEPRA, through the procurement of new Capacity and/or Energy or existing uncontracted Capacity and/or Energy through Contracts. The IAA will act independently from commercial interest during administration of the auction process.

5. The Special Purpose Agent (CPPA-G)

Prior to CMOD, the CPPA-G was registered by the Authority as the Market Operator under the Market Rules 2015 and performed the functions of the agent of Distribution Licensees (Ex-WAPDA DISCOs and KE in their role as Suppliers of Last Resort) for procuring electric power on their behalf and administers the Legacy Contracts and to perform the role of market development. The Special Purpose Agent is the name assigned to the role of CPPA-G only related to the administration of the Legacy Contracts after CMOD as CPPA-G will no longer be allowed to sign other contracts on behalf of Ex-WAPDA DISCOs and KE in their role as Suppliers of Last Resort. For this role, the CPPA-G is registered by the Authority as Special Purpose Agent under section 25A of the Act. For the clarity of the reader, the term Special Purpose Trader as used in different documents has been renamed as Special Purpose Agent to avoid the confusion between a licensed Trader and this agency function which will be registered with Authority.



Table of Contents

CHAPTER 1. GENERAL CONDITIONS	9
1.1. Objectives and Scope	9
1.2. Interpretation.....	10
1.3. Amendments to this Code.....	23
CHAPTER 2. ENROLMENT OF MARKET PARTICIPANTS AND SERVICE PROVIDERS	30
2.1. Market Participant Eligibility Requirements for Enrolment	30
2.2. Rights and Obligations of the Market Participants.....	31
2.3. Procedures to become Market Participant.....	32
2.4. Market Participant Enrolment	34
2.5. Withdrawal or Termination Of Enrolment of a Market Participant.....	35
2.6. Enrolment of Service Providers	36
2.7. Rights and Obligations of the Service Providers	36
2.8. Procedure to enrol as a Service Provider	36
2.9. Withdrawal or Termination Of Enrolment as a Service Provider	38
2.10. Enrolment of Other Persons	39
2.11. Enrolment Fee	40
CHAPTER 3. CONTRACTS AND CONTRACT REGISTRATION	41
3.1. Contract Market	41
3.2. Contract Formats	41
3.3. Characteristics of Standardized Contracts	43
3.4. Customized Contracts	47
3.5. Contract Registration.....	49
3.6. Contracts Deregistration or Suspension	53
3.7. Commercial Allocation of Legacy Contracts.....	56
CHAPTER 4. COMMERCIAL METERING SYSTEM	58
4.1. Commercial Metering Requirements.....	58
4.2. Meter Reading and Data Collection.....	59
4.3. Meter Reading Verifications	61
4.4. Storage And Custody Of Commercial Metering Data.....	62
4.5. Commercial Metering Report	63
CHAPTER 5. BALANCING MECHANISM FOR ENERGY	64
5.1. Balancing Mechanism for Energy	64
5.2. Consideration of Distribution Losses.....	64

5.3. Consideration of the Transmission Losses.....	66
5.4. Determination of the Imbalance Amounts.....	70
5.5. Determination of the Applicable System Marginal Price.....	71
5.6. Determination of the amounts receivable and amounts payable.....	71
5.7. Applicable Taxes.....	72
5.8. Publications of BME Results.....	72
CHAPTER 6. ADDITIONAL MARKET CHARGES (ANCILLARY SERVICE CHARGES (ASC), MUST RUN GENERATION AND OPERATORS FEE)	73
6.1. Purpose.....	73
6.2. Must Run Generation	73
6.3. Ancillary Services.....	75
6.4. Compensation for Provision of Ancillary Services	76
6.5. Determination of the Amounts Receivable and Payable for ASC and Must Run Generation.....	80
6.6. Operators Fee	86
6.7. Applicable Taxes.....	87
CHAPTER 7. MONTHLY SETTLEMENT (MARKET PARTICIPANTS AND SERVICE PROVIDERS)	88
7.1. Purpose.....	88
7.2. Market Settlement System.....	88
7.3. Settlement Statements.....	89
7.4. Debit and Credit Notifications	91
CHAPTER 8. FIRM CAPACITY CERTIFICATION	93
8.1. Purpose.....	93
8.2. Procedure for Firm Capacity Certification	93
8.3. issuance of Firm Capacity Certificates	93
8.4. Determination of Initial Firm Capacity	96
8.5. Review of Firm Capacity Certificates	98
CHAPTER 9. BALANCING MECHANISM FOR CAPACITY.....	102
9.1. Introduction.....	102
9.2. Procedure for administration of the Balancing Mechanism for Capacity	103
9.3. Determination of the Preliminary Receivable and Payable amounts.....	113
9.4. Applicable Taxes.....	114
9.5. Intimation to the Market Participants.....	114
9.6. Execution of the Balancing Mechanism for Capacity	115
9.7. Actions after Execution of the BMC	116
CHAPTER 10. COMPLIANCE WITH EX-ANTE CAPACITY OBLIGATIONS.....	119

10.1. Purpose	119
10.2. Capacity Obligations of market participants	119
10.3. Demand forecasts	119
10.4. Capacity Obligations	122
10.5. Ex-Ante Verification of Capacity Obligations (current and subsequent years).....	124
10.6. Dissemination of the Results and Actions in Case of Non-Compliance	127
CHAPTER 11. YEARLY SETTLEMENT STATEMENTS (FOR BMC AND EXCESS LOSSES)	128
11.1. Yearly Settlement.....	128
11.2. Charges and Compensations for Excess Losses of a TSP	128
11.3. Applicable Taxes.....	132
11.4. Settlement Statements	132
11.5. Debit and Credit Notifications	134
CHAPTER 12. PAYMENT SYSTEM	136
12.1. Components of the Payment System	136
12.2. Market Operator Payments Calendar	140
12.3. Payment Procedures	141
CHAPTER 13. GUARANTEES AND SECURITY COVERS	145
13.1. Requirements for Providing Guarantees and Security Covers	145
13.2. Security Cover for Monthly Settlements	147
13.3. Security Cover for the BMC	149
13.4. Security Covers Associated with Excess Losses	149
13.5. Utilization / Cancellation of the Security covers	150
CHAPTER 14. SETTLEMENT OF DISPUTES	153
14.1. Application	153
14.2. Continuing Obligations and Stay of Orders	153
14.3. Procedure for Settlement of a Dispute	154
CHAPTER 15. MARKET DEVELOPMENT AND ASSESSMENT	157
15.1. Market Development and Evolution	157
15.2. Market Assessments.....	158
CHAPTER 16. ENFORCEMENT OF COMMERCIAL CODE.....	161
16.1. Compliance and Breaches.....	161
16.2. Suspension and Termination Orders.....	162
16.3. Non-compliance	168
CHAPTER 17. DISCLOSURE, ACCESS AND CONFIDENTIALITY	172
17.1. Maintenance of Records	172

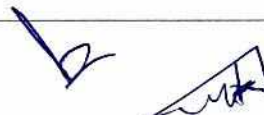


17.2. Information Disclosure.....	172
17.3. Access to the information.....	173
CHAPTER 18. MISCELLANEOUS, COMPLEMENTARY AND TRANSITORY PROVISIONS	176
18.1. Supplementary Provisions	176
18.2. Transitory Provisions	176
CHAPTER 19. APPENDICES.....	183
19.1. Appendix 1. Methodology for Determination of System Marginal Prices and Ancillary Service Charges	183



List of Figures

Figure 1: Demand and Supply Curves for the Capacity Balancing Mechanism.....	111
Figure 2: Example of Variable Generation Cost List	185
Figure 3: System Marginal Price based on the Variable Generation Cost List.....	186
Figure 4: Generation Units Eligible to Receive Compensations for ASC.....	187



List of Tables

Table 1: Equivalent Availability Factors.....	97
Table 2: Initial Security Cover amount of EX-WAPDA DISCOs.....	146
Table 3: Remedial Actions	169
Table 4: Capacity Obligations for Suppliers of Last Resort	178
Table 5: Capacity Obligations for Competitive Electric Power Suppliers.....	179
Table 6: Capacity Obligations for BPC	179
Table 7: Capacity Obligations for Traders involved in Firm Exports	180
Table 8: Suppliers of Last Resort Allocation Factors	180

Acronyms

ARE	Alternative and Renewable Energy
ASC	Ancillary Services Charges
BMC	Balancing mechanism for Capacity
BME	Balancing mechanism for Energy
BPC	Bulk Power Consumer
CCOP	Commercial Code Operating Procedure
CCRP	Commercial Code Review Panel
CCWG	Commercial Code Working Group
CMOD	Competitive Market Operation Date
COD	Commercial operation date
CPPA-G	Central Power Purchasing Agency (Guarantee) Limited
CTBCM	Competitive Trading Bilateral Contract Market (competitive wholesale electricity market of Pakistan)
DISCOs	Distribution Companies
EPA	Energy Purchase Agreement
IAA	Independent Auction Administrator
IGCEP	Indicative Generation Expansion Capacity Plan
KE	K-Electric, formerly known as KESC.
MO	Market Operator
NEPRA	National Electric Power Regulatory Authority
NTDC	National Transmission and Dispatch Company
PPA	Power Purchase Agreement
PPAA	Power Purchase Agency Agreement
SCADA	Supervisory Control and Data Acquisition
SCED	Security Constrained Economic Dispatch
TSP	Transmission Service Provider
WAPDA	Water and Power Development Authority



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Commercial Code

Chapter I. GENERAL CONDITIONS

I.1. OBJECTIVES AND SCOPE

I.1.1. TITLE

I.1.1.1. This code shall be called the Commercial Code (the “Code”).

I.1.2. OBJECTIVES

I.1.2.1. The general objectives of the Commercial Code are:

- a) to establish, govern and promote efficient, non-discriminatory and transparent market mechanisms centrally administered by the Market Operator, including the associated Settlement and payment arrangements, procedures and Security Cover;
- b) to govern the terms and conditions to participate in the Market, and the buying and selling of electric power among Market Participants and other Market Transactions after the CMOD, promoting the development of competition;
- c) to set out the rights and responsibilities of Market Participants in relation to buying and selling of electric power, settlement and payments of Imbalances and settlement of other service charges;
- d) to set out the rights and responsibilities of the Service Providers with respect to provision of metering service and other allied functions related to the market;
- e) to provide the rights and responsibilities of the Market Operator as well as the market related functions of the System Operator;
- f) to provide coordination mechanisms between the Market Operator, the System Operator and other Service Providers in performing their function related to the market;
- g) to ensure adequate information dissemination for protection of transparency in the Market; and
- h) to promote and enable the development of competitive power market in Pakistan in accordance with the Act, the rules and regulations made thereunder and the approved market design .

I.1.3. APPLICABILITY

I.1.3.1. This Commercial Code shall be applicable from the date of its approval by the Authority except for Market Transactions. On the date of CMOD, the whole Code shall be applicable.

This Code shall be binding on the Market Operator and all Market Participants and Service Provider to the extent it is applicable to them.



1.1.4. SCOPE

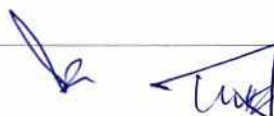
- 1.1.4.1. The Commercial Code establishes the procedures and conditions for the Market Operator for administration of the Market, the framework for Market Participants to buy and sell Energy and/or Capacity and conditions for provision of market services by Service Providers.

1.2. INTERPRETATION

1.2.1. DEFINITIONS

- 1.2.1.1. Capitalised words and expressions used in this Code, unless the context otherwise requires, shall have the following meaning:

1. **"Act"** means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Act No. XL of 1997), as amended from time to time;
2. **"Admission Application"** means the document which an Applicant is required to submit when applying for enrolment with the Market Operator, in the form set out in the applicable CCOP;
3. **"Allocation Factor"** means a value, expressed in percentage, calculated as per provisions of National Electricity Policy, which is used to commercially allocate all Legacy Contracts to each EX-WAPDA DISCO separately. For KE, the allocation factor shall be a fixed value as per its power purchase agency agreement with the SPT, which may be revised from time to time as per the terms and conditions of the power purchase agency agreement;
4. **"Amendment"** means any change, modification or deletion of the existing provisions of this Code or the CCOPs or insertion of any new provisions in this Code or CCOPs.
5. **"Amendment Submission"** means the requests for review or amendment of this Code, submitted as per provisions of this Code;
6. **"Amounts Payable"** means the amount of money, expressed in PKR, that a Market Participant is required to pay in order to discharge its obligations as per the Settlement Statements issued by the Market Operator;
7. **"Amounts Receivable"** means the amount of money, expressed in PKR, that a Market Participant is entitled to receive, as per the Settlement Statements issued by the Market Operator;
8. **"Ancillary Services"** has the meaning assigned to the term in the Grid Code;
9. **"Annual Loss Percentage"** shall have the meaning assigned to the term in Clause 11.2.4.1.
10. **"Applicable Law"** means the relevant laws of Pakistan including federal, provincial and local laws;
11. **"Applicant"** means any person who has filed an application to enrol with the Market Operator in accordance with the provisions of Chapter 2;
12. **"Adjudication Tribunal"** means a tribunal established by the Authority for resolution of disputes under the Commercial Code;
13. **"Adjudicator"** means a member of the Adjudication Tribunal to adjudicate a Dispute;
14. **"ARE Producer"** means a Generator which produces electric power through renewable resources;
15. **"Authority"** means the National Electric Power Regulatory Authority established under Section 3 of the Act;



16. **"Available Capacity"** means the share of the Installed Net Capacity, which is available for dispatch by the System Operator at any specific period of time;
17. **"Availability Declaration"** has the same meaning assigned to the term in the Grid Code;
18. **"Back-feed Energy"** means the Energy consumed by a Generation Plant or Generation Unit, while the Generation Plant or Generation Unit is not available or not dispatched;
19. **"Back-up Meter"** means a meter installed at the Metering Point for checking or backup purposes as prescribed in the Grid Code;
20. **"Balancing Mechanism for Energy"** means the mechanism, centrally administered by the Market Operator, to settle the Imbalances between the metered quantities that measure the real time Energy injected into or extracted from the Transmission or Distribution Network for each Market Participant and the contracted quantities registered with the Market Operator of each Market Participant;
21. **"Balancing Mechanism for Capacity"** means the mechanism, centrally administered by the Market Operator, to settle the Imbalances as defined in Clause 1.2.1.1 110.a.;
22. **"Balancing Period"** means the period for which the Market Operator determines whether a Market Participant had Imbalances, either in Energy or in Capacity, as the case may be;
23. **"Bilateral Contract"** or **"Contract"** means an agreement, executed in accordance with the provisions of this Code, between two parties for the sale and purchase of a defined amount of Energy and/or Capacity for each Energy Settlement Period or Capacity Settlement Period, as the case may be;
24. **"Bulk-Power Consumer (BPC)"** shall have the meaning assigned to the term in the Act;
25. **"Business Day"** has the meaning assigned to the term in Clause 1.2.4.1;
26. **"Capacity"** or **"Electric Capacity"** means ability to produce electrical energy (expressed in terms of Watts or its standard multiples) that Generators offer to the market as a product and it is acquired by Market Participants to comply with their Capacity Obligations in order to guarantee appropriate security of supply in Pakistan;
27. **"Capacity Balance"** shall have the meaning assigned to the term in Clause 9.2.5.1;
28. **"Capacity and Associated Energy Supply Contract"** shall have the meaning assigned to the term in Section 3.3.2;
29. **"Capacity Obligations"** shall have the meaning assigned to the term in Chapter 10;
30. **"Capacity Requirement"** is the requirement of a Market Participant based on average drawl from the Grid during the Critical Hours gross up by the Reserve Margin calculated as per Sub-Section 9.2.4.
31. **"Captive Generation"** shall have the meaning as assigned to this term in the Act;
32. **"Category (in relation with a Market Participant)"** shall have the meaning as assigned to the term in Clause 2.1.1.2;
33. **"Chapter"** means a chapter of this Code;
34. **"Clause"** means a clause of this Code;
35. **"Clearing Day"** means the Business Day on which the Market Operator pays to the Market Participants the amounts payable to them as per the Final Settlement Statements or Final Yearly Settlements Statements or Extraordinary Yearly Settlement Statements;

36. **"Close of Banking Business"** means [5] p.m., Pakistan Standard Time (PST) or any other time specified by the State Bank of Pakistan or the Federal Government;
37. **"Commercial Code Operational Procedure" or "CCOP"** means an operating procedure, developed by the Market Operator or the System Operator or a Service Provider, as the case may be, and approved by CCRP for proper implementation of this Code;
38. **"Commercial Code Working Group"** means a group organised by the Market Operator which consists of representatives of the Market Operator, System Operator, Market Participants and Service Providers to carry out the functions as assigned to it under this Code;
39. **"Commercial Metering System"** means the system, established according to the requirements of the Grid Code and Distribution Code, to measure the Energy injected into or withdrawn from the Transmission or Distribution Network by a Market Participant and used for settlement purposes by the Market Operator;
40. **"Company"** means a company registered under the Laws of Pakistan;
41. **"Competitive Market Operation Date" or "CMOD"** means the date set by the Authority for commencement of commercial operations of the CTBCM after coming into force of sections 23A and 23B of the Act;
42. **"Competitive Supplier"** means a person licensed under section 23E of the Act to supply electric power to only those consumers who are located in the territory specified in its licence and meet the eligibility criteria laid down by the Authority;;;
43. **"Compliance with Capacity Obligations Report"** shall have the meaning assigned to the term in Sub-Section 10.6.1 of this Code;
44. **"Condition"** means a condition of this Code;
45. **"Confidential Information"** means:
 - a) proprietary information of a person or such other information which has been explicitly specified by the disclosing person as confidential, where the disclosure of such information may reasonably be expected to:
 - a.1. prejudice significantly the competitive position of the disclosing person;
 - a.2. result in material loss or gain to the disclosing person or any other person;
 - a.3. compromise the implementation of this Code; or
 - a.4. result in the disclosing person being in breach of a bona fide confidentiality agreement; and
 - b) information required by the National Electric Power Regulatory Authority Licensing (Market Operator) Regulations, 2022, this Code or other Applicable Laws to be kept confidential, provided that information contained in the admission application to become a Market Participant and information required to be published under this Code shall not be treated as Confidential Information;
46. **"Congested Area"** shall have the meaning assigned to the term in Sub-Section 6.2.1 of this Code;
47. **"Congested Zone"** shall have the meaning assigned to the term in Sub-Section 6.2.1 of this Code;
48. **"Congestion"** means a state of the Transmission or Distribution Network where the dispatch of Generation Units on least cost basis may result in overload of equipment or unstable voltage levels or violation of the reliability and security criteria provided in the Grid Code;

49. **"Connect"** means a form of physical link to the Transmission or Distribution Network and related terms shall be construed accordingly;
50. **"Connection Agreement"** means an agreement for the provision of network services between a Transmission Service Provider or a Distribution Network Service Provider, as the case may be, and a Market Participant or a BPC or an agreement between two network Service Providers;
51. **"Connection Point"** means a point of connection between:
- a) a Transmission or a Distribution Network and a Generation Plant or Generation Unit;
 - b) A Transmission Licensee or a Distribution Licensee and a BPC; or
 - c) A Transmission Licensee and a Distribution Licensee; or
 - d) Two Transmission Licensees or Distribution Licensees; or
 - e) A Transmission Licensee or Distribution Licensee and foreign countries or territories where the applicability of the Act is not extended; or
 - f) Two Market Participants; or
 - g) Any other point within the Transmission or Distribution Networks, which the Market or System Operator considers necessary to be metered for the proper implementation of this Code;
52. **"Contract Market"** means the Bilateral Contracts market established under this Code;
53. **"Contract Register"** means the record organized and maintained by the Market Operator for the quantity of Energy and/or Capacity bought and sold among Market Participants through Contracts;
54. **"Contract Termination Date"** means the termination date of a Bilateral Contract agreed between the parties at the time of registration of the Contract or any other date as approved by the Market Operator;
55. **"Credited Capacity"** means the Capacity allocated to a Market Participant in the Balancing Mechanism for Capacity and/or verification of its compliance with the Capacity Obligations;
56. **"Credit Notification"** means a notification issued by the Market Operator to a Market Participant immediately after issuing a Final Settlement Statement, Final Yearly Settlement Statement, Extraordinary Yearly Settlement Statement or on account of any other adjustment or payment regarding the amount it is entitled to receive through the Market Operator on the Clearing Day or any other date as specified by the Market Operator;
57. **"Critical Hours"** are such hours of the previous year when the power system was under maximum stress and as detailed in Sub-Section 9.2.1;
58. **"CTBCM" or "Competitive Trading Bilateral Contract Market"** means electric power market established in accordance with the high-level and detailed designs approved by the Authority vide its determinations dated 5th day of December, 2019 and 12th day of November, 2020 as may be amended by the Authority from time to time;;
59. **"Customized Contracts"** shall have the meaning assigned to this term in Clause 3.2.2.4;
60. **"Debit Notification"** means a notification, issued by the Market Operator to a Market Participant subsequent to issuing a Final Settlement Statement, Final Yearly Settlement Statement, Extraordinary Yearly Settlement Statement or on account of

any other adjustment or payment whereby a Market Participant is required to pay a certain amount to the Market Operator;

61. **"Default Amount"** means any amount a Market Participant has failed to pay on a Payment Due Date;
62. **"Default Interest"** means an amount payable by a Market Participant, at a rate as specified in Clause 18.2.7.1, if it fails to fulfil its payment obligations under this Code;
63. **"Demand"** means either the Energy supplied to consumers over a period of time (Energy Demand) or the electric power supplied to consumers at a particular instant (Capacity Demand);
64. **"Demand Forecast"** means an estimate of future Demand typically worked out by using mathematical forecasting techniques and historical Demand data or any other relevant information;
65. **"Designated Account"** means the existing main revenue collection account of the EX-WAPDA DISCO including any other Electric Power Supplier/ DISCO carved out of the Ex-WAPDA DISCOs in the Designated Bank;
66. **"Designated Bank"** means the bank selected jointly by the Market Operator, and the EX-WAPDA DISCO including any other Electric Power Supplier/ DISCO carved out of the Ex-WAPDA DISCOs to operate the Designated Account as per standard instruction given in Clause 12.1.4.6 and the terms and conditions of the agreement entered into for this purpose.
67. **"Dispatch"** shall have the meaning assigned to the term in the Grid Code.
68. **"Dispatch Day"** means a period in the Dispatch process from 00.00 hours to 23.59 hours in the same calendar day;
69. **"Dispatch Instruction"** means the operating instruction issued by the System Operator to a Generation Unit for its Dispatch in accordance with the provisions of the Grid Code;
70. **"Dispatch Period"** means every sixty-minute interval, or such other shorter interval as provided in the Grid Code, during a Dispatch Day;
71. **"Dispatchable Generation Unit"** means a Generation Unit which can be controlled for increasing or decreasing its production following manual or automatic instructions issued by its operator to meet varying system demand. For the avoidance of doubt, these Generation Units shall not include the variable renewable generation technologies such as wind and solar and run of river hydro based Generation Units without any significant storage;
72. **"Dispute"** means any dispute or disagreement or difference arising under this Code or any provision hereof as specified in Chapter 15;
73. **"Distribution Company" or "DISCO"** means a distribution company Licensed by the Authority to engage in the distribution of electric power
74. **"Distribution Code"** means the distribution code prepared by the Distribution Licensees and approved by the Authority;
75. **"Distribution Network"** Distribution Network means distribution and transmission facilities owned, operated, managed or controlled by a DISCO and used for the movement or delivery of electric power;
76. **"Distribution Network Connected Generation"** means a Generation Plant or Generation Unit directly connected to a Distribution Network;
77. **"Distribution Network Service Provider"** means a Distribution Licensee which provides, inter alia, Open Access;

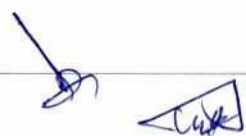
78. **“Early Contract Termination”** means the termination of a Contract with the consent of the parties on a date prior to the one recorded in the Contract Register;
79. **“Effective Date of Contract”** means the date from which the registered Contract is used in the balancing mechanisms or for verification of the Compliance with Capacity Obligations;
80. **“Electric Power Supplier”** shall include competitive supplier and supplier of last resort ;
81. **“Electric Power Trader”** means a person Licensed by the Authority under section 23C of the Act;
82. **“Electronic Local Meter Reading”** means obtaining the values of half-hourly Energy, stored in the internal memory of the Meter, by making a physical link between such Meter and a portable electronic equipment capable to download such information;
83. Distribution Network
84. **“Energy”** means electrical energy produced by Generation Plants or Generation Units, flowing through or supplied by Transmission Network or Distribution Network, measured in units of watt-hours or standard integers or multiples thereof;
85. **“Energy Limited Generation Unit”** means a Generation Unit whose capability to produce Energy is constrained by the availability of the primary energy stored;
86. **“Enrolled Person”** means a person who is enrolled with the Market Operator as per provisions of Section 2.10 of this Code.
87. **“Equivalent Availability Factor”** means the fraction of Installed Net Capacity, averaged over a calendar year, that a Generation Unit is able to provide after considering all types of outages and deratings;
88. **“Excess Losses”** means the amount of Transmission losses, expressed in kWh or multiples of kWh, which exceeds the maximum value of losses allowed by the Authority in the relevant Tariff determination;
89. **“Export”** means the selling of Energy and/or Capacity to foreign countries or such territories where the applicability of the Act is not extended;
90. **“Extraordinary Settlement Statement”** shall have the meaning assigned to the term in Sub-Section 7.3.4;
91. **“Extraordinary Yearly Settlement Statement”** shall have the meaning assigned to the term in Sub-Section 11.4.4
92. **“EX-WAPDA DISCO”** means a DISCO which has been formed as the result of unbundling of WAPDA or any subsequent unbundling of the same;
93. **“Final Settlement Statement”** shall have the meaning assigned thereto in Sub-Section 7.3.3;
94. **“Final Yearly Settlement Statement”** shall have the meaning assigned thereto in Sub-Section 11.4.3;
95. **“Firm Capacity”** means the portion of the Installed Net Capacity of a Generation Unit or Generation Plant, as the case may be, which is available to be delivered with a high degree of probability at any given time;
96. **“Firm Capacity Certificate”** means a certificate issued by the Market Operator to a Generator allowing it to sell Capacity under a Bilateral Contract up to the amount provided in the certificate;
97. **“Firm Export”** means an Export which may not be interrupted even where the total Available Capacity is less than the potential electric power demand in Pakistan;

98. **"Generate" or "Generation"** means the production of Energy at a Generation Unit or a Generation Plant and its delivery to the Transmission or Distribution Network;
99. **"Generation Company"** means a person which is issued a Generation Licence or has concurrence of the Authority to construct, own or operate a Generation facility and shall also include Captive Generation;
100. **"Generation Following Supply Contract"** shall have the meaning assigned to the term in Section 3.3.1;
101. **"Generation Plant"** means a Generation Unit or group of Generation Units, connected to the Transmission or Distribution Network at a single Connection Point;
102. **"Generation Unit"** means a conversion apparatus including auxiliaries and associated equipment, used to produce electric power from some other form of energy, which is dispatchable as an indivisible unit;
103. **"Generator"** has the same meaning as a Generation Company;
104. **"GoP"** means the Government of the Islamic Republic of Pakistan;
105. **"Grid Code"** means the grid code prepared and maintained by the System Operator pursuant to sections 23G and 23H of the Act and approved by the Authority or till the time the same is approved by the Authority, the Grid Code 2005;
106. **"Grid System"** means the Transmission and Distribution Network owned and operated by the Transmission and Distribution Licensees;
107. **"Guarantee Amount"** means an amount, determined by Market Operator, to be deposited by a Market Participant in the Market Operator Settlement Guarantee Fund Account as its contribution to the Settlement Guarantee Fund;
108. **"Guaranteed Capacity"** shall have the meaning assigned to the term in Clause 3.2.1.5;
109. **"Identification Code"** is an alphanumeric code which precisely and uniquely identifies (i) a Market Participant, or (ii) a Generation Plant or Generation Unit, or (iii) a Metering Point, as the case may be, which will be assigned:
- by the Market Operator to the Market Participants during the enrolment process;
 - by the System Operator to the Generation Plants or Generation Units according to the provisions of the Grid Code; and
 - by the Metering Service Provider to the Metering Points;
110. **"Imbalance"**
- If used in relation to Capacity, shall mean either the difference between the Capacity sold through a Contract (registered with the Market Operator) and the actual Available Capacity; or the difference between the Capacity purchased through a Contract (registered with the Market Operator) and the actual Maximum Demand in the relevant period taken from the Transmission or Distribution Network, as the case may be;
 - If used in relation to Energy, shall mean the difference between the Energy quantities bought and sold through a Contract (registered with the Market Operator) and the actual quantities injected into or withdrawn from the Transmission or Distribution Network;
111. **"Import"** means procurement of Energy and/or Capacity from foreign countries and from Generation Plants located in the territories where the applicability of the Act is not extended;

112. **"Initial Firm Capacity Certificate"** means the Firm Capacity Certificate issued by the Market Operator:
- Before CMOD, for those Generation Units which were existing prior to the CMOD;
 - At the time of commissioning, for those Generation Units which are commissioned after CMOD;
113. **"Installed Capacity"** means the amount of electric power that a Generation Unit or a Generation Plant is designed to operate on a continuous basis and determined through the commissioning, annual dependable capacity test or any other tests, specifically designed for such purpose, which are performed during the useful life of the Generation Unit or Generation Plant;
114. **"Installed Net Capacity"** means the share of the Installed Capacity which a Generation Unit or Generation Plant is able to deliver to the Transmission or Distribution Network and is calculated as the Installed Capacity minus the average consumption by the auxiliaries;
115. **"K-Electric" or "KE"** means K-Electric Limited Licensed by the Authority;
116. **"Legacy Contract"** means a PPA or EPA (including International Interconnection Agreements (import/export), off-take arrangements with WAPDA and NTDC) which are signed or administered by the CPPA-G or KE before the CMOD;
117. **"Licence"** shall have the meaning assigned to the term in the Act and the word "Licensee" shall be construed accordingly;
118. **"Load Facility"** means a facility that consumes Energy;
119. **"Load Following Supply Contract"** shall have the meaning assigned to the term in Section 3.3.3;
120. **"Manual Local Meter Reading"** means obtaining the half-hourly, hourly, daily or monthly values of Energy stored in the internal memory of the Meter by visual inspection of the values shown on the Meter display;
121. **"Market"** means the Competitive Trading Bilateral Contract Market (CTBCM);
122. **"Market Settlement System"** means a system set up and administered by the Market Operator consisting of information processing and communication systems in order to perform the functions as provided in Sub-Section 7.2.2;
123. **"Market Operator"** means the person Licensed by the Authority to perform the functions of the Market Operator;
124. **"Market Operator Fee"** means the fee determined by the Authority for the Market Operator services;
125. **"Market Participant"** means any person who is enrolled with the Market Operator and has also executed a Market Participation Agreement;
126. **"Market Operator Clearing Account"** means the bank accounts established by the Market Operator pursuant to Clause 12.1.1.3;
127. **"Market Operator Miscellaneous Account"** means the bank account, established by the Market Operator, in which the Market Participant shall deposit the amounts associated with remedial actions as per Market Participation Agreement;
128. **"Market Participants Register"** means the register organised and maintained by the Market Operator with the enrolment information of Market Participants, as defined in Chapter 4;
129. **"Market Participation Agreement"** means the agreement executed by the Market Operator with another person who had applied to enrol as a Market Participant;

130. **"Market Transactions"** means those transactions in the Market which shall be applicable only after the CMOD. Such transactions include Balancing Mechanism for Energy and Capacity, payment settlements, compensation for Must Run Generation and Ancillary Services, Operator's Fee, calculation of Excess Losses and verification of compliance with Capacity Obligations;
131. **"Maximum Demand"** means maximum amount of electric power demanded by a Market Participant on coincidental basis, averaged over a [30 minutes] period, expressed in Watts or its standard multiples;
132. **"Meter"** means a device that measures electrical energy as per specifications of the Grid Code or Distribution Code, as the case may be;
133. **"Metering Incident Report"** means a report prepared by the Metering Service Provider in the cases provided in Clauses 4.3.2.2 and 18.2.3.5;
134. **"Metering Point"** means a Connection Point, equipped with a Commercial Metering System which is periodically read by an authorised Metering Service Provider;
135. **"Metering Service Provider" or "MSP"** means an entity responsible for the organization and administration of the Commercial Metering System and performing the functions of meter reading and validation at Metering Points and transferring those values to the Market Operator;
136. **"MO Website"** means the online system established by the Market Operator on the world-wide web for the exchange of information amongst the System Operator, the Market Operator, the Service Providers, Market Participants, and other interested parties in accordance with such restrictions on access as may be required under the provisions of this Code or allowed to be restricted by the Authority;
137. **"Must Run Generation"** in a particular Dispatch Period means an Out of Merit Generation Unit which has been dispatched by the System Operator in order to alleviate Congestion;
138. **"Must Stop Generation"** in a particular Dispatch Period, means a Generation Unit having Variable Generation Cost lower than the System Marginal Price and is not dispatched or is dispatched at a value lower than its Available Capacity in order to alleviate Congestion;
139. **"National Transmission and Despatch Company Limited" or "NTDC"** means the national grid company Licensed by the Authority;
140. **"Non-dispatchable Generation Unit"** means a Generation Unit whose actual production, at a given time, is dependent on the availability of primary resource which is subject to uncontrollable meteorological or hydrology factors;
141. **"Notice of Dispute"** shall have the meaning assigned to the term in Clause 14.3.1.1;
142. **"Open Access"** shall mean provision of connection and non-discriminatory use of transmission and distribution facilities of a transmission or distribution licensee against payment of such charges and on such terms and conditions as may be determined by the Authority;
143. **"Reserve Margin"** shall have the meaning assigned to the term in Clause 9.2.4.3;
144. **"Opportunity Cost Compensation"** means a compensation that a Generator is entitled to receive for the reduction in its potential revenue, on account of reduction in the Energy dispatched as per the instructions issued by the System Operator:
- a. for providing Ancillary Services; or
 - b. allowing the provision of Ancillary Services by other Generation Units;

145. **“Out of Merit Generation Unit”**, in a particular Dispatch Period, means a Generation Unit having Variable Generation Cost higher than the System Marginal Price and, for such reason, (i) has not been dispatched; or (ii) has been dispatched for alleviating Congestion or for providing Ancillary Services required by the system;
146. **“Payments Calendar”** means the calendar prepared by the Market Operator indicating the dates for issuing the Preliminary and Final Settlement Statements (monthly and yearly), and the Debit Notifications for the whole fiscal year;
147. **“Payment Due Date”** means the date of the [2nd] Business Day after the issuance of the Debit Notification or provided otherwise for payment of a specific amount under a Debit Notification;
148. **“Permanent Firm Capacity Certificate”** means a Firm Capacity Certificate granted pursuant Clause 8.3.1.7 that can be used to register Contracts with the Market Operator involving Capacity transactions;
149. **“Physical Asset”** for the purposes of this Code, means a Generation Unit of a Generation Plant which is clearly identified;
150. **“Preliminary Settlement Statement”** shall have the meaning assigned to the term in Sub-Section 7.3.1;
151. **“Preliminary Yearly Settlement Statement”** shall have the meaning assigned to the term in Sub-Section 11.4.1;
152. **“Power Acquisition Programme”** means a plan prepared by a Supplier of Last Resort or a joint plan prepared by several Suppliers of Last Resort in coordination with the Independent Auction Administrator, as the case may be, in accordance with the provisions of the relevant regulations of the Authority;
153. **“Record”** means an information, data, documents or any similar object in nature, produced or received by the Market Operator which shall be kept in writing or any other permanent form;
154. **“Reference Technology”** shall have the meaning assigned to the term in Clause 9.2.6.10;
155. **“Renewed Firm Capacity Certificate”** means a Firm Capacity Certificate which has been re-issued by the Market Operator due to the expiration of a previous Firm Capacity Certificate;
156. **“Review Request”** means a request lodged by a Market Participant with the Market Operator for review of the results of the BME, BMC, Preliminary or Final Settlement Statements (monthly or yearly), or the verification of compliance with the Capacity Obligations on the grounds that there exist errors, inaccuracies or wrong interpretations in any of the said documents;
157. **“Section”** means a section of this Code;
158. **“Secured Metering System” or “SMS”** means the information technology based system, including hardware, software and communication channels, which retrieves information from the Commercial Metering System and transfers it electronically to the System Operator, relevant Market Participant and Market Operator, at specified times;
159. **“Security Constrained Economic Dispatch” or “SCED”** shall have the meaning assigned to the term in the Grid Code;
160. **“Security Cover”** means a financial security to be provided and maintained by a Market Participant or a Transmission Service Provider in the form and amount specified in Chapter 13;



161. **"Self-dispatch"** means an operative condition in which the Generator decides, by itself, the amount of Energy that may be produced by the Generation Unit, without a specific instruction of the System Operator in this regard. For the avoidance of doubt, Generators which are exempted for being controlled by the System Operator, as per the provisions of the Grid Code, are not considered as being self-dispatched;
162. **"Service Provider"** means a person who may provide regulated services necessary for market or system functioning, and is not enrolled as a Market Participant such as Transmission Service Provider, Distribution Network Service Provider, Metering Service Provider excluding the System Operator and Market Operator;
163. **"Service Provider Agreement"** means the agreement executed between the Market Operator and a Service Provider to enrol it as Service Provider with the Market Operator;
164. **"Settlement"** means the process of calculating charges to be paid by and to Market Participants or Service Providers under this Code;
165. **"Settlement Period"** means a period of time for calculating the charges of the Imbalances associated with commercial transactions among Market Participants which is specified as one calendar month for Energy, one fiscal year for Capacity or any other shorter period of time as may be determined by the Market Operator with the approval of the Authority. The Settlement Period for Ancillary Services shall be the same as the Settlement Period for Energy;
166. **"Settlement Software"** means the suite of computer programmes used by the Market Operator to calculate the Settlement amounts under this Code;
167. **"Settlement Statement"** means the document prepared by the Market Operator which specifies the amount to be paid to or received by each Market Participant or Service Provider under this Code;
168. **"Special Purpose Agent"** means the functions of the CPPA-G, which deals with the administration of the Legacy Contracts as an agent of the Ex-WAPDA DISCOs and KE, in their role as Electric Power Suppliers as per its registration with Authority as Market Operator under the Market Rules 2015 before CMOD or its registration with the Authority under section 25A of the Act after CMOD;
169. **"Standardized Contracts"** shall have the meaning assigned to the term in Clause 3.2.2.2;
170. **"Sub-Section"** means a Sub-Section of this Code;
171. **"Supplier of Last Resort"** means a person who holds an electric power supply license for the service territory specified in its licence and is obligated to supply electric power to all consumers located in that service territory at the rates determined by the Authority and is also obligated to provide electric power supply to the consumers, located within its service territory, of any competitive supplier who defaults on its obligations of electric power supply;
172. **"Supply License" or "Electric Power Supply License"** means a License issued by the Authority under section 23E of the Act;
173. **"Suspended Participant"** is any Market Participant who has received and is the subject of a valid and continuing Suspension Order;
174. **"Suspension Order"** means an order issue by the Market Operator pursuant to Sub-Section 16.2.2;

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175. **"System Marginal Price"** means the Variable Generation Cost of the most expensive Generation Unit which would be dispatched to supply one [1] additional MW of Demand as determined pursuant to the relevant methodology developed by the System Operator according to Clause 0 and until such time the methodology according to Clause 5.5.1.2 is developed with approval of the Authority, the transitory methodology stipulated in Section 19.1 shall be used as an interim measure for this purpose;
176. **"System Operator"** means a person licenced by the Authority under section 23 G of the Act;
177. **"System Operator Fee"** means the fee determined by the Authority for the System Operator;
178. **"System Peak Hours"** means the hours included in the period from 10 a.m. to 9:00 p.m. for the months of June, July, August, and September;
179. **"Tariff Determination"** means a determination whereby the Authority approves tariff, rates, charges and other terms and conditions for provision of electric power services;
180. **"Temporary Firm Capacity Certificate"** means a Firm Capacity Certificate issued by Market Operator pursuant to Clause 8.3.1.4 that can be used as a proof of commitment during the verification process for compliance with the Capacity Obligations and/or to obtain financing for a project, but cannot be used to back up Capacity transaction in a Bilateral Contract which has to be registered with the Market Operator;
181. **"Terminated Market Participant"** means a Market Participant whose enrolment as Market Participant has been revoked and its authorisation to participate in the Market has been terminated pursuant to a Termination Order;
182. **"Termination Date"** means the date on which a Market Participation Agreement expires or the same is terminated by the Market Operator;
183. **"Termination Order"** means an order issued by the Market Operator pursuant to Clause 16.2.3.1;
184. **"Total Demand"** means the total Demand of the system, calculated pursuant to the provisions of Sub-Section 6.3.2;
185. **"Trading Period"** means the period for which an Energy transaction or a Capacity transaction is allowed as defined in Clause 3.2.1.2;
186. **"Trading Point"** means a Metering Point at which commercial transactions (buying or selling of Energy or Capacity) may take place;
187. **"Transmission Licensee"** means a person Licensed by the Authority under sections 16, 17, 18A or 19 of the Act;
188. **"Transmission Network"** means transmission facilities owned, operated, managed or controlled by a transmission licensee and used for the movement or delivery of electric power;
189. **"Transmission Service Provider" or "TSP"** means the holder of a Transmission License issued by the Authority and is enrolled with the Market Operator;
190. **"Transmitted Energy"** means the Energy which has been transported through the Transmission Network;
191. **"Urgent Amendment"** shall have the meaning as assigned to the term as per Clause 1.3.7.1;

192. **“Validation Checks”** means the set of evaluations, checks or verifications which are performed by a Metering Service Provider to determine the appropriateness of a metered value obtained through the Commercial Metering System;
193. **“Variable Generation Cost”** means the costs which vary with the change of the output of a Generation Unit; and
194. **“Variable Generation Cost List”** means the table, prepared by the System Operator, containing list of all Generation Units and Imports associated with specific Generators, organized in ascending order of their Variable Generation Cost;

1.2.1.2. The words and expressions used but not defined in this Commercial Code shall have the same meaning as are assigned to them in the Act.

1.2.2. INTERPRETATION

1.2.2.1. In case of any inconsistency or contradiction of the provisions of this Code with the Act, or rules and regulations made thereunder, the provisions of the Act or the rules and regulations, as the case may be, shall prevail to the extent of inconsistency or contradiction.

1.2.2.2. In this Code, unless the context otherwise requires:

- a) a reference to a particular Part, Chapter, Section, Sub-Section, Clause, or Appendix is to a Part, Chapter, Section, Sub-Section, Clause or Appendix of this Code;
- b) the table of contents and Chapter, Section or Sub-Section headings are for convenience only and shall be ignored while construing this Code;
- c) references to the masculine include the feminine and vice versa and references to the singular include plural;
- d) PKR means Pakistani Rupees;
- e) the word “include” shall be construed as without limitation;
- f) a reference to a “person” includes any individual, partnership, firm, company, corporation (statutory or otherwise), joint venture, trust, association, organisation or other entity, in each case whether or not having separate legal personality;
- g) a reference to law or Act or rule or regulation shall be construed to include any amendment, modification, extension, re-enactment or replacement thereof; and
- h) a derivative term of any defined or interpreted term or expression shall be construed in accordance with the relevant definition or interpretation.

1.2.3. RIGHT OF INTERPRETATION

1.2.3.1. The Market Operator shall implement, apply, and enforce the provisions of this Code.

1.2.3.2. The Market Operator shall have the right of interpretation of this Code. The Market Operator shall publish all such interpretations on the MO Website. In case of any dispute regarding interpretation of any Part, Chapter, Section, Sub-Section, Clause, Appendix or any other Provision of this Code, and subject to dispute resolution mechanism provided in the Code, the matter may be referred to the Authority for interpretation and the interpretation made in such case by the Authority shall be final and applicable on all code participants.

1.2.4. TIMES AND DATES

1.2.4.1. For the purposes of this Code, "Business Day" means a day on which the Banks in Islamabad are operational for public dealing.

1.2.4.2. References to times of a day in this Code are to Pakistan Standard Time (PST).

1.3. **AMENDMENTS TO THIS CODE**

1.3.1. COMMERCIAL CODE REVIEW PANEL

1.3.1.1. There shall be a Commercial Code Review Panel (CCRP), to be established by the Market Operator, whose duties in respect of this Code and the CTBCM include reviewing, proposing and recommending amendments to this Code for approval of the Authority on an on-going basis and making recommendations to the Authority on specific issues related to the operations of the CTBCM.

1.3.1.2. The total strength of CCRP shall consist of [13] voting members and [1] observer member to be appointed as provided in Clause 1.3.1.7.

1.3.1.3. In order to convene a meeting, at least 8 members of the total strength of the CCRP shall constitute a quorum, provided that no act or proceeding of the CCRP shall be invalid by reason only of the existence of a vacancy in or defect in the constitution of the CCRP.

1.3.1.4. Decisions of the CCRP shall be taken by the majority of its members present and in case of a tie, the person presiding the meeting shall have a casting vote.

1.3.1.5. Provided that the member specified as independent representative nominated by the Authority shall not have any vote and shall hold the position as an observer.

1.3.1.6. Members of the CCRP shall:

- a) have technical or commercial knowledge and expertise in the operation of power systems and electricity markets, and shall not be members of the Market Operator or System Operator boards;
- b) in the case of a member representing Market Participants, Transmission Service Providers, the System Operator or the Market Operator, he shall be a member, officer, employee, or agent of a person in the relevant category which such member represents;
- c) in the case of a member representing the Bulk Power Consumers, he shall be a duly authorised representative of registered bodies of such consumers;
- d) in the case of a member representing a Market Participant or a Transmission Service Provider or the System Operator or the Market Operator, he/she shall not be a member, officer, employee or agent of a person in another class of a Market Participant or the Transmission Service Provider or the Market Operator or of an Affiliate of such person; except in the case of NTDC as Transmission Service Provider and System Operator who may be member, officer, employee or agent of each other until the time the System Operator will be carved out from NTDC, if so decided by the Competent Authorities;
- e) not serve for more than two terms as a member of the CCRP.

1.3.1.7. The CCRP shall consist of the following members:

- a) One representative of Generation Companies or Licensees other than ARE Producers and hydro power plants.
- b) One representative of ARE Producers including hydro power plants.
- c) One representative of WAPDA.
- d) One representative of the National Grid Company.
- e) One representative of the Provincial Grid Companies;
- f) One representatives of the EX-WAPDA DISCOs.
- g) One representative of KE.
- h) One representative of the Competitive Suppliers.
- i) One representative of the Bulk Power Consumers.
- j) One representative of the Electric Power Traders.
- k) One representatives of the System Operator.
- l) One representatives of the Market Operator.
- m) One representative of Special Purpose Agent.
- n) One representative nominated by the Authority as an observer, without voting rights.

1.3.1.8. Nomination of the CCRP members shall be as follows:

- a) The representative of Generation Companies and Licensees and ARE Producers shall be appointed by the Association of Generators.
- b) The representative of WAPDA shall be appointed by WAPDA.
- c) The representative of the Transmission Service Providers shall be nominated by NTDC.
- d) The representative of the Provincial Grid Companies shall be nominated by the relevant Provincial Grid Companies on rotation basis in the following order: the Province of Sindh, Khyber Pakhtunkhawa, Balochistan and Punjab;
- e) The representative of the Ex-WAPDA DISCOs shall be nominated by the Association of Distribution Companies.
- f) The representative of K-Electric shall be nominated by K-Electric.
- g) The representative of the Competitive Electric Power Suppliers shall be nominated by the Association of Competitive Electric Power Suppliers.
- h) The representative of the Bulk Power Consumers shall be appointed by the Association of Bulk Power Consumers.
- i) The representative of the Traders shall be appointed by the Association of Traders.
- j) The representatives of the System Operator shall be appointed by NTDC or by the relevant company, in case the System Operator is carved out from NTDC.
- k) The representatives of the Market Operator shall be appointed by the Market Operator.
- l) The representatives of the Special Purpose Agent shall be appointed by the CPPA-G.



I.3.1.9. Until the Association of Independent Power Producers, the Association of Distribution Companies, the Association of Competitive Suppliers, the Association of Bulk Power Consumers and the Association of Traders are constituted and become operative, the Market Operator shall, in consultation with the enrolled Market Participants (who will submit [three names] of the proposed representatives for the respective Market Participant category) nominate the representatives of the initial CCRP.

I.3.1.10. The representative of the Market Operator shall be the chairperson of the CCRP.

I.3.1.11. The term of each member of the CCRP shall be three years. A member of the CCRP, whose term has expired, shall be eligible for re-nomination for a further term of three years.

I.3.2. COMMERCIAL CODE REPORT

I.3.2.1. Every year, the Market Operator shall prepare a Commercial Code Report (CC Report), describing the problems experienced by the Market Operator and/or the System Operator during the implementation of the Commercial Code and the relevant CCOPs, as well as the list and description of interpretations made by the Market Operator. The Market Operator shall submit such report to the Authority as well as publish it on MO Website.

I.3.2.2. The CC Report shall include:

- a) statistics of transactions in the market;
- b) problems identified in the implementation of the Commercial Code, and the CCOPs;
- c) interpretations made for this Code by the Market Operator, and any conflicts of interpretation of this Code with Market Participants or Service Providers;
- d) any transitional exception granted to a Market Participant in complying with the Commercial Code or the CCOPs, and the reasons thereof, and inform when a transitional exemption has ended; and
- e) any other relevant matter to identify any problems in the performance, feasibility, efficiency and design of this Code.

I.3.3. COMMERCIAL CODE WORKING GROUP

I.3.3.1. The Market Operator shall set up a Commercial Code Working Group (CCWG), as a permanent advisory group to assist the CCRP in performing its functions. The Market Operator or the CCRP, as the case may be, may assign tasks to the CCWG to assess any problem or gap in the Commercial Code including the operational procedures.

I.3.3.2. The CCWG shall include members from the System Operator and the Market Operator or if required, any other technical experts from the market or other relevant organizations.

I.3.3.3. The CC Working Group may propose to the CCRP:

- a) to accept or review an amendment proposal that has been presented to the CCRP;
- b) Amendments to correct, complete or improve the Commercial Code; and
- c) new or updated CCOPs for implementation of the Commercial Code.

1.3.4. PROCEDURE FOR REVIEW OR AMENDMENT OF COMMERCIAL CODE

1.3.4.1. The System Operator, a Service Provider, a Market Participant, the CCRP or any other interested person may propose in writing to review or amend a provision of this Code (the "Amendment Submission") to the Market Operator, accompanied with a statement of reasons.

1.3.4.2. The Market Operator shall submit to the CCRP the Amendment Submission, with the identification of the person who submitted it. The CCRP may direct the person who submitted the Amendment Submission to provide further information as may be required.

1.3.4.3. If the Amendment Submission is not proposed by the CCRP, the CCRP may refer the Amendment Submission to the CCRP for review and submission of its opinion thereon.

1.3.4.4. While considering an amendment to this Code, the CCRP shall take into consideration the recommendations of the CCRP.

1.3.4.5. Within thirty [30] Business Days of receipt of the Amendment Submission, the CCRP shall respond in writing whether the Amendment Submission, in the opinion of the CCRP:

- a) warrants further consideration; or
- b) does not require consideration in accordance with Clause 1.3.4.14.

1.3.4.6. Where the CCRP decides to further process the Amendment Submission, it shall publish it on the Market Operator website, and give notice to all Market Participants and Service Providers of the contents of the Amendment Submission. The website publication and notice shall invite Market Participants and other interested persons, to make, within such reasonable period as shall be specified in the notice, which shall not be shorter than ten [10] Business Days, written submissions concerning the Amendment Submission. The notice shall also include an electronic address for submission of comments.

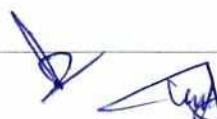
1.3.4.7. The CCRP may, at any time direct the person who made the Amendment Submission, the Market Participants or other interested persons:

- a) to make such additional written submissions within such reasonable time as the CCRP deems appropriate; or
- b) schedule and hold meetings with the person who made the Amendment Submission, Market Participants and other interested persons who filed a written submission.

1.3.4.8. The CCRP shall provide notice of meetings to any relevant Market Participant or other interested persons, to participate in the meetings.

1.3.4.9. The CCRP shall, as soon as reasonably practicable, consequent to any meetings and consultation sessions which may have been held, convene one or more meetings of its members, as may be necessary, to consider and vote on the Amendment Submission. The CCRP shall consider all submissions, received by it within the specified time.

1.3.4.10. Following the conclusion of the deliberations and meetings of CCRP, if an Amendment Submission is recommended to be submitted to NEPRA for review and approval, as originally proposed or with any modifications, the CCRP shall prepare a report which includes:



- a) the recommendations of the CCRP regarding the Amendment Submission and the analysis and the reasons thereof;
 - b) where the recommendations of the CCRP include a proposal to amend the Code, a copy of the proposed text of the Amendment, the suggested time of commencement of the Amendment, and a summary of any objections to the Amendment Submission which may have been raised through written submissions or brought to the attention of the CCRP during any meetings;
 - c) a summary of the procedure followed by the CCRP in considering the matter, including list of meetings held with parties, scope and general objectives;
 - d) a record of the vote of each member of the CCRP in respect of each of the recommendations made in the report; and
 - e) a summary of any objections raised by any member of the CCRP to the recommendations, if so requested by the said member.
- 1.3.4.11. Upon completion of the report referred to in Clause 1.3.4.10, the CCRP shall refer the matter to the Market Operator for onward submission to the Authority for approval of the recommendations.
- 1.3.4.12. The Market Operator may publish the recommendations contained in the report referred to in Clause 1.3.4.10 and give notice thereof to all relevant Market Participants, Service Providers and to the person or persons who made the Amendment Submission, provided that Confidential Information will not be disclosed unless authorized by the relevant party.
- 1.3.4.13. The Market Operator shall publish on its website, copies of all submissions received pursuant to Clause 1.3.4.5 or 1.3.4.6, together with the report prepared by the details of any further submissions which were made before the CCRP in accordance to Clause 1.3.4.10.
- 1.3.4.14. The CCRP may reject the proposed Amendment if, in its opinion and with adequate justification, the proposed Amendment:
- a) unfairly discriminates against a Market Participant or class of Market Participants;
 - b) will limit, and not advance, competition, or prevent open entry into the wholesale competitive market;
 - c) may allow one or more Market Participants to possess market power;
 - d) may have a potential for abuse of market power by one or more Market Participants;
 - e) is not conducive to efficient and economic operation of the wholesale competitive market;
 - f) materially alters the framework of the CTBCM; or
 - g) is not consistent with the Applicable Law or policy of the GoP.
- 1.3.4.15. Where the Authority:
- a) approves the proposed Amendment to this Code, the Market Operator, within 5 business days after receiving decision of the Authority, shall publish such decision on the MO Website, together with a copy of the Amendment, and shall give notice of the decision to all Market Participants, Service Providers and the person who proposed the Amendment Submission. The Market Operator shall update the Code accordingly and make an updated copy of the Code available on its website.
 - b) rejects the proposed Amendment to this Code, the Market Operator shall publish such



decision on the MO Website and disseminate it to all Market Participants, Service Providers and the person who proposed the Amendment Submission.

- c) sends back the proposed Amendment with comments, the CCRP shall assess the comments and revise the Amendment accordingly to resubmit it to the Authority for approval.

1.3.5. AMENDMENTS INITIATED BY THE CCRP

1.3.5.1. Where the CCRP on its own motion or upon recommendations of the CCWG determines at any time that an Amendment to or a review of the Commercial Code is necessary, it shall issue a notice (the "Review Notice") in this respect together with the reasons thereof to the Market Participants and other interested persons to make written submissions within a specified period. Such Review Notice shall also be published on MO Website and shall contain an electronic address to submit comments.

1.3.5.2. The procedure set out in Clauses 1.3.4.6 to 1.3.4.15 shall, *mutatis mutandis*, apply to the Review Notice.

1.3.6. AMENDMENTS INSTRUCTED BY THE AUTHORITY

1.3.6.1. Where the Authority under section 23B (3) of the Act directs the Market Operator to make an Amendment in the Commercial Code, the Market Operator shall refer the said Amendment to the CCRP immediately but not later than two Business Days.

1.3.6.2. The CCRP shall analyse the proposed Amendment and in case there is no cause to object the Amendment, it will introduce an Amendment to the Commercial Code as directed by the Authority and direct the Market Operator to submit the same for final approval of the Authority. Once approved by the Authority, the Market Operator shall publish the Amendment on its website as mentioned in Clause 1.3.4.15 and implement the same.

1.3.6.3. Where the CCRP considers that there is a just cause not to adopt the Amendment as directed by the Authority, it shall prepare its recommendations before expiry of 30 days from the date of receipt of direction of the Authority to the MO, in this respect and instruct the Market Operator to submit the same to the Authority.

1.3.6.4. In case the Authority does not agree with the cause provided by the Market Operator under Clause 1.3.6.3 and directs the Market Operator to implement the Amendment as initially instructed or with modification, the Market Operator shall implement the Amendment as per procedure in Clause 1.3.6.2 above.

1.3.7. URGENT AMENDMENTS

1.3.7.1. An Urgent Amendment may be proposed by the CCRP or recommended by the CCWG to the CCRP, with adequate justification, in the following cases:

- a) to avoid, reduce or mitigate the risks of abusing market power;
- b) to correct errors in formula and/or detailed data;
- c) to modify the provisions of this Code which are contradictory or inconsistent with the rules or regulations framed under the Act where it is impossible to comply with such rules and regulations by following the normal procedure;
- d) to avoid, reduce or mitigate unintended adverse effects of a provision of this Code.

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1.3.7.2. Where the CCWG submits a document recommending and justifying an Urgent Amendment to the CCRP, the CCRP shall convene, within 15 Business Days, a meeting to consider the proposed Amendment and either:

- a) recommend the Urgent Amendment, in the form proposed by the CCWG or with necessary modifications, in a document with the assessment and justification; or
- b) reject the proposed Urgent Amendment with reasons.

1.3.7.3. Where an Urgent Amendment is recommended by the CCRP, it shall instruct the Market Operator to submit the document with the proposed Urgent Amendment and its justification, for consideration and approval of the Authority.

1.3.7.4. Where an Urgent Amendment is approved by the Authority, the Market Operator shall forthwith publish such Urgent Amendment on the MO Website and shall also inform all the Market Participants and Service Providers. The Market Operator shall update the Code accordingly.

1.3.8. PREPARATION AND AMENDMENT OF THE CCOPS

1.3.8.1. Any new CCOP prepared under the provisions of this Code shall be submitted to the Authority for its information before implementation.

1.3.8.2. The CCOPs shall be prepared within the timelines as stipulated in this Code, however, if any specific timeline is not stipulated, the same shall be prepared within 30 Business Days of approval of this Code.

1.3.8.3. Any CCOP prepared under the provisions of this Code shall be consistent with this Code. If there is any inconsistency, the Code shall prevail to the extent of the inconsistency.

1.3.8.4. If an Amendment is required to an existing CCOP, the same shall be prepared by the Market Operator, or by the System Operator or the Metering Service Provider in collaboration with the Market Operator, as the case may be.

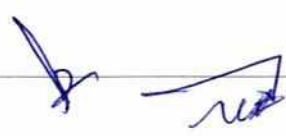
1.3.8.5. Any new CCOP or Amendment to an existing CCOP pursuant to Clause 1.3.8.4, shall be approved by the CCRP before implementation.



Chapter 2. ENROLMENT OF MARKET PARTICIPANTS AND SERVICE PROVIDERS

2.1. MARKET PARTICIPANT ELIGIBILITY REQUIREMENTS FOR ENROLMENT

- 2.1.1.1. Any person who intends to buy or sell electric power (Energy and/or Capacity), or to participate in the CTBCM, unless exempted under this Code, shall enrol as a Market Participant with the Market Operator, in accordance with the provisions of this Chapter.
- 2.1.1.2. Following Categories of Market Participants shall be entitled to participate in the CTBCM:
- a) Generation Companies
 - b) Captive Generators
 - c) Electric Power Suppliers
 - d) Electric Power Traders
 - e) Bulk Power Consumers
- 2.1.1.3. Following persons are exempted to enrol as Market Participants to participate in the CTBCM:
- a) A Generator, connected to a Distribution Network at the distribution voltage which does not fall in the scope of the Grid Code, and sells all its Capacity and Energy to an Electric Power Supplier or an Electric Power Trader;
 - b) A Generator selling its Energy and/or Capacity through a Legacy Contract;
 - c) In case of Imports, the seller in the Contract;
 - d) In case of Exports, the buyer in the Contract;
 - e) A Bulk Power Consumer in case it decides to buy both its Energy and Capacity from the relevant Supplier of Last Resort or it decides to sign a Standardized Load Following Supply Contract with a Competitive Supplier, as per the conditions stipulated in Sub-Section 3.3.3.
- 2.1.1.4. Any person who has been granted an exemption to enrol as a Market Participant as per Clause 2.1.1.3 above, may enrol as a Market Participant.
- 2.1.1.5. A person desirous to enrol as a Market Participant to participate in the Market shall fulfil the following requirements:
- a) the person:
 - a.1. if the application is as Generator, shall have a generation License or a concurrence has been issued by the Authority to this effect and shall have obtained the necessary Firm Capacity Certificates from the Market Operator;
 - a.2. if the application is as Electric Power Supplier, shall have an Electric Power Supplier License;
 - a.3. if the application is as Electric Power Trader, shall have an Electric Power Trader Licence; or
 - a.4. owns and operates Captive Generation; or
 - a.5. is a BPC;



- b) in case of enrolling as a Generator or a BPC, the person has installed a Commercial Metering System at each Connection Point, in accordance with the provisions of the Grid Code or the Distribution Code, as applicable, and has a valid Connection Agreement with the Transmission or Distribution Network Service Provider to which it is connected, provided that at the CMOD, the person that is already connected without a Connection Agreement will be enrolled and will be obligated to submit the Connection Agreement within the next six [6] months after its enrolment date.
 - c) the person shall submit an Admission Application to the Market Operator which shall be processed as per provisions of this Code.
- 2.1.1.6. If at any time, a Market Participant ceases to be eligible to be enrolled as a Market Participant in accordance with this Code, the Market Participant shall immediately inform the Market Operator and, as soon as practicable, the Market Operator shall issue a Suspension Order in accordance with this Code.

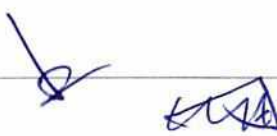
2.2. RIGHTS AND OBLIGATIONS OF THE MARKET PARTICIPANTS

2.2.1.1. A Market Participant generally shall have, *inter alia*, the following obligations:

- a) if the Market Participant is a Generator, Captive Generator or an Electric Power Trader representing a Generator, provide the Ancillary Services as provided in the Grid Code;
- b) submit to the Market Operator, in a timely manner and to the best of its knowledge, the information stipulated in this Code or as may be required under the CCOPs and necessary for the Market Operator to perform its functions, and inform, as soon as possible, any change in such information;
- c) pay in time any Amounts Payable to the Market Operator;
- d) maintain a Security Cover and Guarantee Amount as required by the Market Operator as specified in this Code; and
- e) maintain a bank account for the administration of the market payment system;
- f) fully abide by this Code, as applicable.

2.2.1.2. Each Market Participant shall have, *inter alia*, the following rights:

- a) non-discriminatory Open Access to the Transmission and Distribution Networks in accordance with the Grid Code and the Distribution Code;
- b) participation in the Balancing Mechanisms for Energy and Capacity;
- c) if applicable, compensation for providing Ancillary Services or Must Run Generation, as provided in this Code;
- d) access to the reports and Non-Confidential Information on the website of the Market Operator, that this Code requires to be published as non-confidential;
- e) access to the secured portion of the Market Operator website which is exclusive for Market Participants;
- f) submission of complaints to the System Operator regarding a function assigned to it under this Code or to the Market Operator in accordance with the procedures provided in this Code.



2.3. PROCEDURES TO BECOME MARKET PARTICIPANT

2.3.1. APPLICATION TO BECOME A MARKET PARTICIPANT

2.3.1.1. The Market Operator shall develop a CCOP which shall include the following:

- a) to describe in detail the requirements to enrol a Market Participant and maintain such enrolment;
- b) The requisite information and documents to be furnished by the Applicant for each Category of Market Participants;
- c) An Admission Application;
- d) Detailed procedure for approval and rejection of the Admission Application; and
- e) Procedure for modification of the information already submitted by a Market Participant.

2.3.1.2. The Market Operator shall make available on its website the following documents and information in the most updated form:

- a) the Admission Application form;
- b) the Commercial Code along with CCOPs;
- c) draft Standard Market Participation Agreement; and
- d) the schedule of fees for processing an Admission Application.

2.3.1.3. Any person interested to become a Market Participant shall submit to the Market Operator:

- a) a complete Admission Application;
- b) the information required in the CCOP relevant to the admission process;
- c) a non-refundable application processing fee as determined by the Market Operator; and
- d) where applicable, if the person has facilities γ already connected to the Grid System, the Transmission or Distribution Connection Agreement or the details thereof, provided that at the start of the CTBCM, the person that is already connected without a Connection Agreement shall be enrolled and will be required to submit the Connection Agreement within the next six [6] months from the date of its enrolment with the Market Operator, or in case the relevant facility is yet to be connected to the Grid System, the draft Transmission or Distribution Connection Agreement or a declaration that the involved facility of the Applicant shall be connected to the Transmission or Distribution Network.

2.3.1.4. An Applicant who wants to be enrolled in more than one of the Categories defined in Clause 2.1.1.2 shall submit separate application for each Category.

2.3.2. APPLICATION PROCESS

2.3.2.1. Within five [5] Business Days of receipt of an Admission Application along with the supporting information, the Market Operator shall acknowledge the receipt of the Applicant in writing:

- a) that it has received the Admission Application, any other documents as required in 2.3.1.3 and the admission CCOP, if any, and the non-refundable processing fee; and
- b) if applicable, notify the amount of the Security Cover and Guarantee Amount pursuant to the provisions stated in Chapter 13.

- 2.3.2.2. Within five [5] Business Days of receipt of notification from the Market Operator pursuant to Clause 2.3.2.1.b), specifying the amount of Security Cover and Guarantee Amount required to be furnished by the Applicant, the Applicant shall furnish to the Market Operator a proposal for a provision of the Security Cover and the Guarantee Amount.
- 2.3.2.3. Within seven [7] Business Days after receipt of the proposal of the Applicant pursuant to Clause 2.3.2.2, the Market Operator shall inform the Applicant:
- a) the Admission Application is deficient, and the Applicant is required to provide certain information or documents and return the application; and/or
 - b) that it is required to supply such additional information or documents; and/or
 - c) if applicable, the metering system installed by the Applicant is not in accordance with the provisions of this Code or the Grid Code, and if required, the Applicant has to install additional Commercial Metering System at one or more identified points; and/or
 - d) the Applicant's proposal regarding Security Cover and Guarantee Amount is not in accordance with Clause 13.1.2.1.
- 2.3.2.4. If the Market Operator requests additional information or documents pursuant to Clause 2.3.2.3 or informs the Applicant that it has to install additional Commercial Metering Systems or that the proposal for the Security Cover and Guarantee Amount is not acceptable, the Applicant shall provide such additional information, documents, or get installed the additional Commercial Metering Systems as per provisions of the Grid Code or Distribution Code (as may be applicable) or submit a revised proposal for the Security Cover or Guarantee Amount or re-submit the Admission Application after remedying the deficiencies, as the case may be, at the earliest possible date.
- 2.3.2.5. Where an Applicant does not comply with the request of the Market Operator as required in Clause 2.3.2.4 within three [3] months, the Admission Application shall automatically lapse, however, the Applicant may reapply to the Market Operator after fulfilling all the requirements.

2.3.3. PROCEDURES FOR APPROVAL / REJECTION OF AN ADMISSION APPLICATION

- 2.3.3.1. If the Applicant fulfils the requirement specified in this Code and the relevant CCOP, the Market Operator shall accept the Admission Application and provide the standardized Market Participation Agreement to the Applicant for execution.
- 2.3.3.2. If applicable, the Market Operator shall also inform the approved form in which Security Cover and Guarantee Amount must be furnished by the Applicant and copies of such other agreements, if any, submitted by the Applicant, as the Market Operator agrees to enter into, in final form for the Applicant to sign and return to the Market Operator.
- 2.3.3.3. The Market Operator may reject an Admission Application for one or more of the following reasons:
- a) the Applicant does not possess the requisite Licence or regulatory authorization/permission/concurrence or other regulatory documents required under this Code;
 - b) the Applicant doesn't comply with any applicable regulations;
 - c) the Applicant has not supplied the requisite information or has not got installed the requisite Commercial Metering System;




- d) in the Market Operator's sole discretion, the proposal of the Applicant for the provision of the Security Cover and Guarantee Amount is not in accordance with the provisions of Sub-Section 13.1.2;
- e) the Applicant previously defaulted on its obligations as a Market Participant and its enrolment was terminated and has not yet remedied the cause of such default.

2.3.4. FINAL STEPS TO BECOME A MARKET PARTICIPANT

2.3.4.1. Upon receipt of the Market Participation Agreement and the approved form and amount of the Security Cover and Guarantee Amount, forwarded by the Market Operator pursuant to Clause 2.3.3.2, the Applicant shall:

- a) execute the Market Participation Agreement, and return it to the Market Operator; and
- b) if applicable, furnish to the Market Operator the required Security Cover and Guarantee Amount.

2.3.4.2. After receipt of the Market Participation Agreement, duly executed by an authorised official of the Applicant, and the required Security Cover and Guarantee Amount, the Market Operator shall enrol the Applicant as a Market Participant by giving it a unique identification number within five [5] Business Days of the receipt of the aforesaid documents, and inform the Market Participant accordingly.

2.3.4.3. The Applicant shall be a Market Participant with effect from the date of enrolment and shall be provided access to the secured Section of the MO Website.

2.3.4.4. The Market Operator shall:

- a) provide to the newly enrolled Market Participant the names of all other Market Participants and their requisite details;
- b) inform all other Market Participants the details of newly enrolled Market Participant.

2.3.5. RIGHTS FOR APPEAL AND RECONSIDERATION

2.3.5.1. Any person whose Admission Application has been rejected may challenge the decision of the Market Operator in accordance with the Dispute resolution procedure set out in Chapter 14.

2.4. MARKET PARTICIPANT ENROLMENT

2.4.1. MARKET PARTICIPANTS REGISTER

2.4.1.1. The Market Operator shall organise, maintain, and place on its website a register of Market Participants called the Market Participants Register. The Market Participants Register shall identify the status of each Market Participant, namely: active, suspended, terminated, withdrawn or notified for withdrawal.

2.4.1.2. Upon admission of a Market Participant in one or more Categories of Market Participants, the Market Operator shall record the relevant information in the Market Participants Register.

2.4.1.3. The Market Participants Register shall clearly indicate the Categories in which a Market Participant is enrolled.



2.4.1.4. The Market Operator shall update the Market Participants Register upon:

- a) enrolment of a new Market Participant;
- b) issuance of a Suspension Order;
- c) termination or withdrawal;
- d) receipt of new information as per Clause 2.4.2.1.

2.4.2. MARKET PARTICIPANT'S ONGOING REPORTING OBLIGATIONS

2.4.2.1. Each Market Participant shall have an ongoing obligation to inform the Market Operator of any material change related to its business and to the information included in its Admission Application, including any modification in the technical or operational characteristics of the equipment it owns and is connected to the Grid System.

2.4.2.2. If a Market Participant fails to comply with the requirements of Clause 2.4.2.1, which may have a materially adverse effect on the buying and selling obligations of other Market Participants, the Market Operator, may suspend or terminate the Market Participant's rights in accordance with Chapter 16 of this Code.

2.5. WITHDRAWAL OR TERMINATION OF ENROLMENT OF A MARKET PARTICIPANT

2.5.1. WITHDRAWAL BY A MARKET PARTICIPANT

2.5.1.1. A Market Participant may withdraw as a Market Participant at any time subject to fulfilment of the following conditions:

- a) by giving notice of not less than two [2] months in writing to the Market Operator;
- b) the Market Operator shall examine the withdrawal notice and verify compliance of the Market Participant with the requirement of Clause 2.5.1.2 below;
- c) thereafter, deregister all its Bilateral Contracts with other Market Participants, as stipulated in Sub-Section 3.6;
- d) obtaining the prior written consent of the Authority to its ceasing to be a Market Participant, in cases this consent is required by the existing policy or regulation or the conditions of its License. Its withdrawal shall take effect only on such terms and conditions as the Authority may determine.

2.5.1.2. The requirements to be fulfilled by the Market Participant prior to its withdrawal, pursuant to Clause 2.5.1.1 above are:

- a) all amounts due and payable by the Market Participant under or pursuant to this Code have been paid in full prior to the Termination Date;
- b) the Market Participant is not in breach of any legal, policy or regulatory requirement, including any required consent from the Authority, by ceasing to be a Market Participant; and
- c) the Market Participant has remedied any breach which is capable of remedy prior to the withdrawal notice.

2.5.1.3. Notwithstanding compliance with Clause 2.5.1.2 above, the Market Participant shall remain liable for all obligations and liabilities which were incurred or arose prior to the Termination Date regardless the date on which such claim relating thereto may be made.

2.5.1.4. The acceptance of the withdrawal notice by the Market Operator and subsequent deregistration of the Contracts shall result in the automatic termination of the Market Participation Agreement.

2.5.2. TERMINATION DECIDED BY THE MARKET OPERATOR

2.5.2.1. The Market Operator may decide to revoke the enrolment of a Market Participant in accordance with the provisions of Chapter 16.

2.6. ENROLMENT OF SERVICE PROVIDERS

2.6.1.1. Any person holding a Transmission License, Distribution License or registered by the Authority as Metering Service Provider, shall enrol as a Service Provider with the Market Operator, in accordance with the provisions of this Chapter.

2.6.1.2. If at any time, a Service Provider ceases to be eligible to be enrolled as a Service Provider in accordance with this Code, the Service Provider shall immediately inform the Market Operator and, as soon as practicable, the Market Operator shall inform the Authority.

2.7. RIGHTS AND OBLIGATIONS OF THE SERVICE PROVIDERS

2.7.1.1. A Service Provider shall have, *inter alia*, the following obligations relevant to this Code:

- a) submit to the System Operator and the Market Operator, in a timely manner and to the best of its knowledge, the information stipulated in this Code or as may be required by the System Operator and the Market Operator in accordance with this Code, and inform, as soon as possible, any change in such information;
- b) pay in time any Amounts Payable to the Market Operator;
- c) if required, maintain a Security Cover as required by the Market Operator as provided in this Code; and
- d) if applicable, maintain a bank account for the administration of the market payment system;
- e) abide fully with this Code as applicable.

2.7.1.2. . In the Market, each Service Provider shall have, *inter alia*, the following rights:

- a) undertake the market related activities for which it has been enrolled by the Market Operator;
- b) access to the reports and Non-Confidential Information on the website of the Market Operator, which are defined as non-confidential in this Code;
- c) submission of complaints to the System Operator regarding a function assigned to it under this Code or to the Market Operator in accordance with the procedures provided in this Code.

2.8. PROCEDURE TO ENROL AS A SERVICE PROVIDER

2.8.1. APPLICATION TO ENROL AS SERVICE PROVIDER

2.8.1.1. The Market Operator shall develop a CCOP which shall include the following:

- a) to describe in detail the requirements to enrol as Service Provider and maintain such enrolment;
 - b) The requisite information and documents to be furnished by the Applicant for each type of service;
 - c) An Admission Application;
 - d) Detailed procedure for approval and rejection of the Admission Application; and
 - e) Procedure for modification of the information already submitted by a Service Provider.
- 2.8.1.2. The Market Operator shall make available on its website the following documents information in the updated form:
- a) the Admission Application form for enrolment of Service Providers;
 - b) the Commercial Code along with CCOPs;
 - c) draft Standard Service Provider Agreement; and
 - d) if applicable, the schedule of fees for processing an Admission Application.
- 2.8.1.3. Any person interested to become a Service Provider shall submit to the Market Operator:
- a) a complete Admission Application;
 - b) the information required in the CCOP relevant to the admission process;
 - c) if applicable, a non-refundable application processing fee as determined by the Market Operator.
- 2.8.1.4. An Applicant who wants to be enrolled for more than one type of services shall submit separate application for each type of service.

2.8.2. APPLICATION PROCESS

- 2.8.2.1. The process defined under Sub-section 2.3.2 shall, *mutatis mutandis*, apply to enrol a person as a Service Provider.

2.8.3. PROCEDURE FOR APPROVAL / REJECTION OF AN ADMISSION APPLICATION

- 2.8.3.1. If the Applicant fulfils the requirement specified in this Code and the relevant CCOP, the Market Operator shall accept the Admission Application and provide the Applicant the standardized Service Provider Agreement for execution.
- 2.8.3.2. The Market Operator may reject an Admission Application for enrolment as a Service Provider for one or more of the following reasons:
- a) the Applicant does not possess the requisite Licence or registration with the Authority;
 - b) the Applicant has not supplied the requisite information.

2.8.4. FINAL STEPS TO ENROL AS A SERVICE PROVIDER

- 2.8.4.1. Upon receipt of the Service Provider Agreement forwarded by the Market Operator pursuant to Clause 2.8.3.1, the Applicant shall execute the Service Provider Agreement, and return it to the Market Operator.



2.8.4.2. After receipt of the Service Provider Agreement, duly executed by an authorised official of the Applicant, the Market Operator shall enrol the Applicant as a Service Provider by giving it a unique identification number within five [5] Business Days of the receipt of the aforesaid documents and inform the Service Provider accordingly.

2.8.4.3. The Market Operator shall inform all Market Participants and Service Providers the details of newly enrolled Service Provider.

2.8.5. DISPUTE RESOLUTION

2.8.5.1. Any person whose Admission Application has been rejected may challenge the decision of the Market Operator in accordance with the Dispute resolution procedure set out in Chapter 14.

2.8.6. SERVICE PROVIDER REGISTER

2.8.6.1. The Market Operator shall organise, maintain, and place on its website a register of Service Providers called the Service Providers Register.

2.8.6.2. Upon enrolment as a Service Provider for one or more type of services, the Market Operator shall record the relevant information in the Service Providers Register.

2.8.6.3. The Service Providers Register shall clearly indicate the type of services for which a Service Provider is enrolled.

2.8.6.4. The Market Operator shall update the Service Providers Register upon:

- a) enrolment of a new Service Provider;
- b) termination or withdrawal of a Service Provider;
- c) receipt of new information as per Clause 2.8.7.1.

2.8.7. SERVICE PROVIDER'S ONGOING REPORTING OBLIGATIONS

2.8.7.1. Each Service Provider shall have an ongoing obligation to inform the Market Operator of any material change related to its business and to the information included in its Admission Application, including any modification in the technical or operational characteristics of the equipment it owns and is connected to the Grid System.

2.8.7.2. If a Service Provider fails to comply with the requirements of Clause 2.8.7.1, which may have a materially adverse effect on the Market, the Market Operator may take an enforcement action in accordance with Chapter 16 of this Code.

2.9. WITHDRAWAL OR TERMINATION OF ENROLMENT AS A SERVICE PROVIDER

2.9.1. WITHDRAWAL BY A SERVICE PROVIDER

2.9.1.1. A Service Provider may withdraw its enrolment with the Market Operator at any time subject to fulfilment of the following conditions:

- a) by giving notice of not less than two [2] months in writing to the Market Operator;
- b) the Market Operator shall examine the withdrawal notice and verify compliance of the Market Participant with the requirement of Clause 2.5.1.2 above;



- c) obtaining the prior written consent of the Authority.

2.9.1.2. The requirements to be fulfilled by the Service Provider prior to its withdrawal, pursuant to Clause 2.9.1.1 above are:

- a) all amounts due and payable by the Service Provider under or pursuant to this Code have been paid in full prior to the withdrawal;
- b) the Service Provider is not in breach of any legal, policy or regulatory requirement, including any required consent from the Authority, by ceasing to be a Market Participant; and
- c) the Service Provider has remedied any breach which is capable of remedy prior to the withdrawal notice.

2.9.1.3. Notwithstanding compliance with Clause 2.9.1.2 above, the Service Provider shall remain liable for all obligations and liabilities which were incurred or arose prior to the withdrawal regardless the date on which such claim relating thereto may be made.

2.9.1.4. The acceptance of the withdrawal notice by the Market Operator shall result in the automatic termination of the Service Provider Agreement.

2.9.2. TERMINATION DECIDED BY THE MARKET OPERATOR

2.9.2.1. The Market Operator may decide to expel a Service Provider in accordance with the provisions of Chapter 16.

2.10. ENROLMENT OF OTHER PERSONS

2.10.1. REQUIREMENT TO BECOME AN ENROLLED PERSON

2.10.1.1. The following persons shall enrol with the Market Operator to become Enrolled Persons:

- a) A person who is not enrolled as Market Participant and intends to obtain Firm Capacity Certificates for a Generation Unit or a Generation Plant;
- b) A person who is a BPC and is not registered as Market Participant and intends to sign a Standardized Load Following Contract with a Competitive Electric Power Supplier.

2.10.2. PROCEDURE TO BECOME AN ENROLLED PERSON

2.10.2.1. The process defined under Section 2.8 shall, *mutatis mutandis*, apply to become a Enrolled Person.

2.10.3. RIGHTS AND OBLIGATIONS OF ENROLLED PERSONS

2.10.3.1. An Enrolled Person shall have, *inter alia*, the following obligations:

- a) comply with the provisions of this Code;
- b) timely submit any information required by the Market Operator;
- c) any other obligations as required under this Code.

2.10.3.2. Each Enrolled Person shall have, *inter alia*, the following rights:

- a) obtain the Firm Capacity Certificate or be a party to a Standardized Load Following Contract, as the case may be;
- b) become a Market Participant subject to fulfilling the eligibility requirements as provided in this Code;
- c) access to the reports and Non-Confidential Information on the website the Market Operator, which are defined as non-confidential in this Code;
- d) submission of complaints to the Market Operator in accordance with the procedures provided in this Code.

2.11. ENROLMENT FEE

2.11.1. REQUIREMENT OF ENROLMENT FEE

- 2.11.1.1. The Market Operator may charge a fee on any person who submits an application to the Market Operator for enrolment as Market Participant or Service Provider or Enrolled Person.
- 2.11.1.2. The amount of fee as referred to in Clause 2.11.1.1 above shall be approved by the Board of Market Operator for each Category of Market Participants, Service Providers or Enrolled Persons and shall be published on MO Website, subject to the approval of the Authority.



Chapter 3. CONTRACTS AND CONTRACT REGISTRATION

3.1. CONTRACT MARKET

3.1.1. TRADING OF ENERGY AND CAPACITY

3.1.1.1. In the CTBCM, Energy and Capacity buying and selling among Market Participants shall be primarily carried out through Contracts which shall be registered with the Market Operator. The Contract Market shall include:

- a) bilateral buying and selling among Market Participants; or
- b) bilateral buying and selling between a Market Participant and entities located in foreign countries; or
- c) bilateral buying and selling between a Market Participant and a person which operates under a special regime in areas where the applicability of the Act is not extended.

3.1.2. MANDATORY CLAUSES

3.1.2.1. All Market Participants shall ensure that the Contracts are designed in such a way that all Energy and Capacity is bought or sold through these Contracts or through the Balancing Mechanism for Energy and Capacity provided in this Code.

3.1.2.2. All Contracts, to be registered with the Market Operator, must include a clause whereby both parties agree to abide by this Code, and the Act, rules, regulations, Grid Code and any other document as may be approved or issued by the Authority from time to time. .

3.1.2.3. All Contracts, as referred to in Clause 3.1.2.2, where the seller is a Generator or the seller is an Electric Power Trader which is representing Generators shall include conditions establishing that the seller in the Contract agrees to provide all Ancillary Services as stipulated in the Grid Code, if the contracted generation has the technical capability and equipment to do so, without any additional payment other than those explicitly provided in Chapter 6.

3.1.2.4. All Contracts must include a clause whereby both parties agree to use the quantities, for their bilateral settlement purposes, as included in the Settlement Statements issued by the Market Operator in accordance with this Code and the relevant CCOPs. The review of the quantities and Settlement Statements or in case there is a dispute, shall be dealt with in accordance with this Code.

3.2. CONTRACT FORMATS

3.2.1. GENERAL REQUIREMENTS FOR CONTRACTS

3.2.1.1. A Contract in the CTBCM shall be bilaterally agreed between a seller and a buyer and it may include Energy, Capacity or both products simultaneously. The transactions for each of these two products shall be explicitly specified in the Contract for each Trading Period. The Contracts shall also specifically include provisions regarding allocation of compensations related to Must Run Generation and Ancillary Service to the seller or the buyer.

3.2.1.2. For the application of this Code:

- a) the Energy Trading Period is defined as one hour.
- b) the Capacity Trading Period is defined as one day, starting at 0:00 and ending at 23:59 of the same day.

3.2.1.3. The contracted Energy quantities as agreed in the registered Contracts, will be used for Settlement of the Imbalances of Energy.

3.2.1.4. The contracted Capacity quantities as agreed in the registered Contracts will be used for:

- a) verifying compliance with the ex-ante Capacity Obligations of the Market Participants; and
- b) calculating the Capacity Balances of the Market Participants in the Balancing Mechanism for Capacity and verification of ex-post Capacity Obligations.

3.2.1.5. Capacity transactions in a registered Contract may be agreed as following:

- a) **Guaranteed Capacity:** Where the seller assumes complete responsibility for the Capacity Imbalances, which may arise in the Balancing Mechanism for Capacity, linked with the value of Capacity sold by the seller, as provided in Chapter 9.
- b) **Non-guaranteed Capacity:** Where the buyer assumes complete responsibility for the Capacity Imbalances, which may arise in the Balancing Mechanism for Capacity, linked with the value of Capacity bought by the buyer, as provided in Chapter 9.

For the avoidance of doubt, Capacity transactions, either Guaranteed or Non-guaranteed shall be credited to the buyer for compliance with the ex-ante Capacity Obligations of the buyer, as specified in Chapter 10.

3.2.2. TYPES OF CONTRACTS

3.2.2.1. A Contract agreed between a seller and a buyer may be classified as under:

- a) Standardized Contract
- b) Customized Contract

3.2.2.2. A Standardized Contract is a Contract in which the amount of Energy and Capacity is bought and sold according to the pre-defined terms and conditions. These types of Contracts are further explained in Section 3.3.

3.2.2.3. In case a Standardized Contract has been executed, and the parties formally declare this during the Contract registration process, it will not be necessary to disclose the signed Bilateral Contract to the Market Operator, and it would be sufficient to provide information required in this Code to proceed with the registration of the Contract.

3.2.2.4. A Customized Contracts is a Contract that may not be classified as a Standardized Contract. In case a Customized Contract has been executed, the Market Operator may require the parties to provide any information it deems necessary to ensure proper settlement of the contracted quantities in the Balancing Mechanism for Energy and Capacity:

For the avoidance of doubt:

- a) the Market Operator, if adequately justified, may review the original Contract signed between the parties only in order to assess the implication of certain clauses or provisions in the balancing mechanisms settlement process and Capacity Obligations;

- b) the Market Operator shall not review the prices or other commercially sensitive information agreed between the parties to the extent that such information is not necessary to take a decision, provided that it will be decided by the Market Operator whether certain information, excluding the prices, is commercially sensitive or not subject to the Market Operator providing the justification in writing; and
- c) all the information received by the Market Operator, other than the information to be incorporated into the Contract Register shall be considered Confidential Information and shall be handled as per provisions of Chapter 17.
- d) In case of any dispute between the Market Operator and the Market Participant with regards to provision of information required in sub-clause (a) above, the dispute will be settled in accordance with the dispute resolution mechanism provided in this Code.

3.2.2.5. Following types of Contracts shall be considered Standardized Contracts:

- a) Generation Following Supply Contract
- b) Capacity and Associated Energy Supply Contract
- c) Load Following Supply Contract
- d) Financial Supply Contract with Fixed Quantities

3.3. CHARACTERISTICS OF STANDARDIZED CONTRACTS

3.3.1. GENERATION FOLLOWING SUPPLY CONTRACT

3.3.1.1. In a Standardized Generation Following Supply Contract, the seller may sell:

- a) a defined percentage of the Capacity associated with the Physical Asset or assets; and
- b) a defined percentage of the Energy injected into the Grid System.

3.3.1.2. This Contract shall have, *inter alia*, the following characteristics:

- a) the seller either may be a Generator or an Electric Power Trader and the buyer either may be an Electric Power Supplier or an Electric Power Trader;
- b) the Contract shall be associated with a Physical Asset or group of Physical Assets, clearly identified;
- c) the amount of Energy bought and sold shall be a defined percentage of all the Energy injected into the Grid System by the associated Generation Plant at each Trading Period;
- d) the amount of Capacity bought and sold shall be a defined percentage of the Firm Capacity Certificates issued by the Market Operator, associated with the Physical Asset;
- e) the percentages used for the Capacity and the Energy may be different ranging from zero [0%] to one hundred [100%];
- f) the Capacity bought and sold is Non-Guaranteed;
- g) the revenues that a Generator may be eligible to receive for the provision of Ancillary Services and Must Run Generation shall be assigned to the buyer; and
- h) the duration of the Contract shall be at least, two (2) years starting from the Effective Date of the Contract.

3.3.1.3. Following information shall be provided by the parties during the Contract registration process:



- a) identification of the buyer and seller;
- b) identification of the Physical Asset or assets and the corresponding Trading Points for the commercial transactions;
- c) a defined percentage of the total Energy injected into the Grid System by the seller which shall be considered to calculate the contracted quantities;
- d) number of Firm Capacity Certificates, associated with the Physical Asset involved in the Contract;
- e) declaration of percentage of the total Capacity, backed by Firm Capacity Certificates, that the Generator is selling to the buyer; and
- f) the Effective Date of the Contract and the duration of the Contract.

3.3.2. CAPACITY AND ASSOCIATED ENERGY SUPPLY CONTRACTS

3.3.2.1. The Standardized Capacity and Associated Energy Supply Contract is relatively similar to the Generation Following Supply Contracts, but it may also be used by BPCs. In a Standardized Capacity and Associated Energy Supply Contract, the seller may sell:

- a) a defined percentage of the Capacity of the Physical Asset or assets; and
- b) a defined percentage of the Energy injected into the Grid System.

3.3.2.2. This Contract shall have, *inter alia*, the following characteristics:

- a) the seller either may be a Generator or an Electric Power Trader and the buyer either may be an Electric Power Supplier, an Electric Power Trader or a BPC;
- b) the Contract shall be associated with a Physical Asset or group of Physical Assets, clearly identified;
- c) the amount of Energy bought and sold shall be a defined percentage of all the Energy injected into the Grid System by the associated Generation Plant at each Trading Period;
- d) the amount of Capacity bought and sold shall be a defined percentage of the Firm Capacity Certificates issued by the Market Operator, associated with the Physical Asset;
- e) the percentages used for the Capacity and the Energy may be different ranging from zero [0%] to one hundred [100%];
- f) the Capacity bought and sold can be Guaranteed or Non-Guaranteed, as agreed by the parties;
- g) the revenues that the Generator may be eligible to receive for the provision of Ancillary Services and Must Run Generation may be assigned to the buyer or the seller, as per information provided by the parties to the Market Operator during Contract registration process; and
- h) the duration of the Contract shall be, at least, two (2) years starting from the Effective Date of the Contract.

3.3.2.3. Following information shall be provided by the parties during the Contract registration process:

- a) identification of the buyer and seller;
- b) identification of the Physical Asset or assets and the corresponding Trading Points for the commercial transactions;
- c) a defined percentage of the total Energy injected into the Grid System by the seller which

shall be considered to calculate the contracted quantities;

- d) number of Firm Capacity Certificates, associated with the Physical Asset involved in the commercial transaction;
- e) declaration of percentage of the total Capacity, backed by Firm Capacity Certificates, that the Generator is selling to the buyer; and
- f) declaration whether the Capacity sold and bought shall be considered as Guaranteed or Non-Guaranteed;
- g) declaration regarding assigning the revenues that the Generator may be eligible to receive for the provision of Ancillary Services and Must Run Generation to the buyer or the seller; and
- h) the Effective Date of the Contract and the duration of the Contract.

3.3.3. LOAD FOLLOWING SUPPLY CONTRACTS

3.3.3.1. In a Standardized Load Following Supply Contract, the seller may sell all the Energy and Capacity which may be withdrawn by the buyer at a set of pre-defined Trading Points. The seller shall assume complete responsibility for the obligations of the buyer in the Balancing Mechanisms for Energy and Capacity, as well as for the Capacity Obligations imposed on the buyer.

3.3.3.2. This Contract shall have, *inter alia*, the following characteristics:

- a) the seller may be a Generator, a Competitive Supplier or an Electric Power Trader;
- b) the buyer may be a Competitive Supplier, an Electric Power Trader or a BPC, and the Trading Points in such a Contract shall be demand points where the Energy always flow from the seller side to the buyer side;
- c) The Contract shall be associated with a set of clearly identified Trading Points. This type of Contract shall not necessarily be associated with a Physical Asset or group of Physical Assets;
- d) the amount of Energy bought and sold is the total Energy taken by the buyer, at each Energy Trading Period, at all the identified Trading Points;
- e) the amount of Capacity bought and sold is the total Capacity used by the buyer, at any Capacity Trading Period, aggregated over all the identified Trading Points;
- f) the Capacity bought and sold is Guaranteed Capacity;
- g) the revenues that the seller may be eligible to receive for the provision of Ancillary Services and Must Run Generation, shall be retained by the seller; and
- h) the duration of the Contract is, at least, two (2) years starting from the Effective Date of the Contract.

3.3.3.3. Following information shall be provided by the parties during the Contract registration process:

- a) identification of the buyer and seller;
- b) the effective date and duration of the Contract;
- c) identification of the Trading Points involved in the transactions;
- d) number of Firm Capacity Certificates that the seller may assign to the buyer to back the contracted quantities, which shall not be lower than the value indicated in 3.3.3.3.e). The status of these Firm Capacity Certificates will be changed to "Blocked" and they cannot

be used by the seller to back any other Capacity transaction until such certificates are unblocked in accordance with the provisions of this Code.

- e) maximum value of the demand aggregated over all the Trading Points of the buyer in the System Peak Hours of the last year. This value shall be:
 - e.1. certified by the Metering Service provider; or
 - e.2. certified by the Distribution Licensee, in case the Metering Service Provider does not have historical values at one or more Trading Points; or
 - e.3. a formal declaration of the buyer, stating its best estimate of the maximum value of the aggregated demand, in case neither the Metering Service Provider nor the Distribution Licensee are able to certify such value or do not provide the certified values within a reasonable time.

3.3.4. FINANCIAL SUPPLY CONTRACT WITH FIXED QUANTITIES

3.3.4.1. In a Standardized Financial Supply Contract with Fixed Quantities, the seller may sell defined quantities of Energy and/or Capacity at each Energy and/or Capacity Trading Period.

3.3.4.2. This Contract shall have, *inter alia*, the following characteristics:

- a) the seller and buyer shall be enrolled as Market Participants;
- b) all or a specific group of Trading Points of each Market Participant are involved in the commercial transaction;
- c) the amount of Energy bought and sold at each Energy Trading Period shall be a fixed value, expressed in MWh. The fixed values for the Energy bought and sold may be modified during the duration of the Contract, according to the procedure specified in Section 3.5.6;
- d) for Settlement of Imbalances in the Balancing Mechanism for Energy, the Energy bought and sold at each Energy Trading Period shall be:
 - d.1. considered to be sold by the seller, regardless it has been produced by the seller or not;
 - d.2. considered to be bought by the buyer, regardless it has been used (consumed) by the buyer or not;
- e) the amount of Capacity bought and sold at each Capacity Trading Period shall be a fixed value, expressed in MW, backed by Firm Capacity Certificates. The fixed values for the Capacity bought and sold shall not be modified during the duration of the Contract except where the number of Firm Capacity Certificates of the seller are reduced after review or renewal of the Firm Capacity Certificate;
- f) the Capacity bought and sold may be "Guaranteed Capacity" or "Non-guaranteed Capacity", as may be agreed between the parties;
- g) for settlement of Imbalances in the Balancing Mechanism for Capacity, the Capacity bought and sold at each Capacity Trading Period shall be:
 - g.1. Considered to be sold by the seller and procured by the buyer in full, regardless the actual availability of the Physical Assets involved in the Firm Capacity Certification if the transaction has been informed as "Guaranteed Capacity"; or
 - g.2. Considered to be sold by the seller and procured by the buyer, conditional to the actual availability of the Physical Assets involved in the Firm Capacity Certification, if the transaction has been informed as "Non-guaranteed Capacity";



- h) the revenues that the seller may be eligible to receive for the provision of Ancillary Services and Must Run Generation, shall be retained by the seller; and
- i) the duration of the Contract shall be at least, two (2) years starting from the Effective Date of the Contract.

For the avoidance of doubt, in the case the seller is a Generator, the registration of a Financial Supply with Fixed Quantities Standardized Contract with the Market Operator does not grant any Self-dispatch prerogative to the involved Generator.

3.3.4.3. Following information shall be provided by the parties during the Contract registration process:

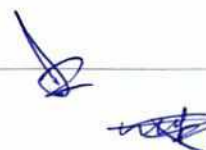
- a) identification of the buyer and seller;
- b) Effective Date of the Contract and total duration of the Contract
- c) amount of the Energy sold and bought by the parties, at each Energy Trading Period, for the complete duration of the Contract;
- d) amount of the Capacity sold and bought by the parties, at each Capacity Trading Period, for the complete duration of the Contract;
- e) identification of the Firm Capacity Certificates that the seller sells to the buyer to back the Capacity transaction, at each Capacity Trading Period;
- f) explicit indication that the bought and sold Capacity shall be considered Guaranteed or Non-Guaranteed; and
- g) a declaration whether the amounts of Energy bought and sold, as per clause 3.3.4.3.c) shall be considered for the whole duration of the Contract or they can be periodically adjusted according to the provisions of Section 3.5.6.

3.4. CUSTOMIZED CONTRACTS

3.4.1.1. A Customized Contract may be bilaterally agreed between a buyer and a seller for buying and selling of Energy and/or Capacity as per terms and conditions agreed between the parties.

3.4.1.2. For registration of a Customized Contract with the Market Operator, the following requirements shall be fulfilled:

- a) the duration of the Contract is, at least, two (2) years starting from the effective date of the Contract.
- b) the Contract incorporates the mandatory clauses as provided in Sub-Section 3.1.2 or, alternatively, a signed declaration is provided by both parties to the Market Operator stating that such clauses have been incorporated into the Contract;
- c) the Energy bought and sold between the parties is in accordance with the requirements of Sub-Section 3.4.2;
- d) the Capacity bought and sold between the parties is in accordance with the requirements of Sub-Section 3.4.3; and
- e) the parties shall provide all the information required by the Market Operator to ensure that the contracted quantities can be properly settled in both the Energy and Capacity Balancing Mechanisms.



3.4.2. CONTRACTS INVOLVING ENERGY TRANSACTIONS

3.4.2.1. The contracted quantities of Energy agreed between the Market Participants through a Customized Contract shall be clearly specified for each Energy Trading Period.

3.4.2.2. The contracted quantities of Energy shall be specified as:

- a) a fixed quantity, expressed MWh, for each Energy Trading Period; or
- b) a percentage of Energy, injected or withdrawn at a registered Trading Point (either purchased or sold), for each Energy Trading Period; or
- c) any other formula that clearly specifies the calculation of the contracted quantities and the Market Operator is provided with, before the Settlement, all the necessary data for the calculation of the contracted quantities.

3.4.2.3. The contracted quantities of Energy shall not be conditional upon any event or parameters which are not explicitly provided for in this Code.

3.4.2.4. For the avoidance of doubt, Energy transactions which involves a fixed quantity of Energy which should be produced by a pre-defined Physical Asset or group of Physical Assets (Self-dispatch), are not allowed in the CTBCM, unless explicitly permitted in this Code.

3.4.3. CONTRACTS INVOLVING CAPACITY TRANSACTIONS

3.4.3.1. The contracted quantities of Capacity agreed between the Market Participants through a Customized Contract shall be clearly specified for each Capacity Trading Period.

3.4.3.2. All Capacity transactions in the CTBCM shall be backed by Firm Capacity Certificates issued by the Market Operator.

3.4.3.3. The Capacity transactions shall be specified as:

- a) a fixed quantity, expressed in MW for each Capacity Trading Period; or
- b) a defined percentage of the number of Firm Capacity Certificates or Capacity associated with a clear identification of the Physical Assets involved or a formula to calculate such percentage/quantity:

3.4.3.4. The Firm Capacity Certificates used to back the Capacity transaction shall be either:

- a) transferred from the seller to the buyer, or
- b) changed their status to "Blocked",

depending on the type of Contract agreed in the transaction.

3.4.3.5. The contracted quantities of Capacity shall not be conditional upon any event or parameters which are not explicitly provided for in this Code.

3.4.4. INFORMATION TO BE PROVIDED FOR CUSTOMIZED CONTRACTS

3.4.4.1. Following information shall be provided by the parties during the registration process of a Customized Contract:

- a) identification of the buyer and seller;
- b) the effective date and total duration of the Contract;



- c) identification of Trading Points;
- d) amount of the Energy sold and bought by the parties, during each Energy Trading Period, for the complete duration of the Contract, or provide a formula along with relevant information that clearly specifies the calculation of the contracted quantities;
- e) amount of the Capacity sold and bought by the parties, during each Capacity Trading Period, for the complete duration of the Contract, or provide a formula along with relevant information that clearly specifies the calculation of the contracted quantities;
- f) identification of the Firm Capacity Certificates that the seller sells to the buyer to back the Capacity transaction, during each Capacity Trading Period.
- g) explicit declaration that the bought and sold Capacity shall be considered Guaranteed or Non-Guaranteed;
- h) if applicable, explicit declaration who will be eligible for revenues associated with provision of Must Run Generation and Ancillary Services;
- i) a declaration whether the amounts of Energy bought and sold, as per clause 3.3.4.3.c) shall be considered for the whole duration of the Contract or these amounts may be periodically adjusted as per provisions of Sub-Section 3.5.6.

3.4.4.2. During the registration process, the Market Operator may require any other information it deems necessary, with adequate justification, in order to assess conformity of the Contract with the provisions of this Code. Such information may include copies of parts, sections or clauses of the signed Bilateral Contract, excluding price or other commercially sensitive information provided however that it will be decided solely by the Market Operator whether certain information is commercially sensitive or not.

3.4.4.3. In case of any dispute between the Market Operator and the Market Participant with regards to provision of information required in 3.4.4.2 above, the dispute will be settled in accordance with the dispute resolution mechanism provided in this Code.

3.5. CONTRACT REGISTRATION

3.5.1. THE CONTRACT REGISTER

3.5.1.1. The Market Operator shall organize and maintain a register of the Energy and Capacity sold and purchased in Contracts, along with the information submitted by the Market Participants provided that the Contract Register shall not contain any price or commercially sensitive information of the Market Participants. The purpose of the Contract Register shall be:

- a) determination of quantities purchased and sold in the Balancing Mechanisms for Energy and Capacity;
- b) keeping record of contracted quantities of Energy and Capacity in order to perform the Settlement process;
- c) verification of compliance with the Capacity Obligations.

3.5.1.2. The Contract Register shall record the following information for each Contract:

- a) details of the contracting parties;
- b) duration and effective date of the Contract;

- c) type of Contract (Standardized or Customized);
- d) for Standardized Contracts:
 - d.1. the type of Standardized Contract; and
 - d.2. the information required in sub-Sections 3.3.1, 3.3.2, 3.3.3, or 3.3.4, as the case may be.
- e) For Customized Contracts, the information required in sub-Section 3.4.4.

3.5.1.3. The Market Operator shall update the Contract Register in case of:

- a) revision of amount of the contracted Energy under sub-Section 3.5.6;
- b) modification of a registered Contract; or
- c) termination of a registered Contract.

3.5.2. APPLICATION FOR CONTRACT REGISTRATION

3.5.2.1. Each Market Participant shall request the Market Operator for registration of each Contract it has signed for buying and selling of Energy and/or Capacity as per mechanism defined in this Code.

3.5.2.2. The Market Operator shall prepare and publish on its Website a form for Contract Registration specifying the requisite information for registration of a new Contract or modifications of a registered Contract, in accordance with this Code.

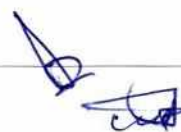
3.5.2.3. The Market Operator shall make a CCOP specifying the following for registration of a Contract in accordance with this Code :

- a) The detailed information to be provided by the Market Participants for all types of Contracts
- b) The documents to be furnished by the Market Participants for all types of Contracts
- c) Specific information and documents required for each type of Contract;
- d) The Contract Registration application form;
- e) The checks and verifications to be performed;
- f) The Contract registration, modification and de-registration procedure; and
- g) Detailed procedure for registration of the Legacy Contracts after its commercial allocation.

3.5.3. PROCESSING THE CONTRACT REGISTRATION APPLICATION

3.5.3.1. The parties to a Contract may submit a joint application for registration of a new Contract, or modification thereof, duly signed by the authorized representatives of both the parties.

3.5.3.2. Within three [3] Business Days of receipt of application for Contract Registration, the Market Operator shall provide acknowledgement thereof.



3.5.3.3. The Market Operator shall review the application for Contract registration and verify whether it is in accordance with this Code and the relevant CCOP, performing the checks and verifications it deems appropriate. The Market Operator may request the applicants for additional information during the verification process and the applicants shall be required to submit the information within the specified time.

3.5.3.4. Within fifteen [15] Business Days of receipt of an application and subject to provision of requisite additional information pursuant to Clause 3.5.3.3 above, the Market Operator shall inform the applicants, whether:

- a) the application for Contract registration is not in accordance with any of the requirements of this Code as provided in Clause 3.5.3.6 below or the relevant CCOP and the Contract may not be registered; or
- b) the application for Contract Registration complies with the requirements of this Code and the Contract may be registered subject to provision of the requisite Security Cover and Guarantee Amount according to the provisions of Chapter 13.

3.5.3.5. Where an applicant fails to provide additional information or the requisite Security Cover and Guarantee Amount within the specified time or a maximum of 3 months, the application shall automatically lapse, however, the applicants may reapply to the Market Operator after fulfilling all the requirements.

3.5.3.6. The Market Operator may reject an application for registration of a Contract, where:

- a) any of the parties to the Contract is not a Market Participant, except explicitly exempted from enrolment as Market Participant as per Clause 2.1.1.3.
- b) The application contains discrepancies or conflicting information, and the parties have failed to rectify such discrepancies as required by the Market Operator, pursuant to Clause 3.5.3.3;
- c) the Contract is in conflict with another registered Contract by one or both of the parties;
- d) the Contract is a Customized Contract and is not in accordance with the requirements set out in this Code;
- e) the Contract deals with a Capacity transaction and the seller does not own the necessary Firm Capacity Certificates to support the transaction; or
- f) the Contract does not pass one or more of the verifications and checks provided in the relevant CCOP.

3.5.4. CONTRACT REGISTRATION

3.5.4.1. After receipt of the approved form and amount of the Security Cover and Guarantee Amount, the Market Operator shall:

- a) register the Contract into the Contract Register, within two [2] Business Days;
- b) inform both parties that the Contract has been registered, and the date thereof.

3.5.4.2. For settlement purposes, the Contract shall become effective:

- a) at the date provided by the parties; or
 - b) At 0:00 a.m. of the day following the registration date of the Contract in the Contract Register,
- whichever is later.

3.5.5. DISPUTE RESOLUTION

- 3.5.5.1. Any party of the Contract aggrieved by any decision of the Market Operator including a decision to reject the registration of its Contract pursuant to Clause 3.5.3.6, may have recourse to the Dispute resolution procedures set out in Chapter 14.

3.5.6. MODIFICATION OF THE CONTRACT AND THE CONTRACT REGISTER

- 3.5.6.1. The Market Participants may modify a registered Contract without requiring de-registration of a Contract, however, such modification shall be limited only to the extent of contracted quantities of Energy or Capacity; or allocation of Must Run Generation or Ancillary Service revenues; or adding or deleting Trading Points. It is clarified that the contract type shall remain the same.
- 3.5.6.2. In case of a modification of a registered Contract as provided above, the parties shall inform the Market Operator on a form prepared for this purpose within five business days of modification and not later than five Business Days prior to the date when the Market Operator shall initiate the calculation for the Monthly or Yearly Settlement process. For the avoidance of doubt, the Contract shall be enforceable for the purposes of settlement by the Market Operator from the date of registration of modification with the Market Operator or any other later date as agreed in the Contract modification.
- 3.5.6.3. Within two [2] Business Days of receipt of a request for modification of a registered Contract, the Market Operator shall send a written acknowledgement thereof.
- 3.5.6.4. The Market Operator shall review the modification and verify whether it conforms with the provisions of this Code and the relevant CCOP.
- 3.5.6.5. The Market Operator may reject a request for modification, where:
- a) if applicable, any of the involved Market Participant or other party to the Contract does not own the Firm Capacity Certificates to support the required modification;
 - b) allowing the modification, may result in non-compliance with the Capacity Obligations of one or both Market Participants;
 - c) the registered Security Cover and Guarantee Amount of one or both involved Market Participants is not sufficient to guarantee the eventual transactions in the BME or BMC, as applicable;
 - d) the requested modification in the registered Contract conflicts with other Contracts, already registered, by one or both of the parties.
- 3.5.6.6. In the case the Market Operators accepts the modification in the registered Contract, it shall:
- a) record the modification in the Contract Register and if applicable, also adjust the Firm Capacity Register accordingly;
 - b) immediately inform the parties about the modification in the Contract Register.
- 3.5.6.7. For the Settlement purposes, the modification in the registered Contract shall become effective:
- a) at the date provided by the parties; or
 - b) At 0:00 a.m. of the day following the registration of the modification in the Contract Register pursuant to Clause 3.5.6.6;

whichever is later.

3.6. CONTRACTS DEREGISTRATION OR SUSPENSION

3.6.1. REASONS FOR DEREGISTRATION AND SUSPENSION

3.6.1.1. The Market Operator may deregister a Bilateral Contract from the Contract Register in the following cases:

- a) a Bilateral Contract has reached Contract Termination Date; or
- b) both parties agree on earlier termination of the Contract for a justifiable reason with prior approval of the Market Operator:

Provided that if the Market Operator does not approve termination of the Contract, the obligations of parties as registered by the Market Operator shall remain intact notwithstanding any termination of Contract by the parties; or

- c) one of the parties for which it is mandatory to be a Market Participant ceases to be a Market Participant, as per Termination Order issued by the Market Operator, according to the provisions of sub-Section 16.2.3.

3.6.1.2. The Market Operator may suspend the Bilateral Contract if one of the parties for which it is mandatory to be a Market Participant is suspended as Market Participant, according to the provisions of Sub-Section 16.2.2, in cases the remedial action taken by the Market Operator is to suspend a Contract.

3.6.2. DEREGISTRATION DUE TO CONTRACT TERMINATION

3.6.2.1. Where a Contract is about to reach its agreed Termination Date, the Market Operator shall require the parties to take necessary actions as detailed below as well as inform them about the actions the Market Operator is going to take. The parties shall be informed:

- a) at least six (6) months prior to the Contract Termination Date, in case one of the parties is a BPC; or
- b) at least three (3) months prior to the Contract Termination Date in all other cases.

3.6.2.2. Where one of the parties to the registered Contract is a BPC, regardless such BPC is a Market Participants or not, the Market Operator shall require such BPC to inform the Market Operator, at least 60 days prior to the Contract Termination Date, about its intention to:

- a) Continue or renew the existing registered Contract, if it is decided by the BPC to continue the existing registered Contract, it shall

submit jointly with the selling party an application for extension in the term of the Contract and to make requisite changes in the Contract Register at least five (5) Business Days prior to the Contract Termination Date by following the procedures set out in sub-Section 3.5.6; Distribution Network

- b) Sign a new Bilateral Contract with another Market Participant, in which case the BPC is required to inform the Market Operator

by submitting an application jointly with the selling party for Contract Registration at least fifteen (15) Business days prior to the Contract Termination Date by following the procedure set out in Section 3.5;

- c) Distribution NetworkNot to sign a new Bilateral Contract and start receiving its supply from the Supplier of Last Resort from the Contract Termination Date, in which case the BPC is required to inform the Market Operator that it will continue to purchase electric power from the concerned Supplier of Last Resort. Distribution Network

3.6.2.3 In case information as referred to in 3.6.2.2 above is not received from the BPC sixty days prior to expiry of its Bilateral Contract, the MO shall issue a notice to the BPC and the Supplier of Last Resort within a period of seven days after the date of sixtieth day prior to expiry of its Bilateral Contract, informing them that the BPC must convey its option to the MO with a copy to the concerned Supplier of Last Resort as required above within a period of fifteen days. In the event the BPC does not convey its option, it shall be considered that BPC is interested in becoming a consumer of the Supplier of Last Resort and accordingly the Supplier of Last Resort shall sign supply contract with the BPC and shall be responsible to recover any costs and tariff associated with supply of electric power to such BPC after the expiry of the Bilateral Contract.

3.6.3. DEREGISTRATION DUE TO EARLY CONTRACT TERMINATION

- 3.6.3.1. Where both parties have mutually agreed to terminate a Contract at an earlier date than the date communicated to the Market Operator during the registration of the Contract (Early Contract Termination), they shall inform the Market Operator accordingly, at least 20 Business Days prior to the agreed termination date, requesting deregistration of the Contract.
- 3.6.3.2. The Market Operator shall prepare and publish on its website a form for the purposes of deregistration of a Contract due to Early Contract Termination specifying the relevant information to be provided by the parties. The application for Contract deregistration shall be signed by both the parties to the Contract.
- 3.6.3.3. Within three [3] Business Days of receipt of an application, the Market Operator shall acknowledge the receipt thereof and, in case one of the parties is a BPC, the Market Operator shall require the BPC to register a new Contract, failing which the BPC shall be transferred to the Supplier of Last Resort as per Clause 3.6.5.1.
- 3.6.3.4. The Market Operator shall assess whether the application for deregistration of the Contract is in accordance with this Code and the relevant CCOP including the consequences set out in Sub-Section 3.6.5.
- 3.6.3.5. Within ten [10] Business Days of receipt of the application, the Market Operator shall inform the parties whether:
- a) the application is in accordance with the provisions of this Code and the relevant CCOP and the Contract may be deregistered at the agreed date; or
 - b) the application is in accordance with the provisions of this Code and the relevant CCOP and the Contract may be deregistered subject to fulfilment of certain additional requirements by one or both of the parties as per Sub-Section 3.6.5; or
 - c) the application is not in accordance with provisions of this Code and the relevant CCOP, therefore, the Contract may not be deregistered accompanied with reasons thereof.
- 3.6.3.6. The Market Operator may reject an application for deregistration, where:
- a) the application was submitted, without the consent of one of the parties.

- b) the application contains discrepancies or conflicting information;
- c) the Contract requested to be deregistered conflicts with other Contracts, already registered, by one or both of the parties;
- d) the request does not pass one or more of the verifications and provided in the relevant CCOP.

3.6.4. DEREGISTRATION OR SUSPENSION DUE TO MARKET PARTICIPANT TERMINATION OR SUSPENSION

- 3.6.4.1. Where the Market Operator decides to suspend a Market Participant after following the procedure set out in Sub-Section 16.2.2 and issues a Suspension Order, the Market Operator may also suspend or deregister the relevant registered Contracts for such period as specified in the Suspension Order.
- 3.6.4.2. Where the Market Operator decides to terminate a Market Participant after following the procedure set out in Sub-Section 16.2.3, and issues a Termination Order, all the registered Contracts of such Market Participant shall be deregistered with effect from the date of the Termination Order.
- 3.6.4.3. If applicable, within the next three [3] Business Days after deregistration or suspension of the Contracts referred to in Clauses 3.6.4.1 or 3.6.4.1, the Market Operator may inform one or more parties to the relevant Contracts about their obligations which they are required to fulfil as a result of deregistration or suspension of the Contracts and the timeframe thereof.

3.6.5. ACTIONS TAKEN AFTER CONTRACT DEREGISTRATION OR SUSPENSION

- 3.6.5.1. Where supply of electric power to a BPC is stopped, either partially or fully, due to deregistration or suspension of a Contract, excluding the cases as given in Sub-Sections 3.6.2 and 3.6.3 above, the Market Operator shall:
 - a) for all BPCs which are not enrolled as Market Participants:
 - a.1. inform the BPC to arrange its supply of electric power from another Competitive Supplier Electric Power Supplier within [10] days and the Energy withdrawn during the interim period shall be considered to be supplied by the Supplier of Last Resort;
 - a.2. inform the Supplier of Last Resort accordingly; and
 - a.3. in case of suspension of a Contract, then upon withdrawal of the Suspension Order, transfer the supply of the BPC to the respective Competitive Supplier on the date of lifting of the Suspension Order.
 - b) for all BPCs which are Market Participants:
 - b.1. inform the BPC and require it to register new Contracts for purchase of electric power in order to comply with its Capacity Obligations within a specified timeframe;
 - b.2. inform the BPC that the Energy withdrawn during the interim period will be settled in the Balancing Mechanism for Energy and it has to provide the required amount of Security Cover within a specified timeframe.
- 3.6.5.2. Failure of a BPC to register a new Contract or to provide the requisite Security Cover, pursuant to Clause 3.6.5.1.b), shall constitute an Event of Default and shall be dealt with under Sub-Section 16.2.1.



- 3.6.5.3. The BPC shall be liable to pay all applicable charges for the supply of electric power by the Supplier of Last Resort under Clause 3.6.5.1, with effect from the date of deregistration or suspension of the Contract.
- 3.6.5.4. After deregistration of a Contract, the Market Operator shall update the Firm Capacity Register accordingly.
- 3.6.5.5. Immediately after the Firm Capacity Register update, the Market Operator shall verify compliance with the Capacity Obligations by all relevant Market Participants. In case a Market Participant, due to the re-assignment of the Firm Capacity Certificates, is not complying with its Capacity Obligations, the Market Operator shall require such Market Participants to resolve the non-compliance situation by contracting additional Capacity or installing additional Generation, within a specified timeframe. The Market Operator may not register any new Contract, other than Contracts for purchase of Capacity of the relevant Market Participant or BPC, till the time non-compliance situation is resolved.
- 3.6.5.6. Prior to deregistration of a Contract, at the time of evaluation of the consequences of such deregistration, the Market Operator shall recalculate the amount of Security Cover and Guarantee Amount which shall be provided by any of the parties to the Contract or other Market Participants affected by such deregistration. In case, the recalculated amount is higher than the amount registered in the Security Cover Register or the Settlement Guarantee Fund, the Market Operator shall require the relevant Market Participants to increase the amount of Security Cover and Guarantee Amount within a specified time pursuant to the provisions of Chapter 13. The Market Operator may delay the deregistration of a Contract until the recalculated Security Cover and Guarantee Amount is actually received.
- 3.6.5.7. Regardless of deregistration of a Contract, the parties shall remain liable for any outstanding obligations which accrued prior to such deregistration.

3.7. COMMERCIAL ALLOCATION OF LEGACY CONTRACTS

3.7.1. COMMERCIAL ALLOCATION OF LEGACY CONTRACTS

- 3.7.1.1. All the rights and obligations arising from the Legacy Contracts, including the payments to or by the Generators, shall be commercially allocated to EX-WAPDA DISCOs or to K-Electric in their activity as Suppliers of Last Resort.
- 3.7.1.2. All the Energy provided under the Legacy Contracts, the relevant Firm Capacity Certificates, the Available Capacity of each Generator and any amounts payable for the provisions of Ancillary Services or Must Run Generation shall be commercially allocated to the EX-WAPDA DISCOs or to K-Electric as Suppliers of Last Resort as per the Allocation Factors set out in Table 8 in Clause 18.2.5.1.
- 3.7.1.3. The Allocation Factors shall be revised as per the National Electricity Policy and the same shall be used by the Market Operator for Settlement purposes and verification of compliance with Capacity Obligations.

3.7.2. REGISTRATION OF COMMERCIALY ALLOCATED LEGACY CONTRACTS

- 3.7.2.1. Before CMOD, the Market Operator shall register all Legacy Contracts in the following manner:



- a) each Legacy Contract shall be classified according to the types of Contracts as set out in Sub-Section 3.2.2 and Section 3.3.
- b) each Legacy Contract shall be registered with the Market Operator as if there were different Contracts with each EX-WAPDA DISCO and K-Electric as Suppliers of Last Resort.
- c) When it is approved to modify the Allocation Factors, the Contract Register and Table 8 in Clause 18.2.5.1 shall be updated accordingly.

3.7.3. OTHER EXISTING CONTRACTS AT CMOD

- 3.7.3.1. The bilateral contracts, other than Legacy Contracts, which were executed by the Market Participants before CMOD shall be registered with the Market Operator according to the provisions of Section 3.5 within one [1] year after the CMOD.

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Chapter 4. COMMERCIAL METERING SYSTEM

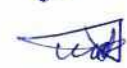
4.1. COMMERCIAL METERING REQUIREMENTS

4.1.1. GENERAL REQUIREMENTS

- 4.1.1.1. All Metering Points shall be equipped with a Commercial Metering System which complies with the provisions of this Code, the Grid or Distribution Code, as applicable.
- 4.1.1.2. Metering Points shall, *inter alia*, include interface between:
- a) a Market Participant and a Transmission Licensee;
 - b) a Market Participant and a Distribution Licensee;
 - c) two different Market Participants;
 - d) a Transmission Licensee and a Distribution Licensee;
 - e) two different Transmission Licensees;
 - f) two different Distribution Licensees;
 - g) a Transmission Licensee or Distribution Licensee, and authorized entities from other countries, involved in international power trade;
 - h) a Transmission Licensee or Distribution Licensee, and companies or entities located in territories where the applicability of the Act is not extended;
 - i) a Distribution Licensee and Distribution Network Connected Generation; and
 - j) a Generator and the Transmission or Distribution Network where the Generator is selling electric power through a Legacy Contract or is owned by a Market Participant, who also owns the Transmission or Distribution Network, and the Energy or Capacity needs to be measured at such point for proper implementation of this Code.

4.1.2. RESPONSIBILITIES OF METERING SERVICE PROVIDERS

- 4.1.2.1. The responsibility for performing the meter reading at each Metering Point, performing the validity checks and transferring the information thereof to the Market Operator shall be assigned to the Metering Service Providers.
- 4.1.2.2. Each Metering Point shall be assigned to only one Metering Service Provider.
- 4.1.2.3. Every Metering Service Providers shall be enrolled with the Market Operator as a Service Provider.
- 4.1.2.4. A Metering Service Provider authorised/permitted or registered by the Authority , in addition to its responsibilities assigned under the Grid Code and the Distribution Code, shall:
- a) install Secured Metering System at all Metering Points assigned to it;
 - b) create and maintain a central register and ensure proper functioning of all the Metering Points for which it is responsible;
 - c) ensure timely execution of verification, calibration, and technical inspection of the Commercial Metering System;
 - d) collect metering results from all the meters for which it is responsible.



- e) perform the central aggregation of metering data and determine the accuracy thereof;
- f) develop procedures for restoration, validation or replacement of the metering data;
- g) set up communication channels for providing remote reading of the metering data;
- h) submit the aggregated and validated metering data to the Market Operator in accordance with this Code;
- i) create, maintain and ensure proper functioning of the electronic database of the metering data;
- j) ensure the storage and archiving of the metering data and the data regarding technical conditions of the Commercial Metering System, in appropriate electronic databases.

4.1.3. REGISTRATION OF METERING SERVICE PROVIDERS WITH THE AUTHORITY

- 4.1.3.1. If required under the provisions of the Act and applicable regulations of the Authority, each Metering Service Provider shall be registered with the Authority. However, the existing Transmission Licensees shall not require additional registration if they have already been granted this function under their Transmission License.

4.2. **METER READING AND DATA COLLECTION**

4.2.1. GENERAL

- 4.2.1.1. Capacity taken from the Grid and Energy values used for the Settlement of the Market shall be measured through the Commercial Metering System, operated by the Metering Service Provider.

- 4.2.1.2. Collection of metering data from the Metering Points shall be carried out:

- a) on daily basis, through the Secured Metering System (SMS);
- b) in case of failure of the Secured Metering System, on a weekly basis, on the first Business Day of each week for values of the previous week, as provided under Sub-Section 18.2.3.

- 4.2.1.3. NTDC, appointed as MSP under Clause 18.2.1.1, shall develop and submit to the CCRP for approval, a CCOP for meter reading and data collection, in accordance with the Grid Code and this Code. The CCOP may include:

- a) The details of the metering system
- b) Details of communication channels between the meters and the database of the MSP and the transfer of such data to the Market Operator
- c) Procedure for addition, deletion and updating of the Metering Points
- d) Metering data collection, intervals, and processing
- e) Collecting various labels attached to the data being collected and marking it as per the labels
- f) Procedure for verification of the collected information
- g) Detailed actions in case of invalidation of data, substitutions and estimations
- h) Determination of best value for metering
- i) Transferring of data to the Market Operator



4.2.1.4. The CCOP made by NTDC in accordance with Clause 4.2.1.3 above shall be applicable on all Metering Service Providers

4.2.1.5. The Metering Service Provider shall submit a certificate to the Market Operator to the effect that the Commercial Metering System installed at the Metering Points complies with the requirements of this Code and the Grid Code. The Metering Service Provider shall organize and keep complete and accurate record containing all the information regarding the installation, commissioning and testing of the metering systems.

4.2.2. READING AND COLLECTION OF DATA THROUGH THE SECURED METERING SYSTEM

4.2.2.1. The Metering Service Provider shall implement a Secured Metering System, to collect and process all the commercial metering data from the relevant Metering Points, and electronically transfer the metering information to the Market Operator.

4.2.2.2. The Metering Service Provider shall perform Automatic Meter Reading of the values registered at all the Metering Points integrated into its Secured Metering System, every day, between 00:00:00 and 23:59:59 on the following day (D+1), or any other shorter period that may be provided in the CCOP.

4.2.2.3. The Secured Metering System shall collect information from all Meters located at a Metering Point, including the Main Meter and, if applicable, the Back-up Meter, according to the provisions of the Grid Code.

4.2.2.4. The information collected by the Secure Metering System shall include, *inter alia*, the following:

- a) half-hourly values of active Energy and, if required, the reactive Energy, along with time stamps;
- b) accumulated values of active Energy and, if required, the reactive Energy, for the previous day;
- c) alarms and event logs generated by the Meters;
- d) accuracy and other qualifiers of the values recorded if the Meter generate such kind of information;
- e) necessary time and date stamps.

4.2.2.5. After analysing and verification of the completeness and reliability of the values obtained, the Metering Service Provider shall determine accuracy and completeness of such values and shall mark these values either as "complete and accurate", "incomplete but accurate", "inaccurate" or "no data" according to the procedure set out in the relevant CCOP.

4.2.3. ACTIONS IN CASE OF FAILURE TO OBTAIN DATA

4.2.3.1. In case of failure to obtain the complete metering data from a Metering Point, the Metering Service Provider must promptly take all necessary steps to obtain such data, in particular identifying and removing the causes of failure to obtain data and get all the requisite information.



- 4.2.3.2. In case of failure of the data collection and transmission equipment or the communication channels, the Metering Service Provider shall perform Electronic Local Meter Reading or Manual Local Meter Reading to obtain the values from the Metering Point as per provisions of Sub-Section 18.2.3 and the information obtained shall be marked as "complete and accurate" or "incomplete but accurate", as the case may be.
- 4.2.3.3. In case of failure of the Main Meter or the Back-Up Meter, the Metering Service Provider shall retrieve all the data from any other functional meter located at the Metering Point and mark it accordingly. The information obtained from the failed meter shall be marked as "no data".

4.3. METER READING VERIFICATIONS

4.3.1. VERIFICATIONS PERFORMED BY THE METERING SERVICE PROVIDER

- 4.3.1.1. The Metering Service Provider shall be responsible for checking the accuracy of the values obtained and shall process and validate such values, in order to:
- a) refer the values obtained from the Meter to the Metering Point by making necessary adjustments, where the Commercial Metering System is installed at a location different than the Metering Point.
 - b) perform validity checks to determine the accuracy of the values obtained from the Meters. The Metering Service Provider shall perform the validation of metering data through a series of Validation Checks which are designed to determine the coherence and plausibility of each metered value or group of metered values regardless the way such values are obtained: Automatic Meter Reading, Electronic Local Meter Reading or Manual Local Meter Reading.
- 4.3.1.2. After the verification and validation of the metering data, the Metering Service Provider shall classify each value as following:
- a) Valid: It is the value, or group of values, which pass all the Validation Checks. A Valid metered value may eventually become Invalid as a result of the analysis and evaluation of an incident, having additional information about the Metering Point or due to verifications or validations performed, at a later date.
 - b) Invalid: It is a value, or group of values, which does not pass one or more of the Validation Checks. An Invalid metered value or group of metered values may eventually become Valid as a result of further analysis performed by the Metering Service Provider.
- 4.3.1.3. The CCOP prepared under Clause 4.2.1.3 above shall also include:
- a) formulas for performing the necessary calculations to refer the values to the Metering Point pursuant to Clause 4.3.1.1.a);
 - b) the minimum set of Validation Checks that shall be performed to determine the accuracy of the metered data;
 - c) the verification and tests to classify a metered value as Valid or Invalid pursuant to Clause 4.3.1.2.

4.3.2. ACTIONS TO BE TAKEN AFTER INVALIDATION OF DATA

- 4.3.2.1. When any metered value or group of metered values is classified as "Invalid", the Metering Service Provider shall obtain new values from the Metering Point including, if required, performing Local Meter Reading.



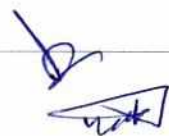
- 4.3.2.2. Where the new values obtained confirms the inadequacy of the data originally obtained or the new data still does not pass any of the Validation Checks, the Metering Service Provider shall open a Metering Incident Report and it shall proceed to test the Commercial Metering System of the relevant Metering Point.
- 4.3.2.3. If a metering problem or a failure is identified in a Main Meter during the validation process, the MSP shall forward to the Market Operator the following values for the settlement purposes:
- a) if the Metering Point has a Back-up Meter, the data obtained from the Back-up Meter and duly validated;
 - b) if the Metering Point does not have a Back-up Meter, the Energy estimated by the System Operator based on the records stored in the SCADA system and the Metering Service Provider shall request the System Operator to provide the necessary information; or
 - c) if the Metering Point does not have back-up meter and no information is available with the System Operator, an estimation of the required quantities by the Metering Service Provider, taking due consideration of any additional metering information that may be available.
- 4.3.2.4. The Metering Service Provider may substitute the metering data with estimated values, in the following cases:
- a) when a metered value, or group of metered values, have been marked as "Invalid", and it is not possible to obtain metered values which pass all the Validation Checks before the issuance date of the Preliminary Settlement Statement (temporarily substitution);
 - b) when a metered value, or group of metered values, have been labelled as "Invalid" and it is not possible, to obtain metered values which pass all the Validation Checks before the issuance date of the Final Settlement Statement (final substitution);
 - c) when the resolution of a Metering Incident Report indicates a fault in the equipment of the Commercial Metering System and it is not possible to retrieve accurate data unless the faulty equipment is replaced or repaired; and
 - d) when it is impossible to obtain data from the Commercial Metering System.

4.3.3. DATA VERIFICATION BY THE MARKET OPERATOR AND ITS SUBSTITUTION

- 4.3.3.1. The Market Operator may perform additional validation or plausibility checks on the metering information provided by the Metering Service Provider.
- 4.3.3.2. The Market Operator shall include in the Settlement Statements information regarding any issues, errors or failures identified during the verification and validation process and the substituted values used to calculate the Energy for the Settlement Statement.
- 4.3.3.3. The Market Operator shall require the Metering Service Provider to take all necessary measures to rectify the causes which led to the substitution of the metered data.

4.4. **STORAGE AND CUSTODY OF COMMERCIAL METERING DATA**

- 4.4.1.1. The Metering Service Provider shall store commercial metering data in a secured manner for at least 5 years or any other longer period required to resolve any disputes among the Market Participants.



4.4.1.2. While storing the commercial metering data, the Metering Service Provider shall consider the following aspects:

- a) Completeness of the stored data: The stored metering data shall contain all important information which may be required to restore the primary metering data.
- b) Protection of data: The stored metering data shall be protected against accidental, intentional or unintentional changes.
- c) Confidentiality of keys: Digital signature keys shall be used, kept secret and secured against any malware attacks or gaining unauthorized access.
- d) Capacity of the storage database: Enough storage capacity shall be maintained for the metering data.

4.5. COMMERCIAL METERING REPORT

4.5.1.1. Every year, a Metering Service Provider shall prepare, and submit to the Market Operator, a Commercial Metering Report.

4.5.1.2. All relevant Market Participants and Service Providers shall assist the Metering Service Provider in the preparation of the Commercial Metering Report by providing accurate information in a timely manner in relation to the relevant Metering Points.

4.5.1.3. The Commercial Metering Report shall, *inter alia*, include:

- a) list of all Metering Points which are not equipped with the requisite Commercial Metering System according to the provisions of this Code, the Grid Code or the Distribution Code, along with plans or measures to rectify this situation;
- b) problems identified in the implementation of certain metering related provisions of this Code, the Grid Code or the Distribution Code;
- c) conflicts among the Market Operator, the Metering Service Provider or Market Participants related to interpretation of provisions of this Code, the Grid Code or the Distribution Code, and the relevant CCOP;
- d) compilation of all proposals which were submitted for Amendment in this Code, the Grid Code or the Distribution Code regarding metering;
- e) any other relevant matter to identify any problems in the performance, feasibility, efficiency and design of the Commercial Metering System.



Chapter 5. BALANCING MECHANISM FOR ENERGY

5.1. BALANCING MECHANISM FOR ENERGY

5.1.1. PURPOSE

- 5.1.1.1. The purpose of the Balancing Mechanism for Energy shall be to determine, for each Market Participant, the Imbalance of Energy calculated as the difference between the Energy actually injected into or withdrawn from the Grid System at the relevant Trading Points duly adjusted for the losses in the network and the contracted quantities registered in the Contract Register of the Market Operator.

5.1.2. BALANCING PERIOD AND SETTLEMENT PERIOD

- 5.1.2.1. The Market Operator shall calculate the Imbalance of Energy on hourly basis (the Energy Balancing Period) and the results thereof shall be consolidated on monthly basis for settlement purposes (the Settlement Period).

5.1.3. REQUIRED INFORMATION

- 5.1.3.1. Every month, the Market Operator shall use the following information for the administration of the Balancing Mechanism for Energy:

- a) information provided by the Metering Service Provider for all Metering Points;
- b) if applicable, the substituted or estimated values as per Sub-Section 4.3.3;
- c) information related to contracted quantities of each Market Participant from the Contracts Register; and
- d) System Marginal Prices provided by the System Operator for each hour of the month.

- 5.1.3.2. The Market Operator shall collect, properly organize, maintain, and keep custody of all the information used for the administration of the Balancing Mechanism for Energy, which shall be kept for at least five [5] years or any other longer period as may be required in the relevant rules and regulations.

5.2. CONSIDERATION OF DISTRIBUTION LOSSES

- 5.2.1.1. For calculation of the Imbalances of Energy, it shall be considered that all transactions take place at the Transmission Network. However, if a Trading Point is located in the Distribution Network, the values obtained from such Trading Point shall be adjusted to take into account the losses in such network.

- 5.2.1.2. The adjustment, referred to in Clause 5.2.1.1 above, shall be performed at all Trading Points located in the Distribution Network where Energy is withdrawn, which shall include:

- a) BPCs enrolled as Market Participants or supplied electric power by Competitive Electric Power Suppliers;
- b) Distribution Networks connected to another Distribution Network;
- c) Export points located in the Distribution Network; and
- d) A Generator receiving back-feed Energy which is not supplied by a Supplier of Last Resort.



5.2.1.3. The adjustment provided in Clause 5.2.1.2 above shall be calculated as:

- a) Where the Trading Point is an interface of a BPC, an Export or a Generator receiving back-feed Energy which is not supplied by a Supplier of Last Resort, where the Energy is withdrawn from the network, the adjustment shall be calculated as following:

$$Adj_E_{i,d,h} = E_{MP_{i,d,h}} / (1 - DistLoss_{d,p})$$

Where:

- $Adj_E_{i,d,h}$ is the Energy at the Trading Point "i", at hour "h", located in the network of Distribution Licensee "d", adjusted to take into account losses in the Distribution Network.
 - $E_{MP_{i,d,h}}$ is the value of Energy, as considered by the Market Operator as per provisions of Chapter 4, at the Trading Point "i", located in the network of Distribution Licensee "d" at hour "h".
 - $DistLoss_{d,p}$ is a standard distribution loss coefficient of Distribution Licensee "d" for the period "p" to which the hour "h" belongs, as determined by the Authority, as per the latest Tariff Determination for the relevant Distribution Licensee.
- b) Where the Trading Point is an interconnection between two Distribution Licensees, the adjustment shall be calculated as following:

$$Adj_E_{i,d,h} = E_{MP_{i,d,h}} / (1 - DistLoss_{d,p})$$

Where:

- $Adj_E_{i,d,h}$ is the Energy at the Trading Point "i", at hour "h", located in the network of Distribution Licensee "d", adjusted to take into account losses in the Distribution Network.
 - $E_{MP_{i,d,h}}$ is the value of Energy as considered by the Market Operator, as per provisions of Chapter 4, at the Trading Point "i", located in the network of Distribution Licensee "d" at hour "h".
 - $DistLoss_{d,p}$ is a standard distribution loss coefficient of Distribution Licensee "d" for the period "p" to which the hour "h" belongs, as determined by the Authority for the relevant Distribution Licensee.
- c) For all other Trading Points, there will be no adjustment.

$$Adj_E_{i,d,h} = E_{MP_{i,d,h}}$$

Where:

- $Adj_E_{i,d,h}$ is the Energy at the Trading Point "i", at hour "h", located in the network of Distribution Licensee "d", adjusted to take into account losses in the Distribution Network.
- $E_{MP_{i,d,h}}$ is the value of Energy, as considered by the Market Operator as per provisions of Chapter 4, at the Trading Point "i", located in the network of Distribution Licensee "d" at hour "h".

5.3. CONSIDERATION OF THE TRANSMISSION LOSSES

5.3.1. CALCULATION OF THE TRANSMISSION LOSSES

- 5.3.1.1. The Metering Service Provider shall determine, on hourly basis, the quantum of losses in the Transmission Network for each Transmission Licensee being metered by it, by utilizing the metering information in accordance with Chapter 4.
- 5.3.1.2. The quantum of the losses in the Transmission Network shall be calculated individually for each Transmission Licensee as the difference between the total Energy injected into and withdrawn from its Transmission Network.
- 5.3.1.3. The quantum of the losses in the Transmission Network shall be calculated as:

$$TransLoss_{k,h}[MWh] = \sum_{\forall i \in MP_k} E_{MP_{i,k,h}}$$

Where:

- $TransLoss_{k,h}$ is the quantum of the losses in the Transmission Network of the Transmission Licensee "k" in the hour "h", expressed in MWh
 - $E_{MP_{i,k,h}}$ is the value of Energy, as considered by the Market Operator according to the provisions of Chapter 4, at the Metering Point i , corresponding to the Transmission Service Provider k in the hour "h",
 - $\forall i \in MP_k$ means all those Metering Points located at the boundaries of the Transmission Licensee k
- 5.3.1.4. Sign convention: For the application of the formula provided in Clause 5.3.1.3, the Energy recorded at each Metering Point at each particular hour shall be considered positive if it is injected into the Transmission Network of Transmission Licensee "k" and negative if it is withdrawn from such Transmission Network,. In case a Metering Point records separate values for Energy injected and withdrawn, the sign convention shall apply accordingly for each recorded value at the particular hour.
- 5.3.1.5. The losses calculated pursuant to Clause 5.3.1.3 shall be submitted to the Market Operator by each Metering Service Provider within two [2] Business Days of end of each month.

5.3.2. CALCULATION OF TOTAL DEMAND

- 5.3.2.1. The Market Operator shall determine, on hourly basis, the Total Demand by adding the total Energy withdrawn from the Transmission Network of all Transmission Licensees and the total Energy generated by Generation Units or Generation Plants or Imports connected at Distribution Network by utilizing the metering information considered by the Market Operator according to the provisions of Chapter 4.
- 5.3.2.2. The Total Demand for the whole system shall be calculated as:

$$TotDem_h[MWh] = \left(- \sum_{\forall i \in MP_{T \rightarrow D(-)}} E_{MP_{i,h}} \right) + \sum_{\forall j \in MP_{G \rightarrow D(+)}} E_{MP_{j,h}}$$

Where:

- $TotDem_h$ is the total Energy withdrawn by Market Participants in hour "h" which shall be liable to cover the losses in the Transmission Network.
- $E_{MP,i,h}$ is the Energy withdrawn (negative) from the Transmission Network, at the Metering Point "i" located at the boundary of the Transmission Network in the hour "h".
- $E_{MP,j,h}$ is the Energy injected (positive) into the Distribution Network by Distribution Network Connected Generation or Imports, at the Metering Point located at the boundary point "j" in the hour "h".
- $\forall i \in MP_{T \rightarrow D} (-)$ means all those Metering Points at the boundary between a Transmission Network and
 - a Distribution Network;
 - a BPC;
 - an Export; or
 - A Generation Plant which is receiving Back-feed Energy.

where the Energy is withdrawn from the Transmission Network (negative value according to the sign convention provided in Clause 5.3.1.4 above), during hour "h".

- $\forall j \in MP_{G \rightarrow D} (+)$ means all those Metering Points located at the boundary between the Distribution Network and Distribution Network Connected Generation or Imports where Energy is injected into the Distribution Network during the hour "h".

5.3.2.3. While applying the formula given in Clause 5.3.2.2 above, the net value shall be used in case the Energy injected and withdrawn is recorded separately by the Commercial Metering System.

5.3.3. UPLIFT COEFFICIENT

5.3.3.1. An Uplift Coefficient shall be applied to the Energy supplied to Market Participants supplying the demand which shall be calculated as.

$$Uplift_{TransLoss,h} = \frac{\sum_k TransLoss_{k,h} [MWh]}{TotDem_h [MWh]}$$

Where:

- \sum_k means the addition over all Transmission Licensees
- All other terms have the same meaning as defined above

5.3.4. ASSIGN METERED VALUES TO MARKET PARTICIPANTS

5.3.4.1. The calculation of the Energy withdrawn by a Market Participant enrolled as Electric Power Supplier or withdrawn by a BPC which is a Market Participant or an Electric Power Trader involved in Export shall be done as following:

- a) For a BPC which is a Market Participant, the Energy withdrawn values shall be calculated as follows:

$$Act_E_{mp,h} = \sum_{\forall i \in MP} Adj_E_{i,h}$$

Where:

- $Act_{E_{mp,h}}$ is the total Energy withdrawn by a BPC "mp", in hour "h".
- $Adj_{E_{i,h}}$ is the Energy, withdrawn at a Metering Point "i" by a BPC "mp", in hour "h", calculated pursuant to Clause 5.2.1.3.
- $\forall i \in MP$ means all those Metering Points through which the "BPC" has withdrawn Energy from the Grid.

- b) For a Competitive Electric Power Supplier, the Energy withdrawn values shall be calculated as the addition of the Energy withdrawn at the corresponding Metering Point of each BPC which is not a Market Participant and served by the Competitive Supplier through a Standardized Load Following Supply Contract:

$$Act_{E_{mp,h}}[MWh] = \sum_{\forall BPC_i \in MP} Adj_{E_{i,h}}$$

Where:

$Act_{E_{mp,h}}$ is the total Energy supplied by the Competitive Supplier "mp" to its BPCs, which are not Market Participants, in hour "h", in MWh;

$Adj_{E_{i,h}}$ is the Energy withdrawn by BPC "i", which is not a Market Participant and has a Standardized Load Following Supply Contract with the Competitive Supplier "mp" in hour "h", calculated pursuant to Clause 5.2.1.3.

$\sum_{\forall BPC_i \in MP}$ means the addition over all BPCs "i" which are not Market Participants and supplied by the Competitive Supplier "mp" through a Standardized Load Following Contract

- c) For Suppliers of Last Resort, the Energy withdrawn, shall be calculated through an appropriate balance of the total Energy taken by the Supplier of Last Resort from the Transmission Network or Imports minus the Energy withdrawn in its service territory by the Competitive Suppliers, Energy withdrawn in its service territory by BPCs which are Market Participant and Energy supplied to other Suppliers of Last Resort (calculated pursuant to Clause 5.2.1.3), plus the Energy injected by Distribution Network Connected Generation owned by the Supplier of Last Resort into the Distribution Network.

$$Act_{E_{mp,h}}[MWh] = \sum_{\forall i \in mp} Adj_{E_{i,h}} + \sum_{\forall j \in mp} EMP_{j,h}$$

Where:

$Act_{E_{mp,h}}$ is the total Energy withdrawn by the Supplier of Last Resort "k", in hour "h", in MWh;

$Adj_{E_{i,h}}$ is the Energy Injected/withdrawn at the Trading Point "i", which is a boundary of Supplier of Last Resort "k", in hour "h", calculated pursuant to Clause 5.2.1.3.

The Energy injected into the Distribution Network in the service territory of the Supplier of Last Resort "k" shall be considered positive and Energy withdrawn from such network shall be considered negative.

$EMP_{j,h}$ is the Energy injected/withdrawn at the Metering Point "j", which is not a Trading Point, belonging to the Supplier of Last Resort

"k", in hour "h", considered by the Market Operator in accordance with the Provisions of Chapter 4.

The Energy injected into the Distribution Network in the service territory of the Supplier of Last Resort "k" shall be considered positive and the Energy withdrawn from such network shall be considered negative. Only positive values shall be used in the calculation.

$\sum_{i \in mp}$ means the addition over all Trading Points "i" which are located at the boundaries of the Supplier of Last Resort "mp".

$\sum_{j \in mp}$ means the addition over all Metering Points which are not Trading Points, which are located in the service territory of the Supplier of Last Resort "mp".

d) For Electric Power Trader involved in Exports, the Energy withdrawn shall be calculated as following:

$$Act_E_{mp,h} = \sum_{i \in MP} Adj_E_{i,h}$$

Where:

- $Act_E_{mp,h}$ is the total Energy withdrawn by a Trader "mp" involved in Exports in hour "h".
- $Adj_E_{i,h}$ is the Energy, withdrawn at Each Trading Point "i" belong to the Trader "mp" in hour "h", calculated pursuant to Clause 5.2.1.3.
- $\forall i \in MP_{mp}$ means all those Metering Points through which Trader involved in Export is Exporting Energy from the Grid.


5.3.5. CALCULATION OF THE ENERGY SUPPLIED BY EACH MARKET PARTICIPANT

5.3.5.1. The calculation of the Energy supplied by a Market Participant, which will be used for calculation of the Imbalance, shall be done as following:

$$ES_{i,h}[MWh] = Act_E_{i,h} * (1 + Uplift_{TrasnLoss,h})$$

Where:

- $ES_{i,h}$ is the total Energy supplied by a Market Participant "i", in hour "h", which will be used for calculation of the Imbalance;
- $Act_E_{i,h}$ is the Energy, withdrawn by a Market Participant "i", in hour "h", calculated pursuant to Clause 5.3.4.1
- $Uplift_{TrasnLoss,h}$ is the Uplift Coefficient for hour "h", calculated as pursuant to Clause 5.3.3.1.



5.4. DETERMINATION OF THE IMBALANCE AMOUNTS

5.4.1. DETERMINATION OF MARKET PARTICIPANTS' CONTRACTED QUANTITIES

5.4.1.1. The Market Operator shall calculate the energy bought and sold through registered Contracts among Market Participant at each Energy Balancing Period (one hour) using the information contained in the Contracts Register.

5.4.1.2. For each Market Participant, the Market Operator shall determine the Energy bought and sold through Contracts from/to other Market Participants on hourly basis as:

$$ET_{mp,h} = \sum_{\forall k \in C_{mp}} ETC_{mp,k,h}$$

Where:

- $ET_{mp,h}$ is the Energy bought and sold by the Market Participant "mp" through Contracts with other Market Participants during hour h
- $ETC_{mp,k,h}$ is the Energy purchased or sold by the Market Participant "mp" through the Contract "k" during hour "h"
- $\forall k \in C_{mp}$ means all the Contracts of the Market Participant "mp" with other Market Participants through which it has bought or sold Energy.

5.4.1.3. Sign convention: For the application of the formula provided in Clause 5.4.1.2, the Energy bought and sold in each registered Contract shall be considered positive if the Market Participant is the buyer of such Energy and negative if the Market Participant is a seller.

5.4.2. DETERMINATION OF MARKET PARTICIPANTS' ENERGY IMBALANCES

5.4.2.1. The Market Operator shall calculate the Imbalance of Energy of each Market Participant on hourly basis as the difference between the Energy injected by the Market Participant into the Grid System plus the Energy bought and sold through registered Contracts and the Energy supplied by such Market Participant which shall be calculated as:

$$\begin{aligned} Imb_E_{mp,h} [MWh] \\ = Gen_{mp,h} [MWh] + Imp_{mp,h} [MWh] + ET_{mp,h} [MWh] \\ - ES_{mp,h} [MWh] \end{aligned}$$

Where:

- $Imb_E_{mp,h}$ is the Imbalance of Energy of Market Participant "mp" during hour "h" in MWh
- $Gen_{mp,h}$ is the Energy injected into the Grid System by Market Participant "mp" during hour "h", in MWh
- $Imp_{mp,h}$ is the actual energy Imported (injected into the Grid System), by Market Participant "mp" during hour "h", in MWh
- $ET_{mp,h}$ is the Energy bought and sold through Contracts with other Market Participants, by the Market Participant "mp" during hour "h", calculated pursuant to Clause 5.4.1.2.
- $ES_{mp,h}$ is the Energy actually supplied (or exported) by the Market Participant "mp" during hour "h", calculated pursuant to Clause 5.3.4.1.

5.4.2.2. Sign convention (I):

- a) A positive Imbalance indicates that the relevant Market Participant has either:
 - a.1. Injected into the Grid System, an Energy quantity greater than its contracted quantity; or
 - a.2. Withdrawn from the Grid System, an Energy quantity lesser than its contracted quantity.
- b) A negative Imbalance indicates that the relevant Market Participant has either:
 - b.1. Injected into the Grid System, an Energy quantity lesser than its contracted quantity; or
 - b.2. Withdrawn from the Grid System, an Energy quantity greater than its contracted quantity.

5.5. DETERMINATION OF THE APPLICABLE SYSTEM MARGINAL PRICE

- 5.5.1.1. On daily basis and for each hour of the day, the System Operator shall calculate the System Marginal Price as per
the procedure included in Appendix I
- 5.5.1.2. On daily basis, the System Operator shall communicate to the Market Operator, the System Marginal Prices of the previous day. The Market Operator and the System Operator shall agree on the channels and formats for this communication.

5.6. DETERMINATION OF THE AMOUNTS RECEIVABLE AND AMOUNTS PAYABLE

5.6.1. CALCULATION OF AMOUNTS RECEIVABLE / PAYABLE

- 5.6.1.1. Within five [5] Business Days immediately after the end of each month, the Market Operator shall determine the Amounts Payable and Amounts Receivable of each Market Participant, resulting from the administration of the Balancing Mechanism for Energy.
- 5.6.1.2. The Market Operator shall calculate such amounts as:

$$Bal_Am_{mp,M}[PKR] = \sum_{h=1}^{Tot_h} (Imb_E_{mp,h}[MWh] * Marg_h[PKR/MWh])$$

Where:

- $Bal_Am_{mp,M}$ is the final balance amount of Market Participant "mp" for the settlement month "M", as a result of administration of the Balancing Mechanism for Energy
- $Imb_E_{mp,h}$ is the Imbalance of Energy of Market Participant "mp" during hour "h" calculated pursuant to Clause 5.4.2.1.
- $Marg_h$ is the System Marginal Price for the hour "h", determined by the System Operator as per Section 5.5, expressed in PKR/MWh.
- Tot_h are the total number of hours in month "M"

- 5.6.1.3. For the application of Clause 5.6.1.2, a positive balance amount implies an Amount Receivable and the Market Participant is entitled to receive a payment for such amount. A negative balance implies that the Market Participant is responsible for making a payment for such amount to the Market Operator.

5.7. APPLICABLE TAXES

5.7.1. APPLICABILITY OF TAXES

- 5.7.1.1. All Settlements calculated by the Market Operator pursuant to this Chapter shall be subject to the applicable taxes as per Applicable Law.

5.8. PUBLICATIONS OF BME RESULTS

- 5.8.1.1. On monthly basis the Market Operator shall document and make available to the relevant Market Participants the results of the BME.

- 5.8.1.2. The Market Operator shall publish, *inter alia*, the following:

- a) The System Marginal Prices, for each hour of the previous month;
- b) The Amounts Payable and Amounts Receivable of each Market Participant; and
- c) Any other information, the Market Operator deems suitable for proper understanding of the published results.

- 5.8.1.3. The Market Operator shall provide to each Market Participant and other relevant stakeholders the following information:

- a) the hourly metering data used for calculation of the Imbalances of Energy of such Market Participant;
- b) the hourly values of the Energy actually injected into or withdrawn from the Grid System, by the Market Participant;
- c) the hourly contracted quantities of such Market Participant, which were used for calculating the Imbalances of Energy of such Market Participant; and
- d) the hourly Imbalances of the Market Participant.



Chapter 6. ADDITIONAL MARKET CHARGES (ANCILLARY SERVICE CHARGES (ASC), MUST RUN GENERATION AND OPERATORS FEE)

6.1. PURPOSE

6.1.1.1. The purpose of this chapter is:

- a) to provide a procedure for identification of the Generation Units which may be eligible for compensation for Must Run Generation and/or for allowing provision of Ancillary Services;
- b) to determine the amount of compensation for Must Run Generation and/or for allowing provision of Ancillary Services; and
- c) to provide a manner for charging the Market Operator Fee.

6.2. MUST RUN GENERATION

6.2.1. CONGESTED AREAS

6.2.1.1. Where dispatch of least cost Generation results in overloading of the network elements, lines and transformers which connect an area with the rest of the Grid System, such area shall be considered as Congested Area.

6.2.1.2. The System Operator shall alleviate Congestion in a Congested Area either by:

- a) Dispatching Must Run Generation, if the Congested Area is importing Energy from the rest of the Grid System; or
- b) instructing one or more Generation Units located in the Congested Area to reduce Generation or disconnect from the network (Must Stop Generation), if the Congested Area is exporting Energy to the rest of the Grid System.

6.2.1.3. A Congested Area shall be considered severely Congested in the following cases:

- a) the area has, on annual basis, Congestion in more than twenty percent [20%] of the Energy Balancing Periods; or
- b) the cost for alleviation of Congestion exceeds [5%] of the cost of least cost dispatch without Congestion.

6.2.1.4. The System Operator shall identify all severely Congested Areas and place them into different Congested Zones considering their location in the Grid System and inform the Market Operator accordingly.

6.2.1.5. The Market Operator shall consider the area as a Congested Zone for Settlement purposes, from 0:00 a.m. of the first day of the first month immediately after receipt of intimation from the System Operator.




6.2.1.6. A Congested Zone shall continue to be considered as a Congested Zone till the augmentation of the Transmission or Distribution Network or the installation of new control and protection devices shows that Congestion is eliminated or significantly reduced. In such case, the System Operator, if required, delineate a new Congested Zone considering the latest position of the Grid System and inform the Market Operator accordingly.

6.2.2. IDENTIFICATION OF MUST RUN GENERATION

6.2.2.1. For each Dispatch Period, the System Operator shall clearly identify, the Generation Units which shall be dispatched to alleviate a Congestion (Must Run Generation) or the Generations Units which have to reduce their generation or may have to be disconnected to alleviate Congestion (Must Stop Generation).

6.2.2.2. On monthly basis, the System Operator shall inform the Market Operator for Settlement purposes about all Generation Units which shall be considered as Must Run or Must Stop Generation in each Dispatch Period.

6.2.3. COMPENSATION FOR MUST RUN GENERATION

6.2.3.1. For each Energy Balancing Period, the Market Operator shall calculate the Energy generated by a Generation Unit which has been identified as Must Run Generation by using the following information:

a) Information provided by the System Operator:

- a.1. list of Generation Units entitled to receive compensation for Must Run Generation;
- a.2. if applicable, Energy that the Generation Unit would have produced if no instruction to increase the Generation had been issued by the System Operator, in case this value is different than zero.
- a.3. the Variable Generation Costs of the Generation Unit, as per the operating conditions of such Generation Unit during the relevant Dispatch Period.
- a.4. the System Marginal Price for each hour

b) Information from the Commercial Metering System:

- b.1. Energy actually injected into the Grid System by the Generation Unit, entitled to receive compensation in the relevant Energy Balancing Period.

6.2.3.2. The amount of Energy to be compensated to a Generation Unit identified as Must Run Generation shall be calculated as:

$$UPC_{MR_{j,h}}[MWh] = EAG_{j,h} - EPG_{j,h}$$

Where:

$UPC_{MR_{j,h}}$ is the amount of Energy to be compensated for Generation Unit "j", identified as Must Run Generation, in hour "h", in MWh;

$EAG_{j,h}$ is the Energy actually injected into the Grid System by the Generation Unit "j", in hour "h", in MWh;

$EPG_{j,h}$ is the Energy that the Generation Unit "j" would have injected into the Grid System if Congestion had not existed, calculated by the System Operator, in hour "h", in MWh.

6.2.3.3. For each Energy Balancing Period, the Market Operator shall calculate the economic compensation to be allocated to a Generator for its Generation Units which were considered as Must Run Generation:

$$MRC_{k,h}[PKR] = \sum_{j \in k} [UPC_{MR,j,h}[MWh] * (VC_i - Marg_h[PKR/MWh])]$$

Where:

$MRC_{k,h}$ is the hourly amount to be compensated to Generator "k" for Must Run Generation during hour "h", in PKR;

$UPC_{MR,j,h}$ is the amount of Energy to be compensated for Generation Unit "j", considered Must Run Generation, in hour h, in MWh, calculated pursuant to Clause 6.2.3.2;

$Marg_h$ is the System Marginal Price of hour "h", determined by the System Operator pursuant to Section 5.5;

$VC_{i,hi}$ is the Variable Generation Cost of Generation Unit "j" at hour "h", determined by the System Operator taking into consideration the operating conditions of the Generation Unit during the corresponding Dispatch Period expressed in PKR/MWh.

$\sum_{j \in k}$

Means the summation over all units "j" that belongs to Generator "k"

6.2.3.4. The Market Operator shall calculate the total monthly economic compensation for Must Run Generation as:

$$MMRC_{k,m} = \sum_{h=1}^T MRC_{k,h}[PKR]$$

Where:

$MMRC_{k,m}$ is the amount to be compensated to Generator "k" for Must Run Generation, during the Settlement Period "m", in PKR;

$MRC_{k,h}$ is the hourly amount to be compensated to Generator "k" for Must Run Generation, during hour "h", in PKR calculated pursuant to Clause 6.2.3.3;

T is the total number of hours in the Settlement Period.

6.2.4. COMPENSATION AMOUNT FOR MUST STOP GENERATION

6.2.4.1. Must Stop Generation shall not be eligible to receive any compensation for following the instructions of the System Operator to reduce its generation below its Available Capacity or disconnection from the network.

6.3. ANCILLARY SERVICES

6.3.1. REQUIREMENT AND PROVISION OF ANCILLARY SERVICES

6.3.1.1. The definitions, types and minimum requirements of Ancillary Services, which may be scheduled by the System Operator, are provided in the Grid Code or its operational procedures.

6.3.1.2. For the purpose of this Code, the following types of Ancillary Services shall be considered:

- a) Primary Operating Reserve;
- b) Secondary Operating Reserve;
- c) Replacement Reserve and Contingency Reserve (over separate time scales, collectively under "tertiary frequency control";
- d) Voltage / Reactive Power Control; and
- e) Black Start Capability.

6.3.1.3. The System Operator shall determine and schedule the required Ancillary Services while performing the Security Constrained Economic Dispatch, either the Day Ahead Schedule or the Real Time Dispatch as established in the Grid Code. In this regard, it is hereby clarified that obtaining the necessary Ancillary Services is an integral part of carrying out the Security Constrained Economic Dispatch.

6.3.1.4. The provision of Ancillary Services as provided in Clause 6.3.1.2.a) through d), within the limits set out in the Grid Code, is mandatory for all Generators and Transmission Service Providers, subject to technical requirements defined in the Grid Code, and shall be provided on the instructions of the System Operator, which shall be compensated as provided in Clause 6.3.1.5 below and the decision of the System Operator in this respect shall be binding.

6.3.1.5. Notwithstanding anything contained in Clause 6.3.1.4 above, a Market Participant may be eligible to receive an economic compensation for:

- a) its revenue loss due to an instruction issued by the System Operator to generate below the maximum Available Capacity of a Generation Unit, while its Variable Cost is lower than the System Marginal Price, for providing one or more of the Ancillary Services provided in Clause 6.3.1.2.a) through d), or for allowing other Generation Units to provide them (lost opportunity cost); and
- b) being instructed to produce Energy by a Generation Unit, while its Variable Generation Cost is greater than the System Marginal Price, for providing one or more of the Ancillary Services provided in Clause 6.3.1.2.a) through d), or for allowing other Generation Unit to provide these services (out of merit instructed generation); and
- c) for being able to provide Black Start, if such cost has been approved explicitly by the Authority as a separate component for payment.

6.3.1.6. The System Operator shall inform the Market Operator in case a Generator fails or refuses to provide required Ancillary Services for necessary action.

6.4. COMPENSATION FOR PROVISION OF ANCILLARY SERVICES

6.4.1. GENERATORS ENTITLED TO RECEIVE COMPENSATION

6.4.1.1. The System Operator shall identify and inform the Market Operator, on daily basis and for each Energy Balancing Period, the Generation Units and determine the quantity of Energy for which a Generator may be eligible to receive compensations for:

- a) provision of Ancillary Services; or
- b) reducing or increasing their Energy production to allow other Generation Units to provide Ancillary Services



- 6.4.1.2. The System Operator shall identify a Generator which may be eligible to receive the compensation as well as to determine the quantity of Energy for which compensation may be paid as provided in Clause 6.4.1.1 above as per the procedure provided in Appendix I shall be applicable.
- 6.4.1.3. The System Operator shall communicate, on daily basis to the Market Operator, the quantity of Energy for which compensation may be paid to each Generator for each Generation Unit for providing, or allowing other Generation Units to provide, Ancillary Services.
- 6.4.1.4. The information related to the provision of Ancillary Services and compensation thereof shall be published on the System Operator's website, along with necessary supporting information.

6.4.2. COMPENSATION FOR REDUCING GENERATION

- 6.4.2.1. The Market Operator shall calculate the Energy not generated by a Generator at each Energy Balancing Period (one hour), to allow the production of Ancillary Services, using the following information:
- a) Information provided by the System Operator:
 - a.1. list of Generation Units for which a Generator may be eligible to receive compensation for allowing the production of Ancillary Services, as per Clause 6.4.1.1;
 - a.2. Available Capacity of the Generation Unit for which a Generator may be eligible to receive compensation, for the relevant Energy Balancing Period;
 - a.3. Variable Generation Cost of Generation Units for which a Generator may be eligible to receive compensation at the corresponding operating conditions of such units.
 - b) Information from the Commercial Metering System as per provisions of Chapter 4:
 - b.1. Energy actually produced by the Generation Unit for which a Generator may be eligible to receive compensation, for the relevant Energy Balancing Period.
- 6.4.2.2. Till the time the System Operator makes the CCOP as referred to in Clause 6.4.1.2, the Market Operator shall determine the quantity of Energy for which compensation may be paid to a Generator for reduction of its Generation as under:

$$LOCC_ASC_{i,h}[MWh] = 0.95 * AC_{i,h}[MW] * 1[h] - EAG_{i,h}[MWh]$$

Where:

$LOCC_SSC_{i,h}$ is the quantity of Energy for which compensation may be paid to a Generation Unit i , in hour h , due to the reduction in the generation of Energy, to provide Ancillary Services or allowing the provision of Ancillary Services by other Generation Units, in MWh (Lost Opportunity Cost Compensation)

$AC_{i,h}$ is the Available Capacity of Generation Unit i , in hour h , in MW, communicated by the System Operator to the Market Operator, provided that in the case of ARE, the Available Capacity should be equal to the potential Energy that such Generation Unit would have injected into the Grid System calculated by the System Operator. Till the time the CCOP indicated above is made, the potential Energy that the ARE Generation Unit would have injected into the Grid System shall be equal to the Energy forecasted by the System Operator for the relevant hour as per provisions of the Grid Code and the factor of 0.95 shall not apply.

$EAG_{i,h}$ is the Energy injected into the Grid System by Generation Unit i , in hour " h ", in MWh, considered by the Market Operator as per provision of Chapter 4.

0.95 is a factor that considers the provision of Frequency Containment Reserve by all Generation Units.

6.4.3. COMPENSATION FOR INCREASED GENERATION

6.4.3.1. The Market Operator shall calculate the Energy injected into the Grid by a Generation Unit, whose Variable Generation Cost is above the System Marginal Price, for each Energy Balancing Period (one hour), for allowing the provision of Ancillary Services , using the following information:

a) Information provided by the System Operator:

- a.1. List of Generation Units for which a Generator may be eligible to receive compensation for allowing the provision of Ancillary Services, as per Clause 6.4.1.1;
- a.2. Energy that the Generation Unit would have produced if no Ancillary Services had been required.
- a.3. Variable Generation Cost of Generation Units, for which a Generator may be eligible to receive compensation, at the corresponding operating conditions of such units.

b) Information from the Commercial Metering System as per provisions of Chapter 4:

- b.1. Energy actually injected into the Grid System by the Generation Unit, for which a Generator may be eligible to receive compensation, during the relevant Energy Balancing Period.

6.4.3.2. Till the time, the System Operator makes the CCOP as referred to in Clause 6.4.1.2, the Market Operator shall determine the quantity of Energy for which compensation may be paid to Generators which has been dispatched for allowing the provision of Ancillary Services as under:

$$UPC_ASC_{j,h}[MWh] = EAG_{j,h}[MWh] - EPG_{j,h}[MWh]$$

Where:

$UPC_ASC_{j,h}$ is the quantity of Energy for which compensation may be paid to Generation Unit " j ", in hour h , due to the increase in the generation of Energy having Variable Generation Costs above the System Marginal Price, to allow the provision of Ancillary Services, in MWh (Variable Cost Compensation)

$EAG_{j,h}$ is the Energy injected into the Grid System by Generation Unit " j ", in hour " h ", in MWh, considered by the Market Operator as per provisions of Chapter 4.

$EPG_{j,h}$ is the amount of Energy that Generation Unit " j ", in hour " h ", would have injected into the Grid System if there had been no requirements of providing Ancillary Services (in MWh). The value of $EPG_{j,h}$ will be zero (0.0) unless the System Operator explicitly informs the Market Operator to use a different value, clearly stating the reasons for this value being used.

6.4.4. TOTAL COMPENSATION FOR PROVISION OF ANCILLARY SERVICES

6.4.4.1. The Market Operator shall determine the compensation which may be paid to a Generator, for each Energy Balancing Period, for allowing the provision of Ancillary Services as under:

$$AC_{k,h}[PKR] = \sum_{i \in k} [LOCC_ASC_{i,h}[MWh] * (Marg_h[PKR/MWh] - VC_{i,h})] + \sum_{j \in k} [UPC_ASC_{j,h}[MWh] * (VC_j - Marg_h[PKR/MWh])]$$

Where:

$AC_{k,h}$ is the hourly amount which may be paid as compensation to Generator "k" during hour "h" for the provision of Ancillary Services, in PKR;

$LOCC_ASC_{i,h}$ is the amount of Energy for which compensation may be paid to Generation Unit "i", during hour h, due to the reduction in the Energy generation, to allow the provision of Ancillary Services, in MWh, calculated pursuant to Clause 6.4.2.2;

$UPC_ASC_{j,h}$ is the amount of Energy for which compensation may be paid to Generation Unit "j", in hour h, due to the increase in the Energy generation having Variable Generation Costs above the System Marginal Price, to allow the provision of Ancillary Services, calculated pursuant to Clause 6.4.3.2;

$Marg_h$ is the System Marginal Price of hour "h", determined by the System Operator pursuant to Section 5.5;

VC_j is the Variable Generation Cost of Generation Unit "j" during hour "h", communicated by the System Operator to the Market Operator;

$\sum_{i \in k}$ is the sum over all Generation Units "i" which belongs to Generator "k";

$\sum_{j \in k}$ is the sum over all Generation Units "j" which belongs to Generator "k".

6.4.4.2. The Market Operator shall determine the total monthly compensation to a Generator, for the provision of Ancillary Services, as the sum, over all the hours of the Energy Settlement Period, of the hourly compensation as provided in Clause 6.4.4.1, plus the additional compensations as provided in Clause 6.4.4.3 below, if applicable.

6.4.4.3. Generators which were instructed by the System Operator to start a Generation Unit and connect it to the Grid System, for allowing the provision of Ancillary Services may be eligible to receive an additional compensation for such additional number of starts.

6.4.4.4. For cases where Clause 6.4.4.3 above is applicable, the System Operator shall inform the Market Operator, at the end of each month:

- the list of Generators which may be eligible to receive compensation for the number of starts of a Generation Unit, for allowing the provision of Ancillary Services;
- the total number of starts, for allowing the provision of Ancillary Services, of the Generation Unit, during the previous calendar month;
- the unitary cost for each start of the relevant Generation Unit, which shall be:

- c.1. the cost as agreed in the PPA, for Legacy Contracts, which explicitly state this as an item for payment;
- c.2. for contracts not falling under 6.4.4.4.c.1 above, the start-up cost of the relevant Generation Unit, communicated by the Generator to the System Operator. The System Operator shall verify the appropriateness and adequacy of the start-up cost communicated by the Generator before registering it in the relevant database.

6.4.4.5. The total monthly compensation to a Generator for the provision of Ancillary Services shall be calculated as under:

$$MAC_{k,m} = \sum_{h=1}^T AC_{k,h}[PKR] + \sum_{i \in k} (NS_i * SC_i) + BSC_k$$

Where:

- $MAC_{k,m}$ is the amount for which compensation may be paid to Generator "k" during the Settlement Period "m" for allowing the provision of Ancillary Services, in PKR;
- $AC_{k,h}$ is the hourly amount for which compensation may be paid to Generator "k" during hour "h" for allowing the provision of Ancillary Services, in PKR, calculated pursuant to Clause 6.4.4.1;
- NS_i is the number of starts of Generation Unit "i" belonging to Generator "k" for allowing the provision of Ancillary Services, during the Settlement Period as provided by the System Operator pursuant to Clause 6.4.4.4;
- SC_i Start-up cost of Generation Unit "i", informed by the System Operator to the Market Operator pursuant to Clause 6.4.4.4.c);
- BSC_k Monthly payments to Generator "k" for the provision of Black Start Capability. This value will be zero, unless such cost has been approved explicitly by the Authority as a separate component for payment;
- $\sum_{i \in k}$ is the sum over all Generation Units "i" which belongs to Generator "k";
- T is the total number of hours in the Settlement Period.

6.5. DETERMINATION OF THE AMOUNTS RECEIVABLE AND PAYABLE FOR ASC AND MUST RUN GENERATION

6.5.1. ASSIGNING COMPENSATION FOR PROVISION OF ANCILLARY SERVICES AND MUST RUN GENERATION TO MARKET PARTICIPANTS (AMOUNTS RECEIVABLE)

- 6.5.1.1. Within five [5] Business Days immediately after the end of each month, the Market Operator shall determine the compensation for Generators which are eligible to receive such compensation for allowing the provision of Ancillary Services and Must Run Generation and it shall assign such compensation to the relevant Market Participants as an Amount Receivable.
- 6.5.1.2. The Market Operator shall assign the compensation referred to in Clause 6.5.1.1 above, as under:
 - a) Where a Market Participant, which owns the Generation Unit or the Generation Plant, has not registered a Contract with the Market Operator, the Market Operator may assign the compensation (Amount Receivable) to such Market Participant; and

- b) Where a Market Participant, which owns the Generation Unit or Generation Plant, has registered one or more Contracts with the Market Operator, the Market Operator may assign the right to receive such compensation (Amounts Receivable) either to the Generator or to the other party as per information available in the Contract Register.

6.5.2. ALLOCATION OF AMOUNT OF COMPENSATION FOR PROVISION OF ANCILLARY SERVICES AND MUST RUN GENERATION AMONG MARKET PARTICIPANTS

6.5.2.1. Within five [5] Business Days immediately after the end of each month, the Market Operator shall allocate the amount for payment of compensation for the provision of Ancillary Services and Must Run Generation among all Market Participants which represent demand in each Congested Zone, on pro rata basis based on the total Energy withdrawn during the relevant Settlement Period (Amounts Payable). The Market Operator may adjust each component of the compensation for Must Run Generation and Ancillary Services if required to be compliant with the applicable taxation Laws in Pakistan.

6.5.2.2. The allocation of the amount of compensation as provided in Clause 6.5.2.1 shall be made as under:

- a) the total amount of compensation for allowing the provision of Ancillary Services and Must Run Generation in each Congested Zone shall be calculated as:

$$TAC_{AR_s,m}[PKR] = \sum_{\forall i \in AR_s} (MAC_{k,m}) + \sum_{\forall j \in AR_s} (MMR_{k,m})$$

Where:

$TAC_{AR_s,m}$ is the total amount for which compensation may be paid to Generators located in the Congested Zone "ARs", for allowing the provision of Ancillary Services and Must Run Generation in the Settlement Period "m", in PKR;

$MAC_{k,m}$ is the amount for which compensation may be paid to Generator "k" during the settlement period "m" for allowing the provision of Ancillary Services, calculated as per Clause 6.4.4.5;

$MMR_{k,m}$ is the amount for which compensation may be paid to Generator "k" during the settlement period "m" for Must Run Generation, calculated as per Clause 6.2.3.4;

$\forall i \in AR_s$ means all Generators connected to a network located in the Congested Zone "ARs", which are eligible for compensation for allowing the provision of Ancillary Services;

$\forall j \in AR_s$ means all Generators connected to a network located in the Congested Zone "s", which are eligible for compensation for Must Run Generation.

- b) determination of the total Energy supplied by each Market Participant enrolled as Electric Power Supplier or withdrawn by a BPC which is a Market Participant or Electric Power Trader involved in Exports or representing Generation or a Generator withdrawing back feed Energy in each Congested Zone. The calculation will be different in case of BPCs, Generators, Competitive Electric Power Suppliers, Suppliers of Last Resort and Electric Power Traders involved in Exports.

- b.1. In the case of a BPC which is a Market Participant, the Energy withdrawn shall be the Energy registered at the corresponding Metering Point considered by the Market

Operator as per provisions of Chapter 4, minus the Energy purchased from the Competitive Electric Power Suppliers, if any:

$$ES_BPC_{i,ARs,m}[MWh] = \sum_{h=1}^T Act_EMP_{i,ARs,h} - \sum_{h=1}^T \left(\sum_{\forall CS_j} EC_{MP_{i,j,ARsh}} \right)$$

Where:

$ES_BPC_{i,ARs,m}$ is the total Energy supplied to BPC "i", which is located in the Congested Zone "ARs", during the Settlement Period "m", in MWh;

$Act_EMP_{i,ARs,h}$ is the Energy, withdrawn by BPC "i", which is located in the Congested Zone "ARs", in hour "h", calculated pursuant Clause 5.3.4, in MWh;

$EC_{MP_{i,j,ARsh}}$ is the Energy supplied by the Competitive Supplier "j" to the BPC "i", which is located in the Congested Zone "ARs", in hour "h", registered by the Commercial Metering System and considered by the Market Operator as per provision of Chapter 4 or the information contained in the Contract Register, as the case may be;

$\sum_{\forall CS_j}$ is the sum over all Competitive Electric Power Suppliers which have Contracts with the BPC "i" (if any);

T is the total number of hours in the Settlement Period "m".

- b.2. In the case of a Generator which is a Market Participant, the Energy withdrawn shall be the Energy registered at the corresponding Metering Point considered by the Market Operator as per provisions of Chapter 4, minus the Energy purchased from the an Electric Power Suppliers, if any:

$$ES_Gen_{i,ARs,m}[MWh] = \sum_{h=1}^T Act_EMP_{i,ARs,h} - \sum_{h=1}^T \left(\sum_{\forall EPS_j} EC_{MP_{i,j,ARsh}} \right)$$

Where:

$ES_Gen_{i,ARs,m}$ is the total Energy supplied to Generator "i", which is located in the Congested Zone "ARs", during the Settlement Period "m", in MWh;

$Act_EMP_{i,ARs,h}$ is the Energy, withdrawn by Generator "i", which is located in the Congested Zone "ARs", in hour "h", calculated pursuant Clause 5.3.4, in MWh;

$EC_{MP_{i,j,ARsh}}$ is the Energy supplied by the Supplier "j" to the Generator "i", which is located in the Congested Zone "ARs", in hour "h", registered by the Commercial Metering System and considered by the Market Operator as per provision of Chapter 4 or the information contained in the Contract Register, as the case may be;

$\sum_{j \in EPS_j}$ is the sum over all Electric Power Suppliers "j" which have Contracts with the Generator "i" (if any);

T is the total number of hours in the Settlement Period "m".

- b.3. In the case of Competitive Electric Power Suppliers, the Energy supplied shall be the addition of the Energy supplied to all the BPCs or Generators supplied by the Competitive Electric Power Supplier:

$$ES_CS_{j,ARS,m}[MWh] = \sum_{h=1}^T \left(\sum_{\forall BPC_i \in ARS} Act_EMP_{i,h} + \sum_{\forall Gen_i \in ARS} Act_EMP_{i,h} \right)$$

Where:

$ES_CS_{j,ARS,m}$ is the total Energy supplied by the Competitive Supplier "j", to its customers, located in the Congested Zone "ARs", during the Settlement Period "m", in MWh;

$Act_EMP_{i,h}$ is the Energy supplied to BPC "i" or Generator "i", located in the Congested Zone "ARs", by Competitive Supplier "j" in hour "h", in MWh, either calculated pursuant Clause 5.3.4 or the information contained in the Contract Register of the Market Operator, as the case may be, depending on the type of Contract between the Competitive Supplier and the BPC or the Generator;

$\sum_{\forall BPC_i \in ARS}$ means the addition over all BPCs supplied by the Competitive Supplier "j" which are located in the Congested Zone "ARs";

$\sum_{\forall Gen_i \in ARS}$ means the addition over all Generator supplied by the Competitive Supplier "j" for back-feed Energy which are located in the Congested Zone "ARs"

T is the total number of hours in the Settlement Period "m".

- b.4. In the case of Suppliers of Last Resort, the Energy supplied shall be calculated through an appropriate balance of the total Energy taken by the Supplier of Last Resort from the Transmission Network or Imports plus the Energy injected by Distribution Network Connected Generation owned by the Supplier of Last Resort, duly corrected to take into account the losses in the Transmission or Distribution Network.

$$ES_BS_{k,ARS,m}[MWh] = \sum_{h=1}^T \left[\left(\sum_{\forall i \in TP_{ARS}} Act_ETP_{i,ARS,h} + \sum_{\forall j \in MP_{ARS}} EMP_{j,ARS,h} \right) \right]$$

Where:

$ES_BS_{k,ARS,m}$ is the total Energy supplied by the Supplier of Last Resort "k", to its consumers located in the Congested Zone "ARs", during the Settlement Period "m", in MWh;

$Act_ETP_{i,ARS,h}$ is the Energy injected/extracted at the Trading Point "i", belonging to the Supplier of Last Resort "k", located in the

Congested Zone "ARs", in hour "h", calculated pursuant to Clause5.3.4, in MWh;

The Energy injected into the relevant network shall be considered positive and the Energy extracted from such network shall be considered negative;

$E_{MPj,ARS,h}$ is the Energy injected/extracted at the Metering Point "j", which is not a Trading Point, belonging to the Supplier of Last Resort "k", located in the Congested Zone "ARs", in hour "h", measured by the corresponding Commercial Metering Systems and considered by the Market Operator as per provision of Chapter 4, in MWh. The Energy injected into the relevant network shall be considered positive and the Energy extracted from such network shall be considered negative. Only positive values shall be used in the calculation;

$\sum_{\forall i \in TP_{ARS}}$ means the addition over all Trading Points belonging to the Supplier of Last Resort "k", which are located in the Congested Zone "ARs";

$\sum_{\forall j \in MP_{ARS}}$ means the addition over all Metering Points which are not Trading Points, belonging to the Supplier of Last Resort "k", which are located in the Congested Zone "ARs";

T is the total number of hours in the Settlement Period "m".

b.5. In the case of Electric Power Traders involved in Exports or representing Generators, the Energy demanded shall be the Energy registered at the corresponding Metering Point:

$$ES_TraderEXP_{l,ARS,m}[MWh] = \sum_{h=1}^T Act_E_{MP_{l,ARS,h}} + \sum_{h=1}^T Act_E_{MP_{gen,ARS,h}}$$

Where:

$ES_EXP_{Trader_{l,ARS,m}}$ is the total Energy supplied by the Electric Power Trader "l", which is located in the Congested Zone "ARs", during the Settlement Period "m", in MWh;

$Act_E_{MP_{l,h}}$ is the Energy exported by the Electric Power Trader "l", which is located in the Congested Zone "ARs", in hour "h", calculated pursuant Clause5.3.4;

$E_{MP_{l,h}}$ is the Energy supplied to Generators represented by the Trader as back-feed Energy if such Energy has not been contracted with a Supplier of Last Resort calculated pursuant Clause5.3.4;

T is the total number of hours in the Settlement Period "m".

c) the total demand of the Congested Zone "ARs" shall be calculated as:

$$TD_{ARS,m} = \sum_i ES_BPC_{i,ARS,m} + \sum_j ES_Gen_{j,ARS,m} + \sum_k ES_CS_{k,ARS,m} + \sum_l ES_BS_{l,ARS,m} + \sum_n ES_Trader_{n,ARS,m}$$

Where

$TD_{ARS,m}$ is the total demand of the Congested Zone "ARs", during the Settlement Period "m", in MWh;

\sum_i is the sum over all BPCs which are Market Participants;

\sum_j is the sum over all Generators which are Market Participants;

\sum_k is the sum over all Competitive Electric Power Suppliers;

\sum_l is the sum over all Suppliers of Last Resort;

\sum_n is the sum over all Electric Power Traders which are performing Exports and/or representing Generators.

- d) the charges applicable to each Market Participant enrolled as Electric Power Supplier or BPC or Electric Power Traders involved in Exports be calculated as:

- d.1. For a BPC which is a Market Participant:

$$TC_BPC_{i,m}[PKR] = \sum_{s=1}^n \left[\frac{ES_BPC_{i,ARS,m}}{TD_{ARS,m}} * TAC_{ARS,m} \right]$$

- d.2. For Generators drawing back-feed Energy:

$$TC_Gen_{j,m}[PKR] = \sum_{s=1}^n \left[\frac{ES_Gen_{j,ARS,m}}{TD_{ARS,m}} * TAC_{ARS,m} \right]$$

- d.3. For a Market Participant enrolled as Competitive Electric Power Supplier:

$$TC_CS_{k,m}[PKR] = \sum_{s=1}^n \left[\frac{ES_CS_{j,ARS,m}}{TD_{ARS,m}} * TAC_{ARS,m} \right]$$

- d.4. For a Market Participant enrolled as Supplier of Last Resort:

$$TC_BS_{l,m}[PKR] = \sum_{s=1}^n \left[\frac{ES_BS_{k,ARS,m}}{TD_{ARS,m}} * TAC_{ARS,m} \right]$$

- d.5. For a Market Participant enrolled as Electric Power Trader with Exports and/or representing Generators:

$$TC_Trader_{n,m}[PKR] = \sum_{s=1}^n \left[\frac{ES_Trader_{n,ARS,m}}{TD_{ARS,m}} * TAC_{ARS,m} \right]$$

Where:

$TC_BPC_{i,m}$ are the total charges to be applied to Market Participant "i", enrolled with the Market Operator as BPC, for Ancillary Services and Must Run Generation, in the Settlement Period "m", in PKR;

$TC_Gen_{i,m}$ are the total charges to be applied to Market Participant "i", enrolled with the Market Operator as Generator, for Ancillary Services and Must Run Generation, in the Settlement Period "m", in PKR;

$TC_CS_{k,m}$ are the total charges to be applied to Market Participant "j", enrolled with the Market Operator as Competitive Electric

Power Supplier, for Ancillary Services and Must Run Generation, in the Settlement Period "m", in PKR;

$TC_{BS_{l,m}}$ are the total charges to be applied to Market Participant "k", enrolled with the Market Operator as Supplier of Last Resort, for Ancillary Services and Must Run Generation, in the Settlement Period "m", in PKR;

$TC_{TraderE_{n,m}}$ are the total charges to be applied to Market Participant "l", enrolled with the Market Operator as Electric Power Trader and involved in Exports and or representing Generation, for Ancillary Services and Must Run Generation, in the Settlement Period "m", in PKR;

$TAC_{AR_s,m}$ is the total amount to be compensated to Generators located in the Congested Zone "ARs", for provision of Ancillary Services and Must Run Generation in the Settlement Period "m", calculated pursuant to Clause 6.5.2.2.a);

$TAC_{AR_s,m}$ is the total demand in the Congested Zone "ARs", in the Settlement Period "m", calculated pursuant to Clause 6.5.2.2.c);

$\sum_{s=1}^n$ means the addition of all the Congested Zones of Pakistan.

6.5.3. PUBLICATION OF ANCILLARY SERVICES AND MUST RUN GENERATION RESULTS

6.5.3.1. The Market Operator shall document and publish, on its Website, the results of the calculation of Amounts Payable and Amounts Receivable, for the provision of Ancillary Services and Must Run Generation, on a monthly basis.

6.5.3.2. The information that the Market Operator shall make publicly available on its Website, may include:

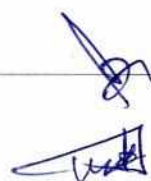
- a) the compensation that Generators may be eligible to receive for provision of Ancillary Services and Must Run Generation, for each Generation Unit;
- b) the assigning of the compensations to Generators or to other Market Participants;
- c) the Amounts Payable and Amounts Receivable by each Market Participant; and
- d) Any other relevant information.

6.6. OPERATORS FEE

6.6.1. MARKET OPERATOR FEE

6.6.1.1. The Market Operator shall charge the Market Operator Fee payable by relevant Market Participants, in accordance with the determination of the Authority. The following costs associated with the services being rendered by the Market Operator, may be included in the petition for the Market Operator Fee:

- a) general establishment and administration expenses;
- b) repair and maintenance;
- c) insurance;
- d) depreciation, if any;
- e) financial charges and other relevant costs;



- f) any estimated future capital expenditures required for compliance with the provisions in this Code; and
- g) any other relevant charges.

6.7. APPLICABLE TAXES

6.7.1. APPLICABILITY OF TAXES

- 6.7.1.1. All Settlements calculated by the Market Operator pursuant to this Chapter shall be subject to the applicable taxes as per Applicable Law.



Chapter 7. MONTHLY SETTLEMENT (MARKET PARTICIPANTS AND SERVICE PROVIDERS)

7.1. PURPOSE

7.1.1.1. The purpose of this Chapter is to provide a procedure for administration of a Market Settlement System to issue the monthly Settlement Statements to Market Participants.

7.2. MARKET SETTLEMENT SYSTEM

7.2.1. MARKET SETTLEMENT SYSTEM ADMINISTRATION

7.2.1.1. The Market Operator shall establish and administer a Market Settlement System for administration of the market and shall be responsible for the development and maintenance of the required digital infrastructure for the operation of the Market Settlement System.

7.2.1.2. The Market Operator shall be responsible for verification of data and the accuracy of the outputs of the Market Settlement System, which, shall be based on:

- a) the relevant legal instruments;
- b) the information provided by the Metering Service Providers;
- c) the information provided by the System Operator;
- d) the information available in the Market Participants Register as well as Contract Register; and
- e) the information available in any other database of the Market Operator.

7.2.2. MARKET SETTLEMENT SYSTEM FUNCTIONS

7.2.2.1. The Market Settlement System shall be capable to perform the following functions:

- a) calculate the settlement of the Balancing Mechanism for Energy, for all Market Participants according to the provisions of Chapter 5;
- b) calculate the settlement of the Balancing Mechanism for Capacity, for all Market Participants according to provisions of Chapter 11;
- c) calculate the settlement of the Ancillary Services and Must Run Generation, for all Market Participants according to provisions of Chapter 6;
- d) calculate the accrued Default Interest payable to or by accrued the Market Participants, as provided in Clauses 7.2.3.1 and 7.2.3.2; and
- e) calculate the Market Operator Fee.

7.2.2.2. The Settlement of charges to be paid to or by a Market Participant, for a month, shall include the Amounts Payable or Amounts Receivable by the Market Participant, as the case may be, for:

- a) its participation in the Balancing Mechanism for Energy, duly calculated as per Section 5.6;
- b) dispatch of Must Run Generation and the Ancillary Services, calculated as per Chapter 6;
- c) the Market Operator fee;



- d) if applicable, the amount payable by the Market Participant for the provision of Metering Services;
- e) corrections which arise from Extra Ordinary Settlement Statements as provided in Sub-Section 7.3.4; and
- f) accrued interest for previous payments not made or received on time.

7.2.3. ADDITIONAL CHARGES AND PAYMENTS

7.2.3.1. As provided in Sub-Section 12.3.6, the Market Operator may recover from a Market Participant:

- a) actual costs (if any) incurred by the Market Operator for administration of Security Covers and Settlement Guarantee Fund in case of non-payment; and
- b) Default Interest on any late payments.

7.2.3.2. The Market Operator shall determine the Default Interest accrued by Market Participants and Service providers for payments not executed at the Payment Due Date due to insufficient funds in the Market Operator's Credit Cover Account for Monthly Settlements. These amounts shall be recovered from the Market Participants whose payments were not transferred at the Payments Due Date.


7.3. SETTLEMENT STATEMENTS

7.3.1. PRELIMINARY SETTLEMENT STATEMENTS

7.3.1.1. Within seven (07) Business Days of the beginning of each month, the Market Operator shall send, through electronic means, to each Market Participant and Service Provider, a Preliminary Settlement Statement for the results of the Settlements of the previous month.

7.3.1.2. The Preliminary Settlement Statement for a Market Participant shall, at least, include:

- a) the results of the Balancing Mechanism for Energy:
 - a.1. the hourly values of the Energy injected or withdrawn from the Grid System during the Settlement Period;
 - a.2. the Energy sold and bought through Contracts, registered with the Market Operator, for each hour of the Settlement Period;
 - a.3. the hourly Energy Imbalances;
 - a.4. the System Marginal Price for each hour of the Settlement Period; and
 - a.5. the total Payable or Amount Receivable;
 - a.6. the Transmission losses and the Transmission and Distribution Loss Factors used in the calculations;
- b) the compensation for Must Run Generation and Ancillary Services for the Settlement Period;
- c) the Market Operator Fee;
- d) the payable or accrued interest for previous payments not made on time; and
- e) any adjustment resulting from an Extraordinary Settlement Statement.



7.3.2. CLAIMS AGAINST THE PRELIMINARY SETTLEMENT STATEMENTS

- 7.3.2.1. Where a Market Participant considers that an error or discrepancy exists in the Preliminary Settlement Statement, it shall submit to the Market Operator a written Review Request within [five (5)] Business Days of receipt of the Preliminary Settlement Statement.
- 7.3.2.2. The Review Request shall clearly state the Settlement Period, Dispatch Day, the issuance date of the Preliminary Settlement Statement, the item claimed, the reasons for the claim, the amount claimed, and shall be accompanied with supporting documents.
- 7.3.2.3. After receipt of the Review Request, the Market Operator shall review the request and decide whether there is any error or discrepancy in the Preliminary Settlement Statement and if required, it may hold a meeting with the relevant Market Participant to settle the matter. If the Market Operator does not agree with the Review Request, it shall intimate the same to the relevant Market Participants along with reasons thereof.
- 7.3.2.4. Where the market operator, after review of the Preliminary Settlement Statement finds that there is an error or discrepancy as claimed by the relevant Market Participant, it shall rectify the error before issuing the Final Settlement Statement and shall inform all the relevant Market Participants accordingly.

7.3.3. FINAL SETTLEMENT STATEMENTS

- 7.3.3.1. On 25th of each month, the Market Operator shall issue the Final Settlement Statement to each Market Participant, using a format similar to the Preliminary Settlement Statement.
- 7.3.3.2. A Market Participant may challenge the Final Settlement Statement along with reasons thereof within [15] Business Days of its issuance. The challenge may relate to:
- a) The metered values and contracted quantities of Energy; or
 - b) The settled amounts, either for Imbalances, Market Operator's Fee, if applicable, System Operator's Fee, Default Interest for late payments or any other item which has been included in the Final Settlement Statement.
- 7.3.3.3. The Market Operator and the Market Participant shall make reasonable efforts to mutually settle the matter within [20] Business Days after the challenge is submitted to the Market Operator as per dispute resolution mechanism provided in Chapter 14.

7.3.4. EXTRAORDINARY SETTLEMENTS

- 7.3.4.1. Market Operator shall issue an Extraordinary Settlement Statement for a month, where:
- a) a Market Participant and the Market Operator settle a challenge made under Clause 7.3.3.2, in an amicable manner that results in an amount which is different from the Final Settlement Statement; or
 - b) the dispute is settled according to the dispute resolution mechanism which requires modification in the amounts included in the Final Settlement Statement.
- 7.3.4.2. The Extraordinary Settlement Statement shall supersede the issued Final Settlement Statement for such month.

7.3.4.3. The Market Operator shall calculate, for each Market Participant, the difference between the Extraordinary Settlement Statement and the Final Settlement Statement originally issued according to Sub-Section 7.3.1, and it will include the corresponding corrections in the Preliminary and Final Settlement Statement of the month immediately after the issuance of the Extraordinary Settlement Statement.

7.3.5. FAILURE OF THE MARKET SETTLEMENT SYSTEM

7.3.5.1. In case of an emergency or failure of the Market Settlement System, the Market Operator may issue an Estimated Settlement Statement and may modify the schedule for issuing Preliminary Settlement Statements or Final Settlement Statements, as the case may be. In such cases, the Market Operator shall inform all Market Participants and Service Providers the temporary procedural changes as soon as possible.

7.4. DEBIT AND CREDIT NOTIFICATIONS

7.4.1. NOTIFICATIONS TO MARKET PARTICIPANTS

7.4.1.1. Subject to Clause 7.4.3.1, The Market Operator, within [2] Business Days after issuance of the Final Settlement Statement, shall:

- a) issue a Debit Notification in respect of the previous month to all Market Participants who are liable to pay an amount as per the Final Settlement. All payments shall be made within [2] Business Days upon receipt of the Debit Notification except where specifically provided otherwise by the Market Operator.
- b) Issue a Credit Notification in respect of the previous month to all Market Participants who will receive a payment as per the Final Settlement Statement.

7.4.1.2. The Market Operator, in this process, shall act as an independent entity, without assuming any payment responsibility. Obligation of payment shall remain with the relevant Market Participants. For the avoidance of doubt, the Market Operator shall not be held liable for any kind of non-payment by any of the Market Participants.

7.4.2. DISAGREEMENTS WITH THE NOTIFICATIONS

7.4.2.1. Each Market Participant which receives a Debit or Credit Notification, as per clause 7.4.1.1 above, shall pay the required amount, and shall be entitled to receive the amount, shown in the Final Settlement Statement, on the Payment Due Date, whether or not there is any dispute regarding the Amount Payable or the Amount Receivable.

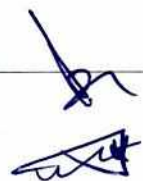
7.4.2.2. The payment of the amount by the Market Participant or the Market Operator, as the case may be, pursuant to clause 7.4.2.1 shall not prejudice the right of the Market Participant to seek resolution of the dispute pursuant to Chapter 14.

7.4.3. PAYMENTS BY ELECTRIC POWER SUPPLIERS INVOLVED IN LEGACY CONTRACTS

7.4.3.1. Any amount chargeable or amount recoverable that arise due to the Settlement of Legacy Contracts (Imbalances, Ancillary Services and Must Run Generation charges) shall be distributed among all EX-WAPDA DISCOs and KE, in their role as Suppliers of Last Resort, proportional to their Energy purchased up to the cap set for the share of each EX-WAPDA DISCOs and KE in the Legacy Contracts.

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7.4.3.2. Subject to Clause 12.1.4.1, the amounts calculated pursuant to Clause 7.4.3.1 above shall be adjusted in the transfer pricing mechanism as provided Special Purpose Agent code and shall be settled accordingly..

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Chapter 8. FIRM CAPACITY CERTIFICATION

8.1. PURPOSE

8.1.1.1. The purpose of this Chapter is to provide a procedure for administration of the certification process of Firm Capacity for Generators and Imports.

8.2. PROCEDURE FOR FIRM CAPACITY CERTIFICATION

8.2.1. CHARACTERISTICS OF FIRM CAPACITY CERTIFICATES

8.2.1.1. A Firm Capacity Certificate, issued by the Market Operator, shall have a nominal value of 0.1 MW, and may not be subdivided further.

8.2.1.2. Each Firm Capacity Certificate shall have a unique identification number which will be used to register and track Capacity transactions among Market Participants.

8.2.2. REQUIREMENT OF HAVING FIRM CAPACITY CERTIFICATES

8.2.2.1. A Generator interested to sell Capacity in the Market shall obtain Firm Capacity Certificates from the Market Operator for its Physical Assets, provided that a Generator may be represented by a Market Participant to obtain such certificates for its Physical Assets. In absence of such certification, the Firm Capacity allocated, to a Generator or a Market Participant who represents a Generator, shall be considered zero MW.

8.2.2.2. A Market Participant which has executed a Contract for Import of Energy or Capacity may also obtain Firm Capacity Certificates, subject to the conditions as laid down below.

8.2.2.3. A Market Participant may sell Capacity through registered Contracts up to the quantity included in its Firm Capacity Certificates.

8.3. ISSUANCE OF FIRM CAPACITY CERTIFICATES

8.3.1.1. The Market Operator shall make a CCOP for issuance of the Firm Capacity Certificates which shall include, inter alia, the following:

- a) The data and information to be submitted by the parties to obtain Firm Capacity Certificates
- b) The information to be provided by the System Operator
- c) The procedure to be followed for issuance of the Firm Capacity Certificates
- d) The templates for "Application for Firm Capacity Certification"
- e) The formulas to be used in calculation of the Firm Capacity Certificates for different type of technologies
- f) The procedure for changing Temporary Firm Capacity Certificates into permanent ones and the documents needed to certify the commissioning and actually installed capacity
- g) The procedure for review and amendment of the already issued Firm Capacity Certificates



- 8.3.1.2. The Market Operator shall issue the Firm Capacity Certificates, after registering them in the Firm Capacity Register. The number of Firm Capacity Certificates shall be calculated as the Firm Capacity in MW, certified during the certification process, multiplied by 10.
- 8.3.1.3. The Market Operator shall issue two types of Firm Capacity Certificates:
- a) Temporary Firm Capacity Certificates
 - b) Permanent Firm Capacity Certificates (for initial three years termed as Initial Firm Capacity Certificates).
- 8.3.1.4. Temporary Firm Capacity Certificates are such certificates which may be issued at the request of a Market Participant or an Enrolled Person, for a new generation facility which fulfils any of the following requirements:
- a) Generation License has been issued by the Authority or a formal application has been submitted in this respect, if required;
 - b) documents proving the acquisition or rental of the land for construction of the Generation Plant as well as the requisite transmission lines;
 - c) authorizations and permits, issued by the relevant entities, for the construction of the Generation Plant;
 - d) EPC contracts, clearly stating the project commissioning date; or
 - e) any other relevant document.
- 8.3.1.5. The application for a Temporary Firm Capacity Certificate shall also contain a formal Capacity declaration signed by the authorized representative of the applicant. This declaration shall clearly state the Installed Capacity of the Generation Plant, expressed in electrical megawatt [MWe].
- 8.3.1.6. Any person owning a Temporary Firm Capacity Certificate may use them for promotional or commercial purposes and for ex-ante verification of Capacity Obligations of a Market Participant, however, such certificates may not be used to support Capacity transactions in a registered Contract.
- 8.3.1.7. The owner of a Temporary Firm Capacity Certificate, who shall be enrolled as Enrolled Person with the Market Operator, shall submit an application to the Market Operator for its cancellation and issuance of a Permanent Firm Capacity Certificate (also termed as the Initial Firm Capacity Certificate) not earlier than two months of the expected COD: provided that t Permanent Firm Capacity Certificate shall not be issued for any Generation Unit or Generation Plan which doesn't contribute to the the Capacity Obligation of a Market Participant. However, Permanent Firm Capacity Certificate may be issued for such Generation Units or Generations Plants for participation in the Balancing Mechanisms if it can provide any of the Ancillary Services.

Explanation:

It is hereby clarified that a Generator which can provide Ancillary Services may sell all of its Energy and/or Capacity through the Balancing Mechanisms as a merchant plant without registering any Bilateral Contract with the Market Operator.

8.3.1.8. The Permanent Firm Capacity Certificates shall be valid up to twenty [20] years or any other shorter period as decided by the Market Operator upon performing a review pursuant to this Code. Temporary Firm Capacity Certificates will have validity as decided by the Market Operator on a case to case basis and will expire on the COD of the concerned Generation Unit or Generation Plant.

8.3.2. ISSUANCE OF FIRM CAPACITY CERTIFICATES

8.3.2.1. One month prior to the commencement of the CTBCM, the Market Operator shall issue Firm Capacity Certificates, an Initial Firm Capacity Certificates, to each Generator having Generation Units or Generation Plants commissioned, or expected to be commissioned, before CMOD.

8.3.2.2. Initial Firm Capacity Certificates for Contracts for Import may be issued by the Market Operator after considering the particular features of the relevant Contract.

8.3.2.3. For new Generation Units or Generation Plants, commissioned or expected to be commissioned after CMOD, the Initial Firm Capacity Certificates may be issued upon request of the concerned Generator or its representative.

8.3.2.4. After the CMOD, the Electric Power Traders or Electric Power Suppliers, who will procure Energy or Capacity through Import Contracts, the Initial Firm Capacity Certificates may be issued upon request of the concerned Electric Power Trader or Electric Power Supplier.

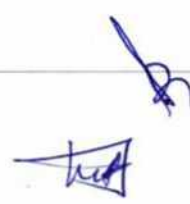
8.3.2.5. Any person interested to obtain the Initial Firm Capacity Certificates, may apply to the Market Operator, not earlier than two months before the expected COD of the Generation Unit or Generation Plant. The applicant shall submit all the relevant information to the Market Operator required for such certification.

8.3.2.6. Where in the opinion of the Market Operator, the information submitted by the applicant for obtaining the Firm Capacity Certificates is false, fabricated or forged, especially where the said information may have material impact on the number of Firm Capacity Certificates to be issued, it may investigate the matter and if deemed appropriate, may take any action available under this Code or under the Applicable Law.

8.3.2.7. For a Generation Unit or Generation Plant, the Initial Firm Capacity Certificates may be reduced or increased depending on its actual performance. This process may be initiated by the Market Operator on its own motion or upon the request of the concerned Market Participant.

8.3.2.8. For an Electric Power Trader or Electric Power Supplier with Import Contracts, the Initial Firm Capacity Certificates may be reduced depending on the information provided by the System Operator regarding the Energy or Capacity available for Import during critical periods of the system. This process may be initiated by the Market Operator upon information provided by the System Operator.

8.3.2.9. Two months prior to the expiry the date of the Firm Capacity Certificates, the concerned Market Participant, may request the Market Operator to renew them or issue new certificates according to the procedure for issuance of the Initial Firm Capacity Certificates as set out above.



8.3.3. REGISTRATION OF THE ISSUED CERTIFICATES

8.3.3.1. The Market Operator shall organize and maintain a Firm Capacity Register, for Firm Capacity Certificates with the following information:

- a) Unique number for each Firm Capacity Certificate;
- b) Name of the Market Participant or other person for which the Firm Capacity Certificate was issued;
- c) Name of the Market Participant currently owning the Firm Capacity Certificate;
- d) Identification Code of the Generation Unit or Import Contract associated with the Firm Capacity Certificate;
- e) Status of Firm Capacity Certificate. The status of a Firm Capacity Certificate may be classified as:
 - e.1. **Available:** The Firm Capacity Certificate is valid and may be bought and sold to back any Capacity transaction;
 - e.2. **Blocked:** The Firm Capacity Certificate is valid but may not be used further for backing any Capacity transaction
 - e.3. **Cancelled:** The Firm Capacity Certificate is no longer valid.
- f) Issuance and expiry date of each Firm Capacity Certificate.

8.3.3.2. The Firm Capacity Register shall be updated on regular basis and published on the MO Website.

8.4. DETERMINATION OF INITIAL FIRM CAPACITY

8.4.1. COMMISSIONED GENERATION UNITS OR GENERATION PLANTS

8.4.1.1. The Initial Firm Capacity, for a Dispatchable Generation Unit, commissioned prior to CMOD, shall be determined by the Market Operator based on the actual Available Capacity of the Generation Unit, during System Peak Hours, in the last three years as per provisions of the CCOP prepared under Clause 8.3.1.1.

8.4.1.2. The Initial Firm Capacity, for a Non-Dispatchable Generation Unit, commissioned prior to CMOD, shall be determined as the average hourly Energy injected into the Grid System by the Generation Unit, during System Peak Hours, in the last three years as per provisions of the CCOP prepared under Clause 8.3.1.1.

8.4.1.3. For the application of Clause 8.4.1.2 above, where the Non-Dispatchable Generation Unit has been instructed by the System Operator or the Distribution Licensee, as the case may be, to reduce its production of Energy due to network or system constraints or due to provision of Ancillary Services or due to alleviation of Congestion, any Energy which was injected into the Grid System during the afore-referred period shall be excluded from the calculation of Initial Firm Capacity.

8.4.1.4. The values excluded as per Clause 8.4.1.3 above, shall be replaced with the potential Energy that the Non-Dispatchable Generation Unit would have injected into the Grid System as forecasted by the System Operator.



8.4.1.5. The CCOP prepared under Clause 8.3.1.1 shall also include provisions for determination of the Initial Firm Capacity for Dispatchable and Non-Dispatchable Generation Units describing the calculations to be performed to determine the Initial Firm Capacity of Dispatchable and Non-dispatchable Generation Units, as well as the necessary information and the institutions involved in providing such information.

8.4.2. NEW GENERATION UNITS

8.4.2.1. The Initial Firm Capacity of new Generation Units, which will be commissioned after CMOD, shall be calculated by the Market Operator based on the technology utilized by the Generation Unit, multiplying the Installed Net Capacity with the Equivalent Availability Factors, subject to demonstration of full availability during the System Peak Hours as provided in Table I below.

Table I: Equivalent Availability Factors

Sr. No.	Generation Technology	Equivalent Availability Factor
1	Dispatchable Technologies	
1.1	Hydro with reservoir	0.92
1.2	Thermal (either liquid fuels, gas or coal fired)	0.92
1.3	Bagasse	0.92
1.4	Thermal Solar	0.87
1.5	Nuclear	0.87
2	Non-dispatchable Technologies	
2.1	Hydro run of river	Based on the feasibility study
2.2	Wind	0.30
2.3	Solar PV	0.22

8.4.2.2. The Initial Firm Capacity Certificate of new Generation Units may be issued with a validity up to twenty [20] years. The Market Operator must review the Firm Capacity Certificate of such Generation Units within six months after completion of third year from COD.

8.4.3. NASCENT OR SPECIAL TECHNOLOGIES

8.4.3.1. The initial Firm Capacity of new Generation Units, which will be commissioned after CMOD, and use nascent or special technologies, not included in Table I, shall be determined on a case-to-case basis.

8.4.3.2. The Market Operator shall review the information submitted by the applicant and, if deemed appropriate, it may seek advice from reputable experts of such technologies.

8.4.3.3. Thereafter, the Market Operator shall fix the values to be included in the Initial Firm Capacity Certificate. These values shall be reviewed after [3] years of issuance of the Initial Firm Capacity Certificates for such Generation Units or any other shorter period as deemed appropriate.

8.4.4. CONTRACTS FOR ENERGY OR CAPACITY IMPORTS

8.4.4.1. Import Contracts, signed in compliance with NEPRA's regulations, which have provisions for firm Import shall be eligible to receive Firm Capacity Certificates. An Import Contract in order to qualify as firm Import shall:

a) stipulate that the Import comes from clearly identified group of Generation Units or

Generation Plants, which are not connected to the system of the territory where the Generation Unit is located; or

- b) in case of Imports from foreign countries, contain provisions which clearly specify that the buyer is entitled to receive the specified quantity of electric power on its demand, and that the seller is not entitled to restrict such Import for any reason, other than the unavailability of the interconnection line; and the laws prevailing in the country of the seller do not require suspension of exporting Energy in case of shortages or energy deficits;
- c) where the Import is backed by an international treaty, clearly specify that the Import is firm and it will be respected even in cases of energy deficits or shortages in the country or region of the seller.

8.4.4.2. The Market Operator shall review the submitted Import Contract and shall determine if such Contract qualifies as firm Import or not.

8.4.4.3. In case the Import Contract qualifies as firm Import, the initial Firm Capacity for the Import Contract shall be equal to the Firm Capacity stated in the Import Contract, or if this value is not clearly stated in the Contract, the average forecasted Energy to be imported during the System Peak Hours.

8.5. REVIEW OF FIRM CAPACITY CERTIFICATES

8.5.1. REVIEW INITIATED BY THE MARKET OPERATOR

8.5.1.1. All Initial Firm Capacity Certificates issued to the Generation Units or Generation Plants commissioned prior to or after the CMOD shall be reviewed by the Market Operator within 6 months after completion of three years from the issuance date of such certificates or any other shorter period as deemed appropriate by the Market Operator.

8.5.1.2. After carrying out the first review of the Initial Firm Capacity Certificates as stipulated above, the Market Operator shall carry out review of the Firm Capacity Certificates every five [5] years. This review shall be performed within six [6] months after completion of the five years period.

8.5.1.3. Notwithstanding the provisions of review as stipulated in Clause 8.5.1.2 above, the Market Operator may review and cancel certain number of the Firm Capacity Certificates, in cases:

- a) the actual availability of a Dispatchable Generation Unit is consistently below the values which were used to issue the certificates; or
- b) the actual Energy produced by a Non-dispatchable Generation Unit is consistently lower than the values which were used to issue the certificates; or
- c) the contracted quantity of Energy and/or Capacity in an Import Contract is not available for dispatch, when required.

8.5.1.4. This review may only be performed:

- a) After the third year of the date of issuing the initial or renewed Firm Capacity Certificates; and
- b) Not more than once within a period of five [5] years.



8.5.1.5. Where upon review of the Firm Capacity Certificates, it appears that the Firm Capacity of the Generation Unit or the Generation Plan is less than the number of Firm Capacity Certificates issued to a Market Participant, the Market Operator shall issue a notice to the concerned Market Participant requiring it to provide reasons why certain number of certificates may not be cancelled and, if requested, provide an opportunity of meeting. After receipt of reply to the notice and holding the meeting, if needed, the Market Operator shall decide whether to cancel certain number of Firm Capacity Certificates and inform the concerned Market Participant accordingly.

8.5.1.6. In case the Market Operator cancels certain number of Firm Capacity Certificates, it shall change the status of such certificates to "Cancelled". The number of certificates to be cancelled shall be calculated as the difference between the Firm Capacity included in the existing Firm Capacity Certificates and the new reduced value decided by the Market Operator multiplying it with a factor of ten [10]. A Cancelled Firm Capacity Certificate shall not change its status in any circumstance.

8.5.1.7. The CCOP prepared under Clause 8.3.1.1 shall include a criteria and procedure for measuring the actual performance of a Generator or Import Contract.

8.5.2. REVIEW OF FIRM CAPACITY CERTIFICATES REQUESTED BY A MARKET PARTICIPANT

8.5.2.1. A Generator, a Market Participant representing a Generator or an Electric Power Trader importing electric power through an Import Contract may apply to the Market Operator for review of the Firm Capacity Certificates.

8.5.2.2. In case of Import Contracts, the application for review will only be processed where the Contract is explicitly associated with a Generator or Generation Plant. In such case, the Import Contract shall be considered as a Generation Unit.

8.5.2.3. The applicant may submit an application for review of the Firm Capacity Certificates by providing supporting information and documents, in the following cases:

- a) after modification or major overhaul of the Generation Unit or Generation Plant, which results in an increase in the Installed Net Capacity; or
- b) after overhaul of a Generation Unit which results in resolution of the cause of reduction of Firm Capacity Certificates; or
- c) for any other reason, where the concerned Market Participant considers that the existing Firm Capacity Certificates do not reflect the actual Firm Capacity of the relevant Generation Unit. In this case, the Market Participant, along with other information, shall also submit information for last three years in which the Equivalent Availability Factor or the Energy actually generated, taking due consideration of those periods in which the Generation Unit has been instructed to reduce Generation as per an instruction issued by the System Operator or the Distribution Network Operator, as the case may be, is above the input values considered to issue the existing Firm Capacity Certificates.

8.5.2.4. The application for review of the Firm Capacity Certificates of a Generation Unit may only be accepted if the Generation Unit:

- a) is dispatched for, at least, 1,500 hours in each of the previous two years; and
- b) has injected into the Grid System such quantity of Energy, in each of the previous two years, which is above the Generation Unit Installed Net Capacity multiplied by 1,200 hours; or
- c) in case of Dispatchable Generation Units, has been tested by the System Operator to

establish its dependable capacity and has issued a certificate in this regard.

8.5.2.5. Upon acceptance of the application, the Market Operator shall:

- a) conduct analysis and carry out assessment as deemed appropriate, which may include:
 - a.1. comprehensive review of the submitted documents;
 - a.2. request the opinion of an independent expert on the cost of the applicant;
 - a.3. perform or required tests on the relevant Generation Unit on the cost of the applicant;
 - a.4. require a verification period, which may not last more than [180 days], during which the input values claimed by the applicant shall be actually demonstrated.
- b) determine, after conducting analysis and carrying out asses as stipulated above, the revised values which may be used to issue, if required, additional Firm Capacity Certificates for the relevant Generation Unit.

8.5.2.6. The above application for review of Firm Capacity Certificates shall only be accepted after three years of issuance of the existing Firm Capacity Certificate, provided that only one such application shall be processed within a period of five [5] years.

8.5.2.7. After acceptance of the application for review of the Firm Capacity Certificates, the newly issued Firm Capacity Certificates shall have the same validity date as of the previously issued Firm Capacity Certificates for the relevant Generation Unit.

8.5.3. CALCULATION OF NEW VALUES OF FIRM CAPACITY IN CASE OF REVIEW

8.5.3.1. The calculations for reduction or increase in the number of the Firm Capacity Certificates resulting from the review by the Market Operator on its own motion or on the application of the concerned Market Participant, shall be the same as followed to issue the Initial Firm Capacity Certificates for existing Generation Units.

8.5.3.2. The data for a period of only last three years shall be considered for calculation of the Firm Capacity.

8.5.3.3. The CCOP prepared under Clause 8.3.1.1 shall include a criterion to accept or reject the application of the Market Participants and to determine the new values to be used to issue the revised Firm Capacity Certificates.

8.5.4. DISPUTE RESOLUTION

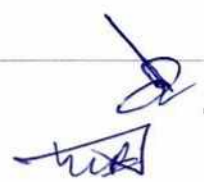
8.5.4.1. In case a Market Participant is aggrieved of a decision taken by the Market Operator regarding the Firm Capacity Certificates, it may file a dispute with the Market Operator according to the provisions of Chapter 14.

8.5.5. ACTIONS AFTER REVIEW OF FIRM CAPACITY CERTIFICATES

8.5.5.1. In case the number of Firm Capacity Certificates is increased after the review, the concerned Market Participant shall be entitled to register new Contracts or amend its existing registered Contracts using the additional Firm Capacity Certificates.



- 8.5.5.2. In case the number of Firm Capacity Certificates is reduced, and the remaining certificates are below the total Capacity sold by this Market Participant through registered Contracts, the concerned Market Participant shall execute new Contracts, amend the existing Contracts with the relevant Market Participants or procure the necessary additional certificates through Contracts with other Market Participants.
- 8.5.5.3. The aggregate Capacity sold in the new or amended Contracts shall not exceed the number of the Firm Capacity Certificates. The new or amended Contracts executed by the concerned Market Participant shall be registered with the Market Operator, following the standard procedure as set out in this Code.
- 8.5.5.4. The CCOP prepared under Clause 8.3.1.1 shall include a procedure that shall be followed to check the appropriateness of the Contracts after review of the Firm Capacity Certificates.

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Chapter 9. BALANCING MECHANISM FOR CAPACITY

9.1. INTRODUCTION

9.1.1. PURPOSE

- 9.1.1.1. The purpose of the Balancing Mechanism for Capacity is to facilitate Market Participants to comply with their Capacity Obligations. In the Balancing Mechanism for Capacity, a Market Participant purchases Capacity in order to comply with its Capacity Obligations from other Market Participants which have Capacity in excess of their obligations.
- 9.1.1.2. The Capacity Imbalances for each Market Participant shall be determined, through the Balancing Mechanism for Capacity, as the difference between:
- a) the Capacity taken from the Grid System and the Credited Capacity to such Market Participant pursuant to a registered Contract or its own Generation Units;
 - b) the Guaranteed Capacity sold by a Market Participant through a registered Contract and the Capacity actually provided by the relevant Generation Units.
- 9.1.1.3. The results of the Balancing Mechanism for Capacity shall also be used to verify ex-post compliance with the Capacity Obligations of each Market Participant.

9.1.2. BALANCING PERIOD

- 9.1.2.1. The Market Operator shall calculate the Capacity Imbalances on yearly basis (the Capacity Balancing Period), on the basis of certain number of hours in which the system is stressed "the Critical Hours".

9.1.3. SELLERS AND BUYERS IN THE BALANCING MECHANISM FOR CAPACITY

- 9.1.3.1. The following Market Participants may sell Capacity in the Balancing Mechanism for Capacity:
- a) a Generator which has not sold all of its Available Capacity, through registered Contracts, to other Market Participants;
 - b) a Market Participant which has excess Capacity, purchased through registered Contracts, than its requirement;
- 9.1.3.2. The following Market Participants may purchase in the Balancing Mechanism for Capacity:
- a) a Market Participant which has sold Guaranteed Capacity, as provided in Clause 3.2.1.5, to another Market Participant, however, the provided Capacity is less than the Guaranteed Capacity;
 - b) a Market Participant which has taken Capacity from the Grid System in excess of its Credited Capacity.

9.2. PROCEDURE FOR ADMINISTRATION OF THE BALANCING MECHANISM FOR CAPACITY

9.2.1. STEP 1: IDENTIFICATION OF CRITICAL HOURS

9.2.1.1. For calculation of the Capacity Imbalances of a Market Participant, the Market Operator shall consider the Capacity actually provided by a Generator and the Capacity actually taken by a Market Participant during the "Critical Hours". For the purposes of this chapter, the Critical Hours are defined as such hours of the previous year when the power system was under maximum stress.

9.2.1.2. Within eighteen [18] months of the CMOD, the System Operator shall, in collaboration with the Market Operator, make a CCOP for determining the Critical Hours, of the previous year, during which the power system was under maximum stress. The said CCOP shall include:

- a) the characteristics of the Demand;
- b) the production of Energy by certain technologies, which, due to their characteristics, are not able to fully control their Energy injection into the Grid System;
- c) the specific characteristics of the constraints of the hydro Generation;
- d) the Generation Units maintenance plans;
- e) fuel constraints, operational constraints and transmission reliability considerations; and
- f) the minimum reserve requirements of the power system.

9.2.1.3. Until the System Operator develops the CCOP as provided in Clause 9.2.1.2 above, the Critical Hours shall be determined as:

- a) the fifty (50) hours in which the sum of the Total Demand, hourly transmission losses and an estimation of the Demand, which has been disconnected upon instructions issued by the System Operator or the DISCO due to generation or network constraints, as the case may be, is higher than all other hours; and
- b) not more than five (5) hours of the same day shall be included in the Critical Hours.

9.2.2. STEP 2: DETERMINATION OF THE CAPACITY PROVIDED BY GENERATORS

9.2.2.1. For the Balancing Mechanism for Capacity, the Capacity provided by each Generation Unit (expressed in MW-year) shall be equal to the average Capacity provided by such Generator to the Grid System during the Critical Hours.

9.2.2.2. The System Operator shall determine, for each hour included in the Critical Hours, the Capacity provided by a Generation Unit, after taking due consideration of the type of such unit as under:

- a) for an ARE Generation Unit without storage, whose production of Energy is dependent on the availability of the primary energy resource, the Capacity provided shall be equal to:
 - a.1. the Energy injected into the Grid System by such Generation Unit during the hour; plus
 - a.2. such quantity of Energy that such Generation Unit would have injected into the Grid System during the hour, but could not be injected due to grid failure or curtailment instructed by the System Operator or the DISCO for disconnection or reduction of Energy generation, on account of Congestion or provision of Ancillary Services,



which shall equal to the Energy forecasted by the System Operator for the relevant hour.

- b) for Non-Energy Limited Generation Units, the Capacity provided shall be equal to the Available Capacity of the Generation Unit during the hour, as informed by the concerned Market Participant to the System Operator according to the provisions of the Grid Code such as thermal power plants;
 - c) For Energy Limited Generation Units as defined below, the Capacity provided during the hour shall be calculated as provided below depending on the quantity of primary energy stored;
 - c.1. In case the primary energy stored during the relevant hour would be enough for operating the Generation Plant at its Installed Capacity for at least ninety-six (96 hours), the Generation Unit shall be considered as a Non-Energy Limited Generation Unit and the Capacity provided shall be calculated as per paragraph b) above such as Hydro plant with large reservoirs as well wind and solar having similar storage capacity.
 - c.2. In case the primary energy stored at the relevant hour would not be enough for operating the Generation Plant at its Installed Capacity for at least ninety-six (96 hours), the Capacity provided shall be calculated as per Paragraph 9.2.2.2.a) above such as run of river hydro plants or wind and solar plants with very limited storage capacity.
 - d) for Imports, the Capacity provided shall be equal to the Capacity determined by the System Operator taking due consideration of the nature of the Import Contract, which shall not be lower than the actual Import during the corresponding hour.
- 9.2.2.3. Within eighteen [18] months after the approval of this Code, the System Operator shall, in collaboration with the Market Operator, make a CCOP describing the detailed methodology for implementing the calculations indicated in Clause 9.2.2.2. Such methodology shall take due consideration of:
- a) Generation Units maintenance plans and eventual modifications of such plan, instructed by the System Operator;
 - b) Availability Declarations of each Generation Plant or Generation Unit, as the case may be, and eventual changes to such declarations informed by the Generators or other Market Participants during real time operations;
 - c) the results of tests performed or instructed by the System Operator to verify the Availability Declarations submitted by the Generators or other Market Participants, including compliance with instructions of start-up, synchronizing and production of Energy;
 - d) the results of audits, performed by the System Operator, aimed to verify the appropriateness of the Availability Declarations submitted by the Generators or other Market Participants.
- 9.2.2.4. The Capacity provided by each Generation Unit, for each hour included in the Critical Hours, shall be determined by the System Operator within fifteen [15] Business Days immediately after the end of each Calendar Year and provide such information to the Market Operator.



9.2.3. STEP 3: CAPACITY CREDITED TO MARKET PARTICIPANTS

9.2.3.1. The Market Operator shall credit the Capacity provided by each Generation Unit, for each of the hours included in the Critical Hours, to the relevant Market Participants by considering the information contained in the Contract Register as well as the Firm Capacity Register.

9.2.3.2. The crediting of the Capacity shall be done in the following way:

- a) where a Generator which owns the Generation Unit, or an Electric Power Trader representing the Generator, has not registered any Contract involving "Guaranteed Capacity", the Capacity provided by the relevant Generation Unit, during each of the hours included in the Critical Hours, shall be credited proportionally to the owners of the Firm Capacity Certificates of such Generation Unit, during the day to which the corresponding hour belongs;
- b) where the Generator which owns the Generation Unit or Electric Power Trader representing the Generator has registered a Contract, in which the Generation Unit is involved in a transaction of "Guaranteed Capacity", for each hour included in the Critical Hours :
 - b.1. the Capacity stated in the Contract shall be fully credited to the Market Participant which is the buyer in the Contract; and
 - b.2. the Capacity provided by the Generation Unit shall be fully credited to the Market Participant which is the seller in the Contract.
- c) where the Generator which owns the Generation Unit or Electric Power Trader representing the Generator has registered Contracts, in which the Generation Unit is involved, partially in transactions of "Guaranteed Capacity" and partially in transactions of "Non-Guaranteed Capacity", the portion involved in "Guaranteed Capacity" shall be assigned as indicated in paragraph b) and the remaining part shall be assigned as provided in paragraph 9.2.3.2.a) above.

9.2.3.3. Once the Market Operator has credited the Capacity provided by all Generation Units to the corresponding Market Participants, in accordance with Clause 9.2.3.2 above, it shall determine the Credited Capacity of each Market Participant as the average of the Credited Capacity at each hour included in the Critical Hours:

$$ACC_{i,y}[MW] = \frac{\sum_{h \in CH} CC_{i,h}}{50 \text{ hours}}$$

Where:

$ACC_{i,y}$ is the Credited Capacity to Market Participant "i", for the Fiscal Year "y", in MW;

$CC_{i,h}$ is the Credited Capacity to Market Participant "i", in hour "h", calculated pursuant Clause 9.2.3.2, in MW;

$\sum_{h \in CH}$ means the 50 hours which have been defined as Critical Hours, for the Fiscal Year "y".

9.2.4. STEP 4: CAPACITY REQUIREMENTS OF MARKET PARTICIPANTS

9.2.4.1. For the Balancing Mechanism for Capacity, all Market Participants which supply to Consumers, BPCs which are enrolled as Market Participants and, if applicable, Firm Exports, shall be required to procure Capacity, as determined below. Further, Generators or Electric Power Traders representing Generators which have sold Guaranteed Capacity to Market Participants, shall be required to provide Capacity which was sold through the registered Contracts. This requirement to procure Capacity is termed as the Capacity Requirement for the Market Participants.

9.2.4.2. The Capacity Requirement for the Market Participants as referred to in Clause 9.2.4.1 above shall be calculated by the Market Operator as under:

- a) in the case of a BPC, which is a Market Participant, the Capacity Requirement shall be equal to the average Energy withdrawn, during the Critical Hours, calculated pursuant to Clause 5.4.2.2.a), multiplied by an Reserve Margin:

$$ACR_{i,y}[MW] = \left[\frac{\sum_{h \in CH} (Act_E_{i,h} - \sum_{j \in CS_j} EC_{MP_{i,j,h}})}{50 \text{ hours}} \right] (1 + RM)$$

Where:

$ACR_{i,y}$ is the Capacity Requirement of BPC "i", for the Fiscal Year "y", in MW;

$Act_E_{i,h}$ is the Energy withdrawn by BPC "i", in hour "h", calculated pursuant to Clause 5.4.2.2.a), in MWh;

$EC_{MP_{i,j,h}}$ is the Energy supplied by the Competitive Supplier "j" to the BPC "i", in hour "h", as per the information contained in the Contract Register of the Market Operator;

$\sum_{j \in CS_j}$ means the sum over all Competitive Electric Power Suppliers which have Contracts with the BPC "i" (if any);

$\sum_{h \in CH}$ means the 50 hours which have been defined as Critical Hours, for the Fiscal Year "y";

RM is the applicable Reserve Margin.

- b) in the case of Competitive Electric Power Suppliers, its Capacity Requirement shall be equal to the average Energy supplied by the Electric Power Supplier, during the Critical Hours, calculated pursuant to Clause 5.4.2.2.a), multiplied by an Reserve Margin. The Energy supplied for each particular hour shall be the addition of the Energy supplied to all the BPCs served by the Competitive Supplier during the relevant hour:

$$ACR_{j,y}[MW] = \frac{\sum_{h \in CH} (\sum_{i \in BPC_{i,j}} Act_E_{i,j,h})}{50 \text{ hours}} (1 + RM)$$

Where:

$ACR_{j,y}$ is the Capacity Requirement of the Competitive Supplier "j", for the Fiscal Year "y", in MW;

$Act_E_{i,j,h}$ is the total Energy supplied by the Competitive Supplier "j", to BPC "i" in hour "h", either calculated pursuant Clause 5.4.2.2.a) or the information contained in the Contract Register of the Market

Operator, as the case may be, depending on the type of Contract between the Competitive Supplier and the BPC, in MWh;

$\sum_{\forall BPC_{i,j}}$ means the sum over all BPCs "i" which are supplied by the Competitive Supplier "j";

$\sum_{h \in CH}$ means the 50 hours which have been defined as Critical Hours, for the Fiscal Year "y";

RM is the applicable Reserve Margin.

- c) in the case of Suppliers of Last Resort, the Capacity Requirement shall be equal to the average Energy supplied by the Electric Power Supplier, during the Critical Hours, calculated pursuant to Clause 5.2.1.3, multiplied by an Reserve Margin. The Energy supplied shall be calculated through an appropriate balance of the total Energy withdrawn by the Supplier of Last Resort from the Transmission Network or Imports plus the Energy injected by Distribution Network Connected Generation owned by the Supplier of Last Resort (duly corrected to take into account the losses in the Transmission or Distribution Network):

$$ACR_{k,y}[MW] = \frac{\sum_{h \in CH} (\sum_{\forall i \in TP} Act_E_{TP_{i,h}} + \sum_{\forall j \in MP} E_{MP_{j,h}})}{50 \text{ hours}} (1 + RM)$$

Where:

$ACR_{k,y}$ is the Capacity Requirement of the Supplier of Last Resort "k", for the Fiscal Year "y", in MW;

$Act_E_{TP_{i,h}}$ is the total Energy injected/withdrawn at the Trading Point "i", belonging to the Supplier of Last Resort "k", in hour "h", calculated pursuant to Clause 5.2.1.3, in MWh;

$E_{MP_{j,h}}$ is the Energy injected/withdrawn at the Metering Point "j", which is not a Trading Point, belonging to the Supplier of Last Resort "k", in hour "h", considered by the Market Operator in accordance with the Provisions of Chapter 4.

The Energy injected into the Distribution Network in the service territory of the Supplier of Last Resort "k" shall be considered positive and the Energy withdrawn from such network shall be considered negative. Only positive values shall be used in the calculation;

$\sum_{\forall i \in TP}$ means the sum over all Trading Points belonging to the Supplier of Last Resort "k";

$\sum_{\forall j \in MP}$ means the sum over all Metering Points which are not Trading Points, belonging to the Supplier of Last Resort "k";

$\sum_{h \in CH}$ means the 50 hours which have been defined as Critical Hours, for the Fiscal Year "y";

RM is the Reserve Margin.

- d) in the case of Electric Power Traders which have Contracts for Firm Export, the Capacity Requirement shall be equal to Capacity stated in the registered Contract, calculated pursuant to Clause 5.4.2.2.a), multiplied by an Reserve Margin:

$$ACR_{k,y}[MW] = \frac{\sum_{h \in CH} (\sum_{\forall EXP_{x,k}} Act_{E_{k,x,h}})}{50 \text{ hours}} (1 + RM)$$

Where:

$ACR_{k,y}$ is the Capacity Requirement of the Electric Power Trader with Export Contracts “k”, for the Fiscal Year “y”, in MW;

$Act_{E_{k,x,h}}$ is the total Energy exported by the Electric Power Trader “k”, to system “x”, in hour “h”, calculated pursuant Clause 5.4.2.2.a), in MWh;

$\sum_{\forall EXP_{x,k}}$ means the sum over all exports “x” which are carried out by the Electric Power Trader “k”;

$\sum_{h \in CH}$ means the 50 hours which have been defined as Critical Hours, for the Fiscal Year “y”;

RM is the applicable Reserve Margin.

- e) in the case of Market Participants which have executed Contracts, involving the sale of Guaranteed Capacity to other Market Participants, the Capacity Requirement shall be equal to the Capacity sold through such Contracts, without considering losses or Reserve Margin.

9.2.4.3. The Reserve Margin is the minimum amount of reserve that the system requires for to satisfy the reliability criteria as provided in the Grid Code, and it will be expressed as percentage of the Total Demand. The value of the Reserve Margin shall be determined, periodically, by the System Operator pursuant to the provisions of the Grid Code. Till such time the System Operator determines this value and inform the Market Operator accordingly, the Reserve Margin shall be equal to [10.0%].

9.2.5. STEP 5: CAPACITY BALANCES OF EACH MARKET PARTICIPANT

9.2.5.1. The Market Operator shall calculate the Capacity Balance of each Market Participant as the difference between the Credited Capacity and the Capacity Requirement of each Market Participant as under:

$$CB_{i,y} = ACC_{i,y} - ACR_{i,y}$$

Where:

$CB_{i,y}$ is the Capacity Balance of Market Participant “i”, for the year “y”, which will be used for determining its participation in the Balancing Mechanism for Capacity, in MW;

$ACC_{i,y}$ is the Credited Capacity to Market Participant “i”, for the year “y”, calculated pursuant to Clause 9.2.3.3, in MW;

$ACR_{i,y}$ is the Capacity Requirement of the Market Participant “i”, for the year “y”, calculated pursuant to Clause 9.2.4.2, in MW.

9.2.6. STEP 6: DETERMINATION OF THE EFFICIENT RESERVE AND THE REFERENCE TECHNOLOGY

9.2.6.1. Every year, while developing the IGCEP, as stipulated in the Grid Code, the System Operator shall determine:

- a) the efficient level of reserves required for the system; and

- b) the unitary price for the Capacity expressed in PKR/MW-year, which will be used for the Balancing Mechanism for Capacity.

9.2.6.2. The efficient level of reserves is the Capacity that is required to be installed in the system above the peak load, on long term basis, in order to minimize the total system costs.

The total system costs shall include:

- a) the investment costs;
- b) the operational costs;
- c) the cost of the energy not supplied.

9.2.6.3. The efficient level of reserves shall be calculated as the total Installed Capacity divided by the peak load of the system included in the end period of the IGCEP, expressed in percent:

$$RE = \frac{\sum_y \left(\frac{TIC_y}{PL_y} - 1 \right) * 100}{n}$$

Where:

RE is the efficient level of reserves expressed in percentage;

TIC_y is the total Installed Capacity in year “y”, which minimizes the total costs of the system, calculated by the System Operator in the IGCEP;

PL_y is the peak load of the system in year “y”, including transmission losses, which has been used by the System Operator in preparation of the IGCEP;

n is the total number of years used in the determination of the efficient reserve.

9.2.6.4. Till such time the System Operator determines the efficient level of reserve, the value provided in Clause 18.2.9 shall apply.

9.2.6.5. The unitary cost of the Capacity is the investment cost of the most economic Generation Unit, capable to provide 1 MW of Firm Capacity during the Critical Hours.

9.2.6.6. The System Operator shall determine the unitary cost of the Capacity, when developing the IGCEP, considering different generation technologies, and calculating for each of them, the levelized investment cost and the revenues that this project would obtain during the “Critical Hours” if it had been operating in the market. Only technologies capable to provide controllable Capacity shall be considered.

9.2.6.7. The estimated investment costs, for each technology shall include:

- a) the costs of the project may include, among other inputs:
 - a.1. equipment costs;
 - a.2. site acquisition costs (land);
 - a.3. engineering, procurement, project management and construction costs;
 - a.4. legal costs;
 - a.5. interconnection costs of the transmission system;
 - a.6. construction costs and interconnection of fuel pipelines, if applicable; and

- a.7. mobilization and contingent costs;
- b) estimated financial costs of the project;
- c) the assumed economic operational life of the project, considering the salvage value after that operational life;
- d) an appropriate discount rate, which shall be determined by the System Operator, properly documented in the reports attached with the IGCEP.

9.2.6.8. The estimated revenues for each technology shall be calculated by the System Operator, as the difference between the estimated System Marginal Prices at the expected Critical Hours and the variable cost of the technologies evaluated.

9.2.6.9. The levelized fixed cost of the technologies evaluated shall be calculated as:

$$LFT = LIC - RevMarket$$

Where:

- *LFT* is the levelized fixed cost of the technology being evaluated;
 - *LIC* is the levelized investment cost; and
 - *RevMarket* are the simulated revenues that this technology would have obtained in the CTBCM during the 50 Critical Hours.
- 9.2.6.10. The Reference Technology will be the technology which minimizes their levelized fixed costs, determined pursuant to Clause 9.2.6.9. The unitary cost of the Capacity shall be equal to the levelized investment cost of the reference technology.
- 9.2.6.11. The System Operator shall provide to the Market Operator, the detailed methodology which was utilized for determining the efficient reserve and the unitary cost of the Capacity. Till such time this methodology is developed by the System Operator, the unitary cost of the Capacity shall be determined as per Clause 18.2.8.1 and the efficient reserve level shall be determined as per Clause 18.2.9.1.
- 9.2.6.12. The Authority shall approve the values of the efficient reserve and the unitary cost of the Capacity when approving the IGCEP. The approved values will be notified by the Authority to the Market Operator. These values will remain valid until the Authority notifies to the Market Operator new values.

9.2.7. STEP 7: DETERMINATION OF THE CAPACITY PRICE FOR THE BMC

- 9.2.7.1. The Market Operator shall determine the Capacity price to be used in the Balancing Mechanism for Capacity through two curves: A supply curve and a demand curve, as demonstrated in Figure 1 below.
- a) The supply curve represents the Capacity "offered" by the Market Participants. It shall be calculated as the sum of the Capacity Balances of all Market Participants which have a positive Capacity Balance (Capacity surplus). This Capacity is considered to be offered in the Balancing Mechanism for Capacity, as a price taker.
 - b) The demand curve: The demand curve will have two sections. The mandatory part and the efficient part.

9.2.7.2. The “mandatory” part will start at point A, which corresponds to a Capacity of zero and a price equal to two times the levelized fixed costs of the Reference Technology, and extends horizontally to point B, which corresponds to the sum of the Capacity Balances of all Market Participants with a negative Capacity Balance value (Capacity deficit).

9.2.7.3. The “efficient” section will start at point B and it will extend to point C. This point will be determined by the intersection of the levelized fixed cost of the reference technology, and the “efficient” demand level calculated as:

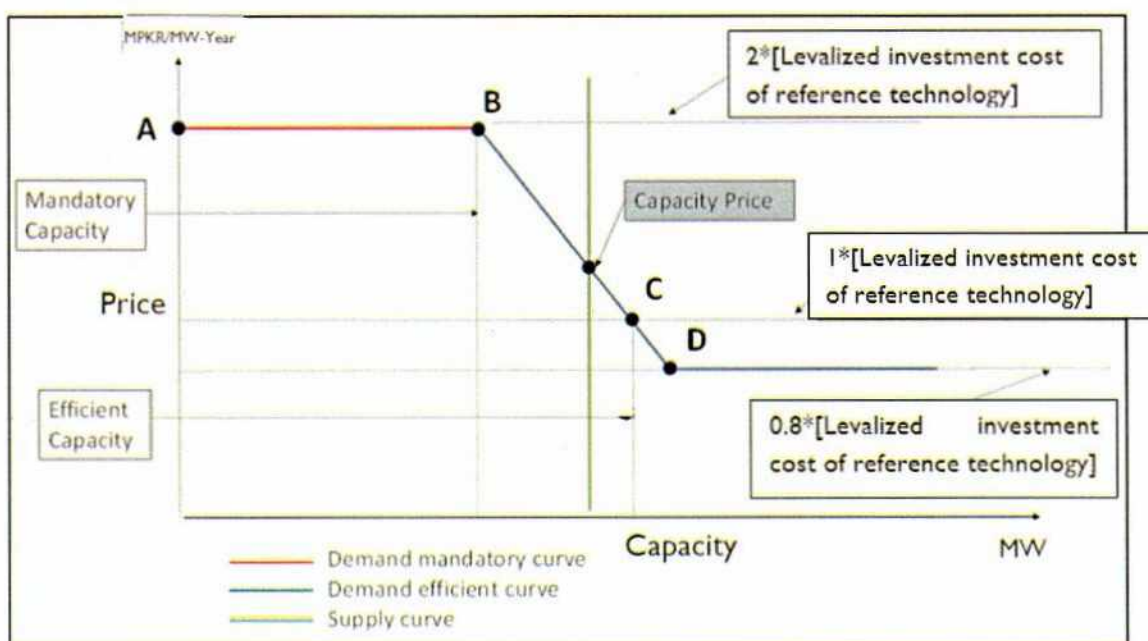
$$EDL_y = \sum_{\forall i \in neg} CB_{i,y} * \frac{1 + RE}{1 + RM}$$

Where:

- EDL is the efficient demand level;
- $CB_{i,y}$ is the total amount of Capacity required by the Market Participants “i” which has a negative value of the Capacity Balance, calculated pursuant to Clause 9.2.5.1;
- RE is the efficient level of reserve calculated as per Clause 9.2.6.3;
- RM is the Reserve Margin.

9.2.7.4. The “efficient” section of the demand curve will extend, with the same slope, up to point D, which corresponds to 80% of the levelized fixed costs of the reference technology. The Capacity prices will be capped at such level.

Figure I: Demand and Supply Curves for the Capacity Balancing Mechanism



9.2.7.5. The Capacity price, which will be used in the Capacity Balancing Mechanism will be the intersection of the demand and supply curves.

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9.2.8. STEP 8: DETERMINATION OF THE AMOUNTS SOLD AND PURCHASED BY EACH MARKET PARTICIPANT

9.2.8.1. The amount of Capacity sold and purchased by each Market Participant in BMC shall be calculated according to the procedure given below, depending on the crossing point between the supply and demand curves, determined pursuant to Sub-Section 9.2.7:

- a) If the supply curve crosses the demand curve in the segment delimited by the points A and B of Figure I, it implies that the sum of the Capacity Balances of Market Participants with positive balances (Capacity Surplus) is not enough for covering the sum of Market Participants with negative balances. In this case:

- a.1. the Market Participants with positive balances will sell all their surplus of Capacity:

$$CS_{i,y} = CB_{i,y}$$

Where:

$CS_{i,y}$ is the total amount of Capacity sold by the Market Participant "i" with positive value of Capacity Balance, in year "y";

$CB_{i,y}$ is the total amount of Capacity offered by the Market Participant "i", in year "y", which has a positive value of the Capacity Balance, calculated pursuant to Clause 9.2.5.1.

- a.2. the Market Participants with negative balances will purchase only a share of their Capacity Requirement, on a proportional basis:

$$CP_{j,y} = \frac{CB_{j,y}}{\sum_j CB_{j,y}} * \sum_i CB_{i,y}$$

Where:

$CP_{j,y}$ is the total amount of Capacity purchased by the Market Participant "j" with negative value of Capacity Balance, in year "y";

$CB_{j,y}$ is the total amount of Capacity Requirement by the Market Participant "j", in year "y", which has a negative value of the Capacity Balance, calculated pursuant to Clause 9.2.5.1;

$CB_{i,y}$ is the total amount of Capacity offered by the Market Participant "i", in year "y", which has a positive value of the Capacity Balance, calculated pursuant to Clause 9.2.5.1;

\sum_j means the sum of all Market Participants with negative Capacity Balance;

\sum_i means the sum of all Market Participants with positive Capacity Balance.

- b) If the supply curve crosses the demand curve to the right of B of Figure I, it implies that the sum of the Capacity balances of Market Participants with positive balances (Capacity Surplus) is sufficient or in excess of the requirements of all Market Participants with negative balances. In this case:

- b.1. the Market Participants with negative balances will purchase all their deficit of Capacity:

$$CP_{j,y} = -CB_{j,y}$$

Where:

- $CP_{j,y}$ is the total amount of Capacity purchased by the Market Participant "j" with negative value of Capacity Balance, in year "y";
- $CB_{i,y}$ is the total amount of Capacity required by the Market Participant "j", in year "y", which has a negative value of the Capacity Balance, calculated pursuant to Clause 9.2.5.1.

b.2. the Market Participants with positive balances will sell a portion of their Capacity surplus, on a proportional basis:

$$CS_{i,y} = -\frac{CB_{i,y}}{\sum_i CB_{i,y}} * \sum_j CB_{j,y}$$

Where:

- $CS_{i,y}$ is the total amount of Capacity sold by the Market Participant "i" with positive value of Capacity Balance, in year "y";
- $CB_{i,y}$ is the total amount of Capacity required by the Market Participant "j", in year "y", which has a negative value of the Capacity Balance, calculated pursuant to Clause 9.2.5.1;
- $CB_{i,y}$ is the total amount of Capacity offered by the Market Participant "i", in year "y", which has a positive value of the Capacity Balance, calculated pursuant to Clause 9.2.5.1;
- \sum_j means the sum of all Market Participants with negative Capacity Balance;
- \sum_i means the sum of all Market Participants with positive Capacity Balance.

9.3. DETERMINATION OF THE PRELIMINARY RECEIVABLE AND PAYABLE AMOUNTS

9.3.1. CALCULATION OF THE PRELIMINARY RECEIVABLE / PAYABLE AMOUNTS

9.3.1.1. Within forty five [45] Business Days immediately after the end of each Calendar Year, the Market Operator shall preliminarily determine the Amounts Payable and Amounts Receivable by each Market Participant as under:

$$AR_{i,y}[PKR] = CS_{i,y}[MW] * Cap_price_y[PKR/MW]$$

$$AP_{j,y}[PKR] = CP_{j,y}[MW] * Cap_price_y[PKR/MW]$$

Where:

- $AR_{i,y}$ is the Amount Receivable by a Market Participant "i" for the settlement year "y", for the Capacity sold in the Balancing Mechanism for Energy
- $AP_{j,y}$ is the Amount Payable by Market Participant "j" for the settlement year "y", for the Capacity purchased in the Balancing Mechanism for Energy
- $CP_{i,y}$ is the Capacity purchased by a Market Participant "i" in the settlement year "y" calculated pursuant to Clause 9.2.8.1
- $CS_{j,y}$ is the Capacity sold by a Market Participant "j" in the settlement year "y" calculated pursuant to Clause 9.2.8.1

- *Cap_price_y* is the unitary price of Capacity, corresponding to the Fiscal Year “y”, calculated pursuant to Clause 9.2.7.5.

9.3.1.2. The Amounts Payable shall be recovered from the relevant Market Participants in [six] equal monthly instalments and the Amounts Receivable by the Market Participants shall be paid to such Market Participants in same manner.

9.4. APPLICABLE TAXES

9.4.1. APPLICABILITY OF TAXES

9.4.1.1. All Settlements calculated by the Market Operator pursuant to this Chapter shall be subject to the applicable taxes as per Applicable Law.

9.5. INTIMATION TO THE MARKET PARTICIPANTS

9.5.1.1. The Market Operator shall intimate to each Market Participant:

- a) The preliminary values of the Amounts Payable or the Amounts Receivable, as the case may be, of all Market Participants, in the Balancing Mechanism for Capacity;
- b) The date for determination of the final Amounts Payable or the Amounts Receivable, as the case may be, of all Market Participants, in the Balancing Mechanism for Capacity;
- c) the amount of Security Covers for an amount not lower than two [2] monthly instalments of the value of the notified Amounts Payable, and the last date for the provision of Security Cover; and
- d) the amount of Security Covers to be submitted for the future instalments; and
- e) A clear warning that failure to provide the necessary Security Cover on time will automatically exclude such Market Participant from participation in the Balancing Mechanism for Capacity and will also result in non-compliance with its Capacity Obligations.

9.5.1.2. In case a Market Participant considers that an error or discrepancy exists either in the determination of the Amounts Payable or Amounts Receivable intimated by the Market Operator, or in the calculations performed, or in the parameters used to perform such calculations, it shall submit to the Market Operator a written Review Request within ten [10] Business Days of receipt of the intimation as provided in Clause 9.5.1.1.

9.5.1.3. The Review Request shall clearly state the item or items claimed, the reasons for the claim, the amount claimed, and shall be accompanied with all the supporting documents.

9.5.1.4. After receipt of the Review Request, the Market Operator shall review the request and decide whether there is any error or discrepancy in the calculations it has made and if required, it may hold a meeting with the relevant Market Participant to settle the matter. If the Market Operator does not agree with the Review Request, it shall intimate the same to the relevant Market Participants along with reasons thereof.

9.5.1.5. Where the Market Operator, after reviewing the calculations that it has performed, finds that there is an error or discrepancy as claimed by the relevant Market Participant, it shall rectify the error and shall issue new intimations to all Market Participants, informing at least:

- a) the corrections made and the new values for the preliminary Amounts Payable and Amounts Receivable;
- b) the new values for the Security Covers to be provided; and
- c) if it is considered appropriate, a new date for the final implementation of the Balancing Mechanism for Capacity.

9.6. EXECUTION OF THE BALANCING MECHANISM FOR CAPACITY

9.6.1. VERIFICATION OF THE SECURITY COVERS

- 9.6.1.1. Prior to final implementation of the Balancing Mechanism for Capacity, the Market Operator shall examine and verify the Security Covers provided by each Market Participant, both in their form and the required amounts.
- 9.6.1.2. In case a Market Participant fails to provide the Security Cover in the requisite form, the concerned Market Participant shall be excluded from participation in the Balancing Mechanism for Capacity.
- 9.6.1.3. Where a Market Participant has provided a Security Cover in the requisite form, however, for an amount less than the requisite amount, the concerned Market Participant may be allowed, on case to case basis, to participate in the Balancing Mechanism for Capacity, limited up to the amount for which it has provided the Security Cover.
- 9.6.1.4. In case of insufficient Capacity as per Clause 9.2.8.1.a), the Capacity allocated to a Market Participant, which has been excluded from the BMC as per Clause 9.6.1.2, or whose participation has been limited as per Clause 9.6.1.3, will be redistributed among the other Market Participants with negative Capacity Balances on pro-rata basis.
- 9.6.1.5. In case of sufficient Capacity as per Clause 9.2.8.1.b), the Capacity sold by all Market Participants shall be recalculated, reducing it on pro-rata basis.

9.6.2. EXECUTION OF THE BALANCING MECHANISM FOR CAPACITY

- 9.6.2.1. After fulfilling the above referred requirements, the Market Operator shall determine the final Amounts Payable and Amounts Receivable by all Market Participants, which will be used in the Yearly Settlement Statements, as provided in Chapter 11 and make payments accordingly.
- 9.6.2.2. The methodology and procedures to be used to determine the final Amounts Payable and Amounts Receivable of each Market Participant shall be the same as the procedure set out in Sub-Section 9.3.1, except that:
 - a) the Capacity purchased by the Market Participants which have been excluded from participation in the Balancing Mechanism for Capacity shall be set at zero [0.0]; and
 - b) the Capacity purchased by the Market Participants, whose participation has been limited under Clause 9.6.1.3, will be capped to such limit.

9.6.3. PUBLICATIONS OF BMC RESULTS

- 9.6.3.1. The Market Operator shall publish, on the MO Website, the following information:
 - a) the 50 Critical Hours that were used to determine the Capacity Balances;



- b) the Capacity Requirement of each Market Participant;
- c) the Credited Capacity of each Market Participant;
- d) the resulting Capacity Balance of each Market Participant;
- e) the Capacity price for the corresponding settlement year, along with a report justifying the calculations performed and the parameters used in such calculations.
- f) the Amounts Payable and the Amounts Receivable of each Market Participant; and
- g) the list of Market Participants which have been excluded from participation in the Balancing Mechanism for Capacity due to their failure to provide the requisite Security Covers
- h) any other information the Market Operator deems appropriate.

9.6.3.2. Following information shall be made available to each relevant Market Participant:

- a) the details of the Capacity Requirement at each of the Critical Hours, and the metering data that was used for determining the Capacity Requirement of such Market Participant;
- b) the details of the Credited Capacity at each of the Critical Hours, and the availability of Generation Units or the actual Generation, as the case may be, communicated by the System Operator that was used for determining the Credited Capacity of such Market Participant.

9.7. ACTIONS AFTER EXECUTION OF THE BMC

9.7.1. VERIFICATION OF COMPLIANCE WITH THE EX-POST CAPACITY OBLIGATIONS

9.7.1.1. After closing of the Balancing Mechanism for Capacity in a year, the Market Operator shall verify compliance of all Market Participants with the ex-post Capacity Obligations.

9.7.1.2. Non-compliance with the Capacity Obligations may arise due to any of the following reasons:

- a) The Balancing Mechanism for Capacity closed with a total amount of Capacity sold and purchased, which was not enough to cover the Capacity Requirements of the Market Participants with negative Capacity Balances, as set out in Clause 9.2.8.1.a);
- b) A Market Participant, with negative Capacity Balance, was excluded to participate in the Balancing Mechanism for Capacity due to failure to provide the requisite Security Cover as required by the Market Operator.
- c) A Market Participant, with negative Capacity Balance, whose participation in the Balancing Mechanism for Capacity was limited due to failure in providing the full amount of Security Cover as required by the Market Operator.

9.7.1.3. Any Non-compliance with the ex-post Capacity Obligations as per Clause 9.7.1.2 shall be dealt in accordance with the provisions of Clause 10.5.4.6.

9.7.1.4. In all cases other than as provided in Clause 9.7.1.2 above, compliance of all Market Participants with Ex-post Capacity Obligations shall be considered fulfilled.

9.7.2. UPDATE OF THE STATUS OF FIRM CAPACITY CERTIFICATES

9.7.2.1. After closing of the Balancing Mechanism for Capacity, the Market Operator shall make an adjustment in the Firm Capacity Certificates, which were blocked for backing a Load Following or Customized Contract with a BPC.

9.7.2.2. To make this adjustment, the Market Operator shall:

- a) upon request of the concerned Market Participant, change the status of the Firm Capacity Certificates, which were used to back up a Standardized Load Following Supply Contract or a Customized Contract pursuant to Clauses 3.3.3.3.d) or 3.4.3.4, as the case may be, from "Blocked" to "Available";
- b) determine the requisite number of Firm Capacity Certificates that the Competitive Supplier needs to back up the registered Contracts, wherein the Capacity sold is dependent on the Capacity demanded by the BPCs. The Market Operator shall determine such number as:

$$CS_CR_j[MW] = \max_{\forall h \in SPH} \left(\sum_{\forall BPC_{i,j}} Act_E_{i,j,h} \right)$$

Where:

CS_CR_j is the amount of Capacity required by the Competitive Supplier "i" to back up the Contracts with BPCs, in which the Capacity sold is dependent on the Capacity taken by the BPC, in MW;

$Act_E_{i,j,h}$ is the total Energy supplied by the Competitive Supplier "j", to BPC "i" in hour "h" included in "Critical Hours", calculated pursuant to Clause 5.4.2.2.a), in MWh

$\sum_{\forall BPC_{i,j}}$ means the sum over all BPCs "i" which have Contracts with the Competitive Supplier "j", in which the Capacity sold is dependent on the Capacity taken by the BPC

$\max_{\forall h \in SPH}$ means the maximum value occurred during the System Peak Hours of the previous Fiscal Year.

- c) determine the number of Firm Capacity Certificates, which shall be blocked, as under:

$$\#Block_FCC_{CSj} = CS_CR_j * 10$$

Where:

$\#Block_FCC_{CSj}$ is the number of Firm Capacity Certificates of the Competitive Supplier "j" that should be blocked to back up the registered Contracts in which the Capacity sold is dependent on the Capacity demanded by the BPCs.

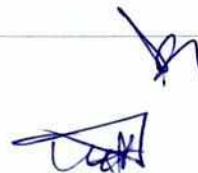
CS_CR_j is the amount of Capacity required by the Competitive Supplier "i" to back up the Contracts with BPCs, calculated pursuant to clause 9.7.2.2.b) above, in MW.

9.7.2.3. The value of $\#Block_FCC_{CSj}$ shall be rounded up to the nearest integer number.

9.7.2.4. In case the number of the Firm Capacity Certificates, having the status of "Available", of the concerned Competitive Supplier is equal or higher than the number of Firm Capacity Certificates that are required to be blocked pursuant to Clause 9.7.2.2.c), the Market Operator shall, if requested by the concerned Market Participant, change the status of such number of Firm Capacity Certificates, from "Available" to "Blocked". The Market Operator shall intimate the Competitive Supplier about the changes it has made in the Firm Capacity Register.

9.7.2.5. In case the number of the Firm Capacity Certificates, having the status of "Available" of the concerned Competitive Supplier is lower than the number of Firm Capacity Certificates that are required to be blocked pursuant to Clause 9.7.2.2.c), the Market Operator shall:

- a) change the status of all Firm Capacity Certificates of the concerned Competitive Supplier from "Available" to "Blocked";
- b) intimate the concerned Competitive Supplier about the changes it has made in the Firm Capacity Register;
- c) inform the Competitive Supplier that existing number of Firm Capacity Certificates are not enough to back up its existing Contracts with BPCs; and
- d) require the concerned Competitive Supplier to contract additional Capacity or to deregister one or more Contracts following the procedure set out in Section 3.6 and the Market Operator may not register any new Contract, other than Contracts for increasing the Credited Capacity of the concerned Market Participant, till the time the matter is resolved.



Chapter 10. COMPLIANCE WITH Ex-ANTE CAPACITY OBLIGATIONS

10.1. PURPOSE

10.1.1.1. The purpose of this Chapter is to provide a mechanism for verification of compliance with Capacity Obligations of Market Participants and to take the necessary actions in case of non-compliances by Market Participants.

10.2. CAPACITY OBLIGATIONS OF MARKET PARTICIPANTS

10.2.1. OBLIGATION OF CONTRACTING CAPACITY

10.2.1.1. An Electric Power Supplier, a BPC enrolled as a Market Participant and an Electric Power Trader engaged in Firm Exports shall have required Capacity, either provided by its own Generation Plants or purchased through registered Contracts, for the current and subsequent years as detailed in Clause 10.3.1.1 below, to cover a percentage of its forecasted demand as provided in this Code.

10.3. DEMAND FORECASTS

10.3.1. SUBMISSION OF DEMAND FORECASTS

10.3.1.1. Every year, before [Jan 31st] the Market Operator shall require the Market Participants mentioned in Clause 10.2.1.1 above, to submit their updated demand forecasts covering a period of:

- a) for Suppliers of Last Resort: Current year and following four [4] years;
- b) for Competitive Electric Power Suppliers: Current year and following four [4] years;
- c) for BPCs: Current year and following four [4] years; and
- d) for Electric Power Traders engaged in Firm Exports: Current year and following four [4] years.

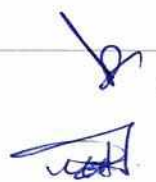
10.3.1.2. The demand forecast submitted by a Market Participant shall include, for each year, at least:

- a) the total amount of Energy to be supplied/withdrawn;
- b) the expected yearly Maximum Demand, indicating the month in which this Maximum Demand is expected to be taken; and
- c) the expected Maximum Demand to be supplied at System Peak Hours.

10.3.1.3. The Market Participants shall submit the required information before [March 1st] of each year.

10.3.1.4. The Market Operator shall make a CCOP containing:

- a) Details of the information to be submitted by the Market Participants;
- b) forms/templates for submission of information.



10.3.2. DEMAND FORECAST OF SUPPLIERS OF LAST RESORT

10.3.2.1. The Demand Forecast submitted by the Supplier of Last Resort shall be prepared using appropriate models or algorithms and by taking into account the latest available information, particularly, the following:

- a) the demand of its current consumers;
- b) the expected growth in the number of consumers and their demand;
- c) notices received from BPCs informing to end the contracted supply and their intention to contract such supply from Competitive Electric Power Suppliers;
- d) estimations regarding the number of BPCs, and the associated demand, which may end the contracted supply with the Supplier of Last Resort to receive such supply from Competitive Electric Power Suppliers;
- e) estimations regarding the number of BPCs, and the associated demand, which may end the contracted supply with Competitive Electric Power Suppliers or other Market Participants, which may return to receive such supply from the Supplier of Last Resort;
- f) the effect of loss reduction plans implemented by the relevant Distribution Licensee;
- g) the effect of plans, prepared either by the Supplier of Last Resort or the relevant Distribution Licensee, aimed at reducing consumption at the peaks;
- h) the effect of distributed generation;
- i) any other important factor affecting the forecast.

10.3.2.2. The Demand Forecast submitted by a Supplier of Last Resort shall be based on the Demand Forecast submitted by such Supplier of Last Resort to the Authority in the latest approved Power Acquisition Programme in accordance with NEPRA Power Procurement Regulation.

10.3.2.3. The Market Operator shall compare the Demand Forecast submitted by a Supplier of Last Resort with the demand forecast included in the latest Power Acquisition Programme approved by the Authority. In case both forecasts are materially different, the Market Operator shall inform the Authority accordingly. The Market Operator shall use the forecast submitted by the Supplier of Last Resort for its intended purpose unless directed otherwise by the Authority.

10.3.3. DEMAND FORECAST OF COMPETITIVE ELECTRIC POWER SUPPLIERS

10.3.3.1. The Demand Forecast of a Competitive Supplier shall include the demand of all those BPCs:

- a) which have registered Contracts with the Competitive Electric Power Supplier, or have been submitted for registration with the Market Operator; plus
- b) which have valid Contracts or irrevocable letter of commitments with BPCs which will become effective at a later date and, for such reason, may have not been submitted for registration with the Market Operator at the time of submitting the forecast.

For the avoidance of doubt, the demand of BPCs which have formally given a notice to the Supplier of Last Resort, about its intention to contract its supply from the Competitive Supplier shall be included in this forecast.



10.3.3.2. The information contained in the forecast of the Competitive Supplier shall include information only up to the expiry date of the Contract or the irrevocable letter of commitment. For any subsequent periods, it shall be assumed that the relevant BPC has ceased to be supplied from the Competitive Electric Power Supplier.

10.3.3.3. In case, the Contract or irrevocable letter of commitment does not have a certain expiry date, it shall be considered that the Contract or irrevocable letter of commitment is valid for all the reported period, and the associated demand shall be included in the Competitive Supplier forecast.

10.3.4. DEMAND FORECAST OF BPCS

10.3.4.1. A BPC, which is enrolled as a Market Participant, shall submit to the Market Operator its Demand Forecast for all the periods for which it has registered Contracts for Energy and/or Capacity with Competitive Electric Power Suppliers.

10.3.4.2. For the period after the expiration of the registered Contracts, the BPC shall include in its forecast:

- a) its best estimation of the Energy and peak demand to be consumed, in case the BPC intends to continue being enrolled as a Market Participant; or
- b) Zero [0.], if the BPC intends to withdraw from the Market as a Market Participant and obtain its supply of electric power from the Supplier of Last Resort.

10.3.5. DEMAND FORECAST OF TRADERS INVOLVED IN FIRM EXPORT

10.3.5.1. A Trader involved in Firm Export, shall submit to the Market Operator its demand forecast for all the periods for which it has registered Contracts for Energy and/or Capacity with or is planning to register such Contracts.

10.3.6. REVIEW OF THE DEMAND FORECASTS

10.3.6.1. The Market Operator shall review the submitted information and assess its authenticity through tests and checks as deemed appropriate. The Market Operator may require confirmation and/or clarifications of the provided information. The concerned Market Participants shall submit the requisite information within ten [10] Business Days.

10.3.6.2. The Market Operator shall utilize the values submitted by the Market Participant, either those originally submitted or the revised values ones as per provisions of Clause 10.3.6.1, for verifying compliance with the Capacity Obligations.

10.3.6.3. Where in the opinion of the Market Operator, the information submitted by a Market Participant for its demand forecast is false, fabricated or forged, especially where the said information may have material impact on the compliance with Capacity Obligations, it may assess the matter and if deemed appropriate, may in addition to availing any other legal remedy that may be available to the MO, refer the matter to the Authority for appropriate legal action.

10.3.6.4. The CCOP prepared under Clause 10.3.1.4 above, shall also include details about the tests and checks to be performed on the submitted information.



10.4. CAPACITY OBLIGATIONS

10.4.1. CAPACITY OBLIGATION OF SUPPLIERS OF LAST RESORT

10.4.1.1. The Capacity Obligation of a Supplier of Last Resort, for each year in which this obligation is verified by the Market Operator, shall be calculated as:

$$CO_{BSi,p} = \frac{MD_{PH,i,p}}{(1 - Tloss_p)} * (1 + RM_p) * OB\%_{BS,p} / 100.$$

Where:

- $CO_{BSi,p}$ is the Capacity Obligation of the Supplier of Last Resort “i” in the period “p” which will be verified by the Market Operator as provided in Section 10.5;
- $MD_{PH,i,p}$ is the Maximum Demand at System Peak Hours of the Supplier of Last Resort “i” in the period “p”. The value of $MD_{PH,i,p}$ will be the forecasted Maximum Demand at System Peak Hours, submitted by the involved Supplier of Last Resort to the Market Operator, as per the requirements set out in Section 10.3, for the current year and all periods immediately thereafter;
- $OB\%_{BS,p}$ is the Capacity Obligation Percentage, applicable to Suppliers of Last Resort, corresponding to period “p” as provided in Sub-Section 18.2.4;
- $Tloss_p$ is the value of the cap (expressed in percentage) on Transmission losses of NTDC as determined by the Authority in the latest tariff determination;
- RM_p is the Reserve Margin applicable to period “p”.

10.4.2. CAPACITY OBLIGATIONS OF COMPETITIVE ELECTRIC POWER SUPPLIERS

10.4.2.1. The Capacity Obligation of a Competitive Electric Power Supplier, for each year in which this obligation is verified by the Market Operator, shall be calculated as:

$$MCO_{CSj,p} = \frac{MD_{PH,j,p}}{(1 - Tloss_p)} * (1 + RM_p) * OB\%_{CS,p} / 100.$$

Where:

- $MCO_{CSj,p}$ is the mandatory Capacity obligation, of the Competitive Supplier “j” in the period “p” which will be verified by the Market Operator as provided in Sections 10.5;
- $MD_{PH,j,p}$ is the Maximum Demand at System Peak Hours of the Competitive Supplier “j” in the period “p”. The value of $MD_{PH,j,p}$ will be the forecasted Maximum Demand at System Peak Hours, corresponding to the Contracted Supply, submitted by the relevant Competitive Supplier to the Market Operator, as per the requirements provided in Section 10.3, for the current year and all periods immediately thereafter;
- $OB\%_{CS,p}$ is the Capacity Obligation Percentage, applicable to Competitive Electric Power Suppliers, corresponding to period “p” as provided in Sub-Section 18.2.4;
- $Tloss_p$ is the value of the cap (expressed in percentage) on Transmission losses of NTDC as determined by the Authority in the latest tariff determination;
- RM_p is the Reserve Margin applicable to period “p”.

10.4.3. CAPACITY OBLIGATIONS OF BPCs ENROLLED AS MARKET PARTICIPANTS

10.4.3.1. The Capacity Obligation of a BPC enrolled as a Market Participant, for each year in which this obligation is verified by the Market Operator, shall be calculated as:

$$CO_{BPCk,p} = \frac{MD_{PH,k,p}}{(1 - Tloss_p)} * (1 + RM_p) * OB\%_{BPC,p} / 100.$$

Where:

- $CO_{BPCk,p}$ is the Capacity obligation, of the BPC enrolled as Market Participant "k" in the period "p" which will be verified by the Market Operator as provided in Section 10.5;
- $MD_{PH,k,p}$ is the Maximum Demand at System Peak Hours of the BPC enrolled as Market Participant "k" in the period "p". The value of $MD_{PH,k,p}$ will be the forecasted Maximum Demand at System Peak Hours, corresponding to the contracted Supply, submitted by the relevant BPC to the Market Operator, as per the requirements set out in Section 10.3, for the current year and all periods immediately thereafter;
- $OB\%_{BPC,p}$ is the Capacity Obligation Percentage, applicable to BPCs enrolled as Market Participants, corresponding to period "p" as provided in Sub-Section 18.2.4.
- $Tloss_p$ is the value of the cap (expressed in percentage) on Transmission losses of NTDC as determined by the Authority in the latest tariff determination;
- RM_p is the Reserve Margin applicable to period "p".

10.4.4. CAPACITY OBLIGATIONS OF FIRM EXPORTS

10.4.4.1. The Capacity Obligation of a Trader involved in Firm Export, for each year in which this obligation is verified by the Market Operator, shall be calculated as:

$$CO_{BPCk,p} = \frac{MD_{PH,k,p}}{(1 - Tloss_p)} * (1 + RM_p) * OB\%_{BPC,p} / 100.$$

Where:

- $CO_{BPCk,p}$ is the Capacity obligation, of Trader "k" in the period "p" which will be verified by the Market Operator as provided in Section 10.5;
- $MD_{PH,k,p}$ is the Maximum Demand at System Peak Hours of the Trader involved in Firm Export "k" in the period "p". The value of $MD_{PH,k,p}$ will be the forecasted Maximum Demand at System Peak Hours, corresponding to the contracted Supply, submitted by the relevant Trader to the Market Operator, as per the requirements set out in Section 10.3, for the current year and all periods immediately thereafter;
- $OB\%_{BPC,p}$ is the Capacity Obligation Percentage, applicable to Trader involved in Firm Export, corresponding to period "p" as provided in Sub-Section 18.2.4.
- $Tloss_p$ is the value of the cap (expressed in percentage) on Transmission losses of NTDC as determined by the Authority in the latest tariff determination;
- RM_p is the Reserve Margin applicable to period "p".

10.5. EX-ANTE VERIFICATION OF CAPACITY OBLIGATIONS (CURRENT AND SUBSEQUENT YEARS)

10.5.1. GENERAL

- 10.5.1.1. Every year prior to [April 31st], the Market Operator shall verify compliance with the Capacity Obligations of Market Participants which have such obligations, for the current and following years. The number of years to be verified shall be the same as provided in Sub-Section 10.3.1, for which the forecasts were submitted.
- 10.5.1.2. The Market Operator shall communicate the preliminary results of the verification to each relevant Market Participant. In case a Market Participant considers that an error or discrepancy exists in the calculations done by the Market Operator for the verification of compliance with the Capacity Obligations, it shall submit to the Market Operator a written Review Request within ten [10] Business Days of receipt of such communication from the Market Operator.
- 10.5.1.3. The Review Request shall clearly state the reasons for the claim, the items containing an error, inaccuracy or mis-interpretation, accompanied with supporting documents.
- 10.5.1.4. After receipt of the Review Request, the Market Operator shall review the request and decide whether there is any error or discrepancy in the calculations that it has performed and if required, it may hold a meeting with the relevant Market Participant to settle the matter. If the Market Operator does not agree with the claim, it shall intimate the same to the relevant Market Participants along with reasons thereof.
- 10.5.1.5. Where the market operator, after review of the calculations finds that there is an error or discrepancy as claimed by the relevant Market Participant, it shall rectify the error and shall inform the concerned Market Participant accordingly.

10.5.2. INFORMATION REQUIRED FROM MARKET PARTICIPANTS

- 10.5.2.1. Every year, before [Jan 31st], the Market Operator shall require each Market Participant, as mentioned in Clause 10.3.1.1 above, to submit an application containing information regarding Generation projects, planned or under construction, or Contracts with existing Generation Plants which may be taken into account for determining the Capacity allocated to such Market Participant.
- 10.5.2.2. Such application shall contain all supporting documents to demonstrate the project's firmness, including one or more of the following:
- a) for projects being developed by the Market Participants:
 - a.1. Temporary Firm Capacity Certificates or documents showing the submission of the application for issuance of such certificates;
 - a.2. EPC Contracts, clearly stating the project commissioning date; and
 - a.3. any other document the Market Participant considers appropriate to assess the actual status of the project construction.
 - b) For projects being developed or already developed by third parties, which have signed a Contract with the Market Participants, the duly signed Contract, clearly indicating the date at which these Contract will become effective and enforceable along with the associated Temporary Firm Capacity Certificates;



10.5.3. VERIFICATION OF THE SUBMITTED INFORMATION

10.5.3.1. The Market Operator shall review the submitted information for each project and determine whether such project may qualify for compliance with the Capacity Obligations. In conducting such assessment, the Market Operator may:

- a) request additional information, which shall be provided within the specified time;
- b) conduct assessments aimed at determining the accuracy of the submitted information; and/or
- c) request the advice of reputable experts on the cost of the applicant.

10.5.3.2. For projects or Contracts submitted by a Supplier of Last Resort, the Market Operator shall verify whether such project or Contract is included in the latest Power Acquisition Programme approved by the Authority, as per NEPRA Power Procurement Regulation, and in case the project or Contract is not included in such plan, it shall not be considered for compliance with Capacity Obligations. For projects or Contracts included in the Power Acquisition Programme, the project characteristics as well as the expected COD shall be the same. In case there are differences between the Power Acquisition Programme and the request made by the Supplier of Last Resort, regarding the project Capacity or the commissioning date, the lower value of Capacity and the later commissioning date shall be used by the MO and the matter shall also be intimated to the Authority.

10.5.3.3. Based on the analysis and evaluations performed, the Market Operator shall catalogue each project in any of the following three categories:

- a) Eligible for crediting Capacity, at the date requested by the Market Participant;
- b) Eligible for crediting Capacity, at a later date than the request made by the Market Participant;
- c) Not eligible for crediting Capacity.

10.5.3.4. Only the projects belonging to the first two categories will be considered for compliance with the Capacity Obligations of the involved Market Participant, as prescribed in Clause 10.5.3.3.

10.5.4. DETERMINATION OF COMPLIANCE WITH THE CAPACITY OBLIGATIONS

10.5.4.1. The Market Operator shall monitor compliance with the Ex-ante Capacity Obligations of each Market Participants, as mentioned in Clause 10.3.1.1 above, for each year in which the Market Participant has such obligations, through the comparison of two yearly values: the Capacity Obligation and the Credited Capacity of such Market Participant for each year.

10.5.4.2. The Capacity Obligation of each Market Participant, for each year in which this obligation exists, shall be determined by the Market Operator according to the provisions of Sub-Section 10.4.1, Sub-Section 10.4.2 or Sub-Section 10.4.3, as the case may be.

10.5.4.3. The Credited Capacity of each Market Participant, for the Ex-ante verification of its yearly obligations will be the sum of:

- a) Firm Capacity of Generation Plants owned by the Market Participant, which have been issued the corresponding Firm Capacity Certificates by the Market Operator, and not sold to other Market Participants through registered Contracts.



b) Explanation:

- c) The Credited Capacity to the Market Participants or BPC shall be calculated as the addition of the values stated in the Firm Capacity Certificates of all the Generation Units it owns, minus the Capacity sold, every year, to other Market Participants through registered Contracts.
- d) Capacity acquired through registered Contracts executed with Generators, Imports, or other Market Participants.

Explanation:

The Capacity Credited in this case shall be calculated as the yearly addition of the Capacity purchased through all the registered Contracts. The contracted Capacity shall be clearly stated during the registration of the Contract.

- e) Capacity which will be installed, by the Market Participant, or it will be acquired through Contracts from Generation Units which are under construction, provided such Contracts are considered eligible by the Market Operator, according to the provisions of Clause 10.5.3.3, such Capacity will be credited to the relevant Market Participant starting from the COD of the Generation Unit, as approved by the Market Operator.

The Capacity Credited in this case shall be determined based on:

- e.1. the values stated in the Temporary Firm Capacity Certificates, in cases in which the Market Operator has issued such certificates; or
- e.2. the declared Capacity to be installed, as per the application, as provided in Clause 10.5.3.3, multiplied by the Equivalent Availability Factor stated in Table I of Sub-Section 8.4.2.

10.5.4.4. In case the Credited Capacity of a Market Participant is above [98%] of the Capacity Obligation determined for such Market Participant, in all of the years evaluated, the obligation shall be considered fulfilled.

10.5.4.5. In the case the Credited Capacity of a Market Participant is lower than [98%] of the Capacity Obligation determined for such Market Participant, in one or more of the years evaluated, the obligation shall be considered not fulfilled.

10.5.4.6. The Market Operator shall categorize non-compliance with the Capacity Obligations of each Market Participant as:

- a) Minor non-compliance: Non-compliance with the ex-ante Capacity Obligations occurs only in one or two of the years being verified and, the difference between the Capacity Obligation and the Credited Capacity is below five percent [5%] during each year.
- b) Serious non-compliance: In case there is a non-compliance with the ex-post Capacity Obligations as per Clause 9.7.1.2 or a non-compliance with the ex-ante Capacity Obligation which cannot be categorized as Minor non-compliance.

10.6. DISSEMINATION OF THE RESULTS AND ACTIONS IN CASE OF NON-COMPLIANCE

10.6.1. COMPLIANCE WITH CAPACITY OBLIGATIONS REPORT

- 10.6.1.1. The Market Operator shall prepare a report titled as "Compliance with Capacity Obligations Report", including the calculations performed, the information being utilized and the results of the verification. The report shall contain separate sections for the ex-ante and ex-post verifications, and analysis and evaluations for each Market Participant individually along with a summary of the most important conclusions which shall be published on MO Website.

10.6.2. DISPUTE RESOLUTION

- 10.6.2.1. Any Market Participant, feeling aggrieved of the decision of the Market Operator regarding the compliance with the Capacity Obligations, may file a dispute with the Market Operator according to the provisions of Chapter 14.

10.6.3. ACTIONS TO BE TAKEN IN CASE OF NON-COMPLIANCE

- 10.6.3.1. The Market Operator shall issue a warning notice to all Market Participants which are involved in a Minor Non-compliance. In such notice, the Market Operator shall require the involved Market Participant, to solve the Non-compliance by contracting additional Firm Capacity or installing additional Generation. The Market Operator may not register any new Contract, other than Contracts for increasing the Credited Capacity of the concerned Market Participant, till the time the Non-compliance is resolved.
- 10.6.3.2. The Market Operator shall issue a Serious Non-Compliance Notice to all Market Participants which are involved in a Serious Non-compliance, requiring them to solve the Non-compliance within a specified timeframe, by contracting additional Capacity or installing additional Generation. Failure to comply with the requirement of the Serious Non-Compliance Notice shall constitute an Event of Default and shall be dealt with according to the provisions of Chapter 17. Such situation shall also be communicated to the Authority so that it may take appropriate action, including the imposition of penalties.
- 10.6.3.3. Till the time the Serious Non-compliance is fully resolved, the Market Operator may not register any new Contract, other than Contracts for increasing the Credited Capacity of the concerned Market Participant.



Chapter 11. YEARLY SETTLEMENT STATEMENTS (FOR BMC AND EXCESS LOSSES)

11.1. YEARLY SETTLEMENT

11.1.1. CONTENTS OF YEARLY SETTLEMENT STATEMENT

11.1.1.1. The Market Operator shall make yearly Settlement, for Balancing Mechanism for Capacity and Excess Losses, of each Market Participant or Service Provider, for the previous year, which may include, *inter alia*, the following:

- a) the Amounts Payable or Receivable by a Market Participant, as the case may be, for the participation in the Balancing Mechanism for Capacity;
- b) the Amounts Receivable by a Market Participant for the Excess Losses of one or more Transmission Service Providers, if applicable;
- c) The Amounts Payable by a Transmission Service Provider to the Market Operator for the Excess Losses if applicable;
- d) The Amounts Payable to or Amounts Receivable by a Market Participant due to a correction in the Balancing Mechanism for Capacity and/or the Excess Losses of a Transmission Service Provider, arising from Yearly Extraordinary Settlement Statement as per Sub-Section 11.4.4; and
- e) The Amount Payable to or Receivable by the Market Participant on account of accrued interest for previous late payments or default in making payments.

11.2. CHARGES AND COMPENSATIONS FOR EXCESS LOSSES OF A TSP

11.2.1. EXCESS LOSSES

11.2.1.1. The Market Operator shall determine the charges to be imposed on a Transmission Service Provider which had incurred, during the previous Fiscal Year, Transmission losses above the target which was determined by the Authority in the latest Tariff Determination for the relevant Transmission Service Provider.

11.2.1.2. Such Excess Losses shall be assessed and determined by the Market Operator based on the information provided by the Commercial Metering System, according to the provisions of Chapter 4.

11.2.2. ASSESSMENT OF THE ANNUAL LOSSES OF A TRANSMISSION SERVICE PROVIDER

11.2.2.1. The total Transmission losses of a Transmission Licensee shall be assessed by the Market Operator as:

$$TransLoss_k[MWh] = \sum_{h=1}^{h=n} \left(\sum_{\forall i \in MP_k} E_{MP_{i,k,h}} \right)$$

Where:

- $TransLoss_k$ are the total Transmission losses of the Transmission Service Provider k in the previous fiscal year, expressed in MWh;

- $E_{MP_i,k,h}$ is the Energy registered by the Commercial Metering System as per provisions of Chapter 4 at the Trading Point i , corresponding to the Transmission Service Provider k in the hour h ;
- $\forall i \in MP_k$ means all those Trading Points located at the boundary of the Transmission Service Provider k ;
- $\sum_{h=1}^{h=n} ()$ means the sum over the total number of hours of the previous fiscal year (8,760 or 8,784 hours, as the case may be).

11.2.2.2. Sign convention: For the application of the formula provided in Clause 11.2.2.1, the Energy registered at each Trading Point at each particular hour shall be considered positive if it is injected into the Transmission Network of Transmission Service Provider "k" and negative if it is withdrawn from such Transmission Network. In case a Metering Point records separate values for Energy injected and withdrawn, the sign convention shall apply accordingly for each recorded value at the particular hour.

11.2.3. CALCULATION OF TRANSMITTED ENERGY OF A TRANSMISSION SERVICE PROVIDER

11.2.3.1. The Market Operator shall determine the total Transmitted Energy of a Transmission Service Provider, for the previous fiscal year, by adding the total Energy injected into the Transmission Network of the relevant Transmission Service Provider. For such purpose, the Market Operator shall utilize the metering data submitted by the Metering Service Provider as per provisions of Chapter 4.

11.2.3.2. Total Transmitted Energy, for the Transmission Service Provider shall be assessed as:

$$11.2.3.3. TransEnergy_k [MWh] = \sum_{h=1}^{h=n} \left(\sum_{i \in MP_{G \rightarrow T}} E_{MP_i,k,h} \right)$$

Where:

- $TransEnergy_k$ is the total Transmitted Energy by the Transmission Service Provider k ;
- $E_{MP_i,k,h}$ is the Energy registered by the Commercial Metering System at the Metering Point i , corresponding to the Transmission Service Provider k in the hour h ;
- $\forall i \in MP_{G \rightarrow T}$ means all those boundary points between a Transmission Network and
 - a Generator; or
 - a Distribution Network; or
 - a BPC; or
 - an Import point; or
 - a Transmission Network of another Transmission Service Provider
 in which the Energy is injected into the Transmission Network of the Transmission Service Provider k (positive value according to the sign convention provided in Clause 11.2.2.2), during hour h ;
- $\sum_{h=1}^{h=n} ()$ means the sum over the total number of hours of the previous fiscal year (8,760 or 8,784 hours, as the case may be).




11.2.4. CALCULATION OF ANNUAL LOSSES PERCENTAGE OF A TRANSMISSION SERVICE PROVIDER

11.2.4.1. The Market Operator shall determine the Annual Loss expressed in percentage of a Transmission Service Provider, for the previous fiscal year, by dividing the total Transmission losses by the Transmitted Energy of the relevant Transmission Service Provider.

$$AnnualLoss_k[\%] = \frac{TransLoss_k}{TransEnergy_k[MWh]} * 100$$

11.2.5. DETERMINATION OF EXCESS LOSSES

11.2.5.1. In case the Transmission Service Provider's Annual Loss Percentage is lower or equal to the allowed losses, as determined by the Authority in the latest Tariff Determination for the relevant Transmission Service Provider, the Excess Losses will be zero for such Transmission Service Provider and there will be no charges imposed on it. Otherwise, the amount of excess losses (in MWh) shall be calculated as:

$$TSP\ Excess\ Losses\ (MWh)_k = TransLoss_k[MWh] - AllowLoss(\%)_k * TransEnergy_k[MWh]$$

Where:

- $TSP\ Excess\ Losses_k$ is the amount of Excess Losses of the Transmission Service Provider k , expressed in MWh;
- $TransLoss_k$ are the total Transmission losses of the Transmission Service Provider k in the previous fiscal year, expressed in MWh, calculated pursuant to Clause 11.2.2.1;
- $AllowLoss_k$ is the allowed losses, expressed in percent, as determined by the Authority in the latest Tariff Determination of Transmission Service Provider k ;
- $TransEnergy_k$ is the total Transmitted Energy by the Transmission Service Provider k in the previous fiscal year, expressed in MWh, calculated as per Clause 11.2.3.2.

11.2.6. DETERMINATION OF CHARGES TO BE IMPOSED ON A TSP FOR EXCESS LOSSES:

11.2.6.1. The charges for Excess losses of a Transmission Service Provider shall be determined multiplying the Excess Losses, expressed in MWh, by the weighted average System Marginal Price of the previous fiscal year.

11.2.6.2. The yearly weighted average System Marginal Price, expressed in PKR/MWh, shall be calculated as:

$$YMP[PKR/MWh] = \frac{\sum_{h=1}^{h=n} (TotDem_h[MWh] * Marg_h[PKR/MWh])}{\sum_{h=1}^{h=8760} TotDem_h[MWh]}$$

Where:

- YMP is the weighted average yearly System Marginal Price, for the previous fiscal year, expressed in PKR/MWh;
- $Marg_h$ is the System Marginal Price, for the hour h , calculated pursuant to Sub-Section 5.5;
- $TotDem_h$ is the total Energy demanded by Market Participants in hour h , calculated pursuant to Clause 5.3.2.2;




- $\sum_{h=1}^{h=n} ()$ means the sum over the total number of hours of the previous fiscal year (8,760 or 8,784 hours, as the case may be).

11.2.6.3. The Charges to be imposed on the Transmission Service Provider which has incurred such Excess Losses, for the previous fiscal year, shall be determined as:

$$ExcLossCharge_k[PKR] = YMP \left(PKR / MWh \right) \times TSP \text{ Excess Losses}_k(MWh)$$

Where:

- $ExcLossCharge_k$ is the charge to be imposed on the Transmission Service Provide k, for Excess Losses, for the previous fiscal year;
- YMP is the weighted average yearly System Marginal Price, for the previous fiscal year, as provided in Clause. 11.2.6.2;
- $TSP \text{ Excess Losses}_k$ is the amount of Excess Losses of the Transmission Service Provider k, expressed in MWh, in the previous fiscal year, as provided in Clause 11.2.5.1.

11.2.7. CALCULATION OF COMPENSATION TO MARKET PARTICIPANTS REPRESENTING DEMAND

11.2.7.1. The amounts received from the Transmission Service Providers for Excess Losses shall be transferred to the Market Participants in the Yearly Settlement Statements, proportionately to the total Energy withdrawn by each Market Participant, from the Grid System, in the previous fiscal year.

11.2.7.2. The total Energy withdrawn from the Grid System, by a Market Participant shall be determined as:

$$YEW_j[MWh] = \sum_{h=1}^n \left[\sum_{\forall i \in MP_j} (Act_E_{i,h}[MWh] * N_{i,h}) \right]$$

Where:

- YEW_j is the total Energy withdrawn by Market Participant "j" from the Grid System, in the previous fiscal year, expressed in MWh;
- $Act_E_{i,h}$ is the Energy interchanged at the Trading Point i in the hour h , calculated pursuant to Clause 5.4.2.2.a);
- $N_{i,h}$ is a number which takes the values of:
 - -1 if the value of $Act_E_{i,h}$ is negative (Energy flowing out of the Transmission or Distribution Network, according to the sign convention provided in Clause 5.3.1.4);
 - 0 otherwise;
- $\forall i \in MP_j$ means all those Trading Points in which Market Participant j is involved.

11.2.7.3. The compensation a Market Participant will receive for Excess Losses of the Transmission Service Providers will be determined as:

$$CA_EL_j[PKR] = \frac{YEW_j[MWh]}{\sum_{\forall j} YEW_j[MWh]} * \sum_k ExcLossCharge_k[PKR]$$

Where:

- CA_{EL_j} is the amount to be compensated to Market Participant j expressed in PKR;
- $ExcLossCharge_k$ is the charge imposed on Transmission Service Provider k , pursuant to 11.2.7.2;
- YEW_j is the Energy withdrawn by Market Participant j from the Grid System, in the previous fiscal year, expressed in MWh;
- Σ_k means the sum over all Transmission Service Providers;
- Σ_j means the sum over all Market Participants representing demand.

11.2.7.4. The Amounts Payable by a Transmission Service Provider shall be recovered in six [6] equal monthly instalments and the Amounts Receivable by Market Participants shall be paid to the relevant Market Participants in same manner. The Transmission Service Provider shall deposit a Security Cover for an amount not lower than the amount equal to [2] monthly instalments after issuance of the Final Yearly Settlement Statement and then shall deposit the remaining amount in four [4] equal monthly instalments subject to adjustments that arise due to any Extraordinary Settlement Statement.

11.3. APPLICABLE TAXES

11.3.1. APPLICABILITY OF TAXES

11.3.1.1. All Settlements calculated by the Market Operator pursuant to this Chapter shall be subject to the applicable taxes as per Applicable Law.

11.4. SETTLEMENT STATEMENTS

11.4.1. PRELIMINARY YEARLY SETTLEMENT STATEMENTS

11.4.1.1. Within ten [10] Business Days of intimation of the results of the Balancing Mechanism for Capacity to the Market Participants or within one [1] month of completion of a fiscal year, the Market Operator shall send, through electronic means, to each Market Participant and to the Service Providers, a Preliminary Yearly Settlement Statement.

11.4.1.2. For Market Participants, the Preliminary Yearly Settlement Statement shall, *inter alia*, include:

- a) the Amounts Payable and Amounts Receivable in the Balancing Mechanism for Capacity;
- b) the compensation for Excess Losses for the previous fiscal year, if applicable;
- c) the interest accrued and payable for previous late payments or default in making payments; and
- d) if applicable, the corrections resulting from an Extraordinary Yearly Settlement Statement.

11.4.1.3. For Transmission Service Providers, the Preliminary Settlement Statement shall, *inter alia*, include:

- a) the Amount Payable to the Market Operator for Excess Losses for the previous fiscal year, if applicable;
- b) if applicable, the corrections resulting from an Extraordinary Yearly Settlement Statement; and

- c) the interest payable for previous late payments or default in making payments.

11.4.2. CLAIMS AGAINST THE PRELIMINARY YEARLY SETTLEMENT STATEMENTS

- 11.4.2.1. Where a Market Participant or a Transmission Service Provider considers that an error or discrepancy exists in the Preliminary Yearly Settlement Statement, it shall submit to the Market Operator a written Review Request within five [5] Business Days of receipt of the Preliminary Yearly Settlement Statement.
- 11.4.2.2. The Review Request shall clearly state the issuance date of the Preliminary Yearly Settlement Statement, the item claimed, the reasons for the claim, the amount claimed, and shall be accompanied with supporting documents.
- 11.4.2.3. After receipt of the Review Request, the Market Operator shall review the request and decide whether there is any error or discrepancy in the Preliminary Yearly Settlement Statement and if required, it may hold a meeting with the relevant Market Participant or Transmission Service Provider to settle the matter. If the Market Operator does not agree with the Review Request, it shall intimate the same to the relevant Market Participants or Transmission Service Providers along with reasons thereof.
- 11.4.2.4. Where the Market Operator, after review of the Preliminary Yearly Settlement Statement finds that there is an error or discrepancy as claimed by the relevant Market Participant or Transmission Service Provider, it shall rectify the error before issuing the Final Yearly Settlement Statement and shall inform all the relevant Market Participants and Transmission Service Providers accordingly.

11.4.3. FINAL YEARLY SETTLEMENT STATEMENTS

- 11.4.3.1. Within twenty-five [25] Business Days after issuance of the Preliminary Yearly Settlement Statement, the Market Operator shall issue the Final Yearly Settlement Statement to each Market Participant and Transmission Service Provider, using a format similar to the Preliminary Yearly Settlement Statement.
- 11.4.3.2. A Market Participant or a Transmission Service Provider may challenge the Final Yearly Settlement Statement along with reasons thereof within ten [10] Business Days of its issuance. The challenge may relate to:
 - a) the metered values and contracted quantities of Capacity; or
 - b) the settled amounts in the Balancing Mechanism for Capacity, Default Interest for late payments or any other item which has been included in the Final Yearly Settlement Statement.
- 11.4.3.3. The Market Operator and the Market Participant or Transmission Service Provider shall make reasonable efforts to mutually settle the matter within thirty [30] Business Days after the challenge is submitted to the Market Operator as per dispute resolution mechanism provided in Chapter 14.

11.4.4. EXTRAORDINARY YEARLY SETTLEMENTS

- 11.4.4.1. Market Operator shall issue an Extraordinary Yearly Settlement Statement for a year, where:
 - a) a Market Participant or a Transmission Service Provider and the Market Operator settle



a challenge made under Clause 11.4.2.4, in an amicable manner that results in an amount which is different from the Final Yearly Settlement Statement; or

- b) the dispute is settled according to the dispute resolution mechanism which requires modification in the amounts included in the Final Yearly Settlement Statement.

11.4.4.2. The Extraordinary Settlement Statement as provided in Clause 11.4.4.1 shall supersede the issued Final Yearly Settlement Statement for such year.

11.4.4.3. The Market Operator shall calculate, for each Market Participant, the difference between the Extraordinary Yearly Settlement Statement and the Final Yearly Settlement Statement originally issued according to Sub-Section 11.4.1, and shall decide whether to include such amounts in the next Preliminary and Final Yearly Settlement Statement, as the case may be, or to issue the notifications as per Section 11.5 below.

11.4.5. FAILURE OF THE MARKET SETTLEMENT SYSTEM

11.4.5.1. In case of an emergency or failure of the Market Settlement System, the Market Operator may issue an Estimated Yearly Settlement Statement and may modify the schedule for issuing Preliminary Yearly Settlement Statements or Final Yearly Settlement Statements, as the case may be. In such cases, the Market Operator shall inform all Market Participants and Service Providers the temporary procedural changes as soon as possible. The Market Operator shall immediately inform the Authority of any emergency resulting in failure of the Market Settlement System along with the estimated time period required to address such emergency or failure.

11.5. DEBIT AND CREDIT NOTIFICATIONS

11.5.1. NOTIFICATIONS TO MARKET PARTICIPANTS

11.5.1.1. The Market Operator, within five [5] Business Days after issuance of the Final Yearly Settlement Statement or Extraordinary Yearly Settlement Statement, as the case may be, shall:

- a) issue a Debit Notification to all Market Participants and Transmission Service Providers which have to pay the Amounts Payable as per the Final Yearly Settlement Statement or the Extraordinary Yearly Settlement Statement, as the case may be. For the avoidance of doubt, in the Amounts Payable shall exclude the amounts already paid to the Market Operator before the final administration of the Balancing Mechanism for Capacity.
- b) issue a Credit Notification to all Market Participants or the Transmission Service Providers who will receive a payment as per the Final Yearly Settlement Statement or the Extraordinary Yearly Settlement Statement, as the case may be.

11.5.1.2. The Market Operator, in this process, shall act as an independent entity, without assuming any payment responsibility. Obligation of payment shall remain with the relevant Market Participants. For the avoidance of doubt, the Market Operator shall not be held liable for any kind of non-payment by any of the Market Participants or Transmission Service Providers.



11.5.2. DISAGREEMENTS WITH THE NOTIFICATIONS

- 11.5.2.1. Each Market Participant or Transmission Service Provider which receives a Debit or Credit Notification, as per clause 11.5.1.1 above, shall pay the required amount, and shall be entitled to receive the amount, shown in the Final Yearly Settlement Statement or the Extraordinary Yearly Settlement Statement, as the case may be, on the Payment Due Date, whether or not there is any dispute regarding the Amount Payable or the Amount Receivable.
- 11.5.2.2. The payment of the amount by the Market Participant or Transmission Service Provider or the Market Operator, as the case may be, pursuant to clause 11.5.2.1 shall not prejudice the right of the Market Participant or the Transmission Service Provider to seek resolution of the dispute pursuant to Chapter 14.



Chapter 12. PAYMENT SYSTEM

12.1. COMPONENTS OF THE PAYMENT SYSTEM

12.1.1. MARKET OPERATOR BANK ACCOUNTS

- 12.1.1.1. The Market Operator shall open within [2] months of issuance of the Licence and maintain such number of bank accounts as mentioned in Clause 12.1.1.3, in order to perform its duties as mandated under this Code. A separate ledger account shall also be opened for each Market Participant for the accounts as referred to in Clause 12.1.1.3.
- 12.1.1.2. The Authority may allow Market Operator to recover costs incurred in connection with opening, maintaining and administering the bank accounts through the Market Operator Fee.
- 12.1.1.3. The Market Operator shall hold and operate the following separate bank accounts:
- a) Market Operator Settlement Account for Monthly Settlements, to and from which payments according to this Code, shall be made, which includes payments for:
 - a.1. The Balancing Mechanism for Energy;
 - a.2. Ancillary Services and Must-Run Generation;
 - a.3. Market Operator Fee;
 - a.4. Penalties and Default Interest for payments not done at the Payment Date for monthly Settlements, calculated in accordance with Clause 12.3.6;
 - a.5. other amounts included in a Debit/Credit Notification issued by the Market Operator which relates to monthly Settlements, in accordance with this Code;
 - a.6. any amounts deposited by the Market Participants to the Market Operator in respect of initial amount of Security Cover for monthly Settlements or Guarantee Amount or as replenishment of the Security Covers for monthly Settlements or Guarantee Amount, shall be deposited in this Account.
 - b) Market Operator Settlement Account for Annual Settlements, to and from which payments according to this Code, shall be made, which includes payments for:
 - b.1. The Balancing Mechanism for Capacity;
 - b.2. The Settlement of Excess Losses;
 - b.3. Default Interest for payments not done at the Payment Date for annual Settlements, calculated in accordance with Clause 12.3.6.
 - c) Market Operator Miscellaneous Account, in accordance with Clause 12.1.1.5.
 - d) Market Operator Settlement Guarantee Fund Account, in accordance with Clause 12.1.1.6.
 - e) Market Operator Credit Cover Account for Monthly Settlements in accordance with Clause 12.1.1.7.
 - f) Market Operator Credit Cover Account for Annual Settlements in accordance with Clause 12.1.1.8.
 - g) Market Operator operational accounts, in accordance with Clause 12.1.1.6.



- 12.1.1.4. All Market Participants or Transmission Service Providers shall make all payments due under the Debit Notifications into the Market Operator Settlement Account for Monthly Settlement or the Market Operator Settlement Account for Annual Settlement, as the case may be, by Close of Banking Business on the Payment Due Date. The Market Operator shall pay to the Market Participants or the Transmission Service Providers from the Market Operator Settlement Account for Monthly Settlement or the Market Operator Settlement Account for Annual Settlement, as the case may be, under Credit Notifications, by Close of Banking Business on the Clearing Day or any other date as specified in the Credit Notification.
- 12.1.1.5. The Market Operator shall operate the Market Operator Miscellaneous Account in the following manner:
- a) any amounts paid to the Market Operator in respect of Default Interests as deposited in the Market Operator Settlement Account for Monthly Settlements or Market Operator Settlement Account for Annual Settlements, as the case may be, shall be transferred from such account to the Market Operator Miscellaneous Account;
 - b) Default Interest for payments not received at the Payment Due Date, calculated in accordance with Clause 12.3.6 and the funds referred to in paragraph 12.1.1.5.a) above, shall first be used as compensation for any expenses, loss or costs incurred by the Market Operator on account of Non-Compliance by any Market Participant or Service Provider.
- 12.1.1.6. The Market Operator shall operate the Settlement Guarantee Fund Account in the following manner:
- a) any amounts paid to the Market Operator in respect of initial Guarantee Amount or as replenishment of the Guarantee Amount, when deposited in Market Operator Settlement Account for Monthly Settlements shall be transferred from such account to the Market Operator Settlement Guarantee Fund Account.
 - b) on the Clearing Day, if needed, the funds available in the Settlement Guarantee Fund account will be transferred to the Market Operator Settlement Account for Monthly Settlements in order to make payments as per relevant Settlement Statements.
 - c) the amounts used by the Market Operator from the Settlement Guarantee Fund Account shall be replenished upon receipt of payments from the Market Participants.
- 12.1.1.7. The Market Operator shall operate the Credit Cover Account for Monthly Settlements in the following manner:
- a) any amounts paid to the Market Operator in respect of initial amount of Security Cover for monthly Settlements or as replenishment of the same, when deposited in Market Operator Settlement Account for Monthly Settlements, shall be transferred from such account to the Market Operator Credit Cover Account for Monthly Settlements.
 - b) on the Clearing Day, as per requirement, the funds available in the Credit Cover Account for Monthly Settlements account will be transferred to the Market Operator Settlement Account for Monthly Settlements in order to make payments as per monthly Settlement Statements.
 - c) the amounts used by the Market Operator from the Credit Cover Account for Monthly Settlements shall be replenished upon receipt of payments from the Market Participants.
- 12.1.1.8. The Market Operator shall operate the Credit Cover Account for Annual Settlements in the following manner:
- a) any amounts paid to the Market Operator in respect of Security Cover for Annual Settlements or as replenishment of the same, when deposited in Market Operator

Settlement Account for Annual Settlements, shall be transferred from such account to the Market Operator Credit Cover Account for Annual Settlements.

- b) on the Clearing Day, as per requirement, the funds available in the Credit Cover Account for Annual Settlements account will be transferred to the Market Operator Settlement Account for Annual Settlements in order to make payments to Market Participants or Transmission Service Providers as per annual Settlement Statements.
- c) the amounts used by the Market Operator from the Credit Cover Account for Annual Settlements shall be replenished upon receipt of payments from the Market Participants or Transmission Service Providers, as the case may be.

12.1.1.9. In addition to the bank accounts mentioned above, the Market Operator shall maintain and operate such number of bank accounts in scheduled banks as are required to manage its corporate finance.

12.1.2. MARKET PARTICIPANT'S BANK ACCOUNT.

12.1.2.1. Each Market Participant, except Electric Power Suppliers segregated from EX-WAPDA DISCOs, shall maintain a bank account with a scheduled bank(s) approved by the Market Operator from which payments to, and from, the Market Operator shall be made pursuant to this Code. Such bank account shall have standing instructions issued in favour of Market Operator with funded facility to make payments as per the Settlement Statement issued by the Market Operator. No Market Participant shall make any change to its bank account without obtaining prior permission of the Market Operator.

12.1.3. SERVICE PROVIDER'S ACCOUNT.

12.1.3.1. Each Transmission Service Provider and, if applicable, Metering Service Provider shall maintain a bank account, with a scheduled bank(s) approved by the Market Operator from which payments to, and from, the Market Operator shall be made pursuant to this Code. Such bank account shall have standing instructions issued in favour of Market Operator with funded facility to make payments as per the Settlement Statement issued by the Market Operator. The Transmission Service Provider and Metering Service Providers shall not make any change to their bank accounts without obtaining prior permission of the Market Operator.

12.1.4. DESIGNATED ACCOUNT OF ELECTRIC POWER SUPPLIERS SEGREGATED FROM EX-WAPDA DISCOs FOR MARKET SETTLEMENTS.

12.1.4.1. The mechanism provided below shall take effect only after the Ex-WAPDA DISCOs in their role as Suppliers of Last Resort have registered Bilateral Contracts other than Legacy Contracts and the Market Operator has been established as a separate legal entity. Till such time, any amount that arise due to Settlement of Legacy Contracts shall be paid to or paid by the Special Purpose Agent.

12.1.4.2. Each EX-WAPDA DISCOs in their role as Supplier of Last Resort shall open and/or maintain a Designated Account for the purposes of settlements with the Market Operator as per this Code in a Designated Bank having a minimum long term credit rating of "A" and above as published by the State Bank of Pakistan that receive, accept and process immediately any payment in accordance with the irrevocable mandate to operate in accordance with the standing instruction given in Clause 12.1.4.6.

- 12.1.4.3. The Market Operator, each Electric Power Supplier/DISCO and the Designated Bank shall enter into an agreement to operate the Designated Account as per the terms and condition agreed and provision of Clause 12.1.4.6.
- 12.1.4.4. Each Designated Account shall receive a significant portion, to be determined on case to case basis, of the revenues from sale of electric power through main Revenue Collection Bank Accounts.
- 12.1.4.5. The Designated Account shall be operated in accordance with the standing instructions, issued prior to CMOD, by the Market Operator and the relevant Electric Power Supplier jointly, as provided in Clause 12.1.4.6, as well as the terms and conditions of the agreement entered into among the Market Operator, the Designated Bank and the relevant Electric Power Supplier for disbursement of payments to the Market Operator and the Electric Power Supplier. Such standing instructions shall be reviewed on periodic basis by the Market Operator and the relevant Electric Power Supplier jointly and necessary amendments shall be made.
- 12.1.4.6. The Designated Bank shall be responsible for the timely disbursement of the payments from the Designated Account of such Electric Power Supplier to the Market Operator Settlement Accounts on receipt of instructions from the Market Operator and the relevant Electric Power Supplier as stated below:
- a) the Designated Bank shall order the transfer of payments as per the instructions issued by the Market Operator for the payment of amounts on account of Settlement Guarantee Fund to the Market Operator Settlement Account for Monthly Settlements.
 - b) when funds remain in the Designated Account after payment of amounts on account of Settlement Guarantee Fund under Clause 12.1.4.6.a) above, the Designated Bank shall order the transfer of payments on account of the initial Security Cover as instructed by the Market Operator, to the Market Operator Settlement Account for Monthly Settlements.
 - c) when funds remain in the Designated Account after payment of amounts on account of initial Security Cover under Clause 12.1.4.6.b) above, the Designated Bank shall order the transfer of payments on account of any instruction issued by the Market Operator pursuant to any Settlement Statement and the resulting Debit Notifications to the Market Operator's Settlement Account for Monthly Settlement or Market Operator's Settlement Account for Annual Settlement, as the case may be.
 - d) when funds remain in the Designated Bank Account after payment of amount on account of instruction issued by the Market Operator under Clause 12.1.4.6.c) above, the Designated Bank shall order the transfer of payments as instructed by the Market Operator on account of any periodic invoice/Debit Notification for deposit of any penalties or Default Interest to the Market Operator's Settlement Account for Monthly Settlement or Market Operator's Settlement Account for Annual Settlement, as the case may be.
 - e) when funds remain in the Designated Bank Account after payment of the amounts specified in the Debit Notification by Market Operator under Clause 12.1.4.6.d) above, the Designated Bank shall act in accordance with the existing instructions of the relevant Electric Power Supplier.

- 12.1.4.7. Each Designated Bank shall issue an irrevocable mandate applicable to Designated Bank Accounts, in accordance with the format mutually agreed by the Market Operator and the Electric Power Supplier/DISCO, to receive, accept and immediately process any payment requirement that is received from the Market Operator provided that such payment requirement is fully consistent with the standing instructions given in Clause 12.1.4.6.
- 12.1.4.8. After the issuance of the invoices/Debit Notifications by the Market Operator as per this Code, the Designated Bank shall determine if there are enough funds in its Designated Bank Account to afford the required payment to satisfy the payment obligations priority in accordance with Clause 12.1.4.6.
- 12.1.4.9. Whenever the remaining funds in Designated Account are, or deemed to be, insufficient to comply with such obligations, the Designated Bank shall inform the relevant Electric Power Supplier and the Electric Power Supplier shall be responsible for depositing the required difference before the Payment Due Date.
- 12.1.4.10. The standing instructions given in Clause 12.1.4.6 shall remain applicable till the Payment Due Date and no funds shall be transferred from the Designated Account for any other purpose till the payments are made as per priority given in Clause 12.1.4.6.
- 12.1.4.11. Actions at the Payment Due Date:
- a) At the Payment Due Date, the Designated Bank shall execute the irrevocable mandate of transferring in accordance with Clause 12.1.4.6, provided the Designated Account has enough funds at this moment, as to pay in full such amount.
 - b) In the case that, after the Designated bank has executed the irrevocable mandates transferring the amounts to the respective parties in accordance with priority given in Clause 12.1.4.6, there are additional funds remaining in such account, the Designated Bank shall execute orders issued by the respective Electric Power Supplier.

12.2. MARKET OPERATOR PAYMENTS CALENDAR

12.2.1. CONTENTS OF THE MARKET OPERATOR PAYMENTS CALENDAR

- 12.2.1.1. Each year, the Market Operator shall prepare a draft Market Operator's Payments Calendar for the following fiscal year showing:
- a) the dates on which the Market Operator will issue Preliminary Settlement Statements (monthly and yearly) to all Market Participants and/or Transmission Service Providers.
 - b) the dates on which the Market Operator will issue Final Settlement Statements (monthly and yearly) to all Market Participants and/or Transmission Service Providers;
 - c) the dates on which the Market Operator will issue Debit Notifications to Market Participants and/or Transmission Service Providers;
 - d) the dates when Market Participants and/or Transmission Service Providers from whom money is owed are required to make payments into the Market Operator Settlement Accounts, in accordance with the Debit Notifications issued;
 - e) the dates when the Market Participants and/or Transmission Service Providers to whom money is owed in accordance with the Credit Notifications will receive payments from the Market Operator Settlement Account; and
 - f) provided that for the first fiscal year following the CMOD, the Market Operator's Payments Calendar shall be established pursuant to Sub-Section 12.2.3.

12.2.1.2. The Market Operator may change the contents or format of the Market Operator's Payments Calendar for future years upon prior written notification to Market Participants and Transmission Service Providers.

12.2.2. DATES FOR THE MARKET OPERATOR'S PAYMENTS CALENDAR

12.2.2.1. Subject to Sub-Section 12.2.3, on June 1st of each year, the Market Operator shall publish on the MO Website, a draft of the Market Operator's Payments Calendar for the following fiscal year. Any Market Participant may submit comments to the Market Operator within [10] Business Days after such publication.

12.2.2.2. No later than [June 25th] of each year, the Market Operator shall publish on the MO Website, the final version the Market Operator's Payments Calendar for the following fiscal year, after considering the comments received pursuant to Clause 12.2.1.1.

12.2.2.3. The final Market Operator's Payments Calendar, made available in accordance with Clause 12.2.2.2 or Sub-Section 12.2.3, as the case may be, shall be binding on the Market Operator and on all Market Participants and Transmission Service Providers for the relevant fiscal year.

12.2.3. FIRST MARKET OPERATOR PAYMENT CALENDAR

12.2.3.1. Within fifteen [15] Business Days of the CMOD, the Market Operator shall publish the first Market Operator's Payments Calendar on the MO Website. This first Market Operator's Payments Calendar shall be followed by the Market Operator for the remaining period of the fiscal year.

12.2.3.2. Within five [5] Business Days following the publication of the first Market Operator's Payments Calendar, the Market Participants or Transmission Service Provider shall submit their comments to the first Market Operator's Payments Calendar notified by the Market Operator pursuant to Clause 12.2.3.1 above.

12.2.3.3. Within [5] Business Days of receipts of comments from the Market Participants or Transmission Service Providers pursuant to Clause 12.2.3.2 and taking into account their comments, the Market Operator shall amend the first Market Operator's Payments Calendar, if required, and notify the Market Operator's Payments Calendar for the remaining part, if any, of the first fiscal year and the next following fiscal year.

12.3. PAYMENT PROCEDURES

12.3.1. PAYMENT PROCESS FOR MONTHLY SETTLEMENTS

12.3.1.1. On the Clearing Day:

- a) the Market Operator shall order the relevant bank to transfer the funds from the Market Operator Credit Cover Account for Monthly Settlement to the Market Operator Settlement Account for Monthly Settlements as per the relevant Settlement Statements.
- b) while making such payments to the Market Participants, the Market Operator shall ensure proper accounting of the Credit Cover Account for Monthly Settlement and utilize the amounts deposited by the Market Participants from whom the money is owed to Market Operator first;
- c) where the money deposited by such Market Participants, who owe money to the Market Operator, is not enough to settle the amounts payable under the Credit Notifications, the



Market Operator may utilize other monies available in the Credit Cover Account for Monthly Settlement to bridge the gap and settle all Credit Notifications in full;

- d) where the total funds available in the Credit Cover Account for Monthly Settlement are not sufficient to make full payments to the Market Participants under the Credit Notifications, the Market Operator may utilize the balance available in the Settlement Guarantee Fund to bridge the gap in order to make full payment to the relevant Market Participants.
- e) the Market Operator shall make payments to the relevant Market Participants from the Market Operator Settlement Account for Monthly Settlements, in accordance with the Credit Notifications;

12.3.1.2. On the next Business Day following the Clearing Day, the Market Operator shall issue Debit Notifications to all Market Participants who owe money to the Market Operator requiring them to pay the required amounts by the Payment Due Date. Any late payment from the Payment Due Date shall attract Default Interest.

12.3.1.3. Each Market Participant shall remit to the Market Operator Settlement Account for Monthly Settlements the amount shown on the Debit Notification, as payable by the Market Participant, by Close of Banking Business on the Payment Due Date.

12.3.1.4. As the payments are received in the Market Operator Settlement Account for Monthly Settlements, the Market Operator shall order the relevant bank to the transfer of the amounts to the Market Operator Credit Cover Account for Monthly Settlements first and then, if any amount was utilized from Settlement Guarantee Fund as per Clause 12.3.1.1.d), the same amount shall be deposited back in the Settlement Guarantee Fund Account.

12.3.2. PAYMENT PROCESS FOR YEARLY SETTLEMENTS

12.3.2.1. On the Clearing Day:

- a) the Market Operator shall order the relevant bank to transfer the funds from the Market Operator Credit Cover Account for Yearly Settlement to the Market Operator Settlement Account for Yearly Settlements as per the relevant Settlement Statements.
- b) while making such payments to the Market Participants and/or Transmission Service Providers, the Market Operator shall ensure proper accounting of the Credit Cover Account for Yearly Settlement and utilize the amounts deposited by the Market Participants from whom the money is owed to Market Operator;
- c) where the money deposited by such Market Participants and/or Transmission Service Provider, who owe money to the Market Operator, is not enough to settle the amounts payable under the Credit Notifications, the Market Operator may reduce payments to the Market Participants and/or the Transmission Service Providers on pro-rata basis while taking into account the shortfall amount;
- d) the Market Operator shall make payments to the relevant Market Participants or Transmission Service Providers, as the case may be, from the Market Operator Settlement Account for yearly Settlements, in accordance with the Credit Notifications;

12.3.2.2. On the next Business Day following the Clearing Day, the Market Operator shall issue Debit Notifications to all Market Participants who owe money to the Market Operator requiring them to pay the required amounts by the Payment Due Date. Any late payment from the Payment Due Date shall attract Default Interest.



12.3.2.3. Each Market Participant and/or Transmission Service Provider shall remit to the Market Operator Settlement Account for Yearly Settlements the amount shown on the Debit Notification, as payable by the Market Participant and/or Transmission Service Provider, by Close of Banking Business on the Payment Due Date.

12.3.2.4. As the payments are received in the Market Operator Settlement Account for Yearly Settlements, the Market Operator shall order the transfer of the amounts to the Market Operator Credit Cover Account for Yearly Settlements. Any Default Interest on late payments shall be deposited into the Market Operator Miscellaneous Account.

12.3.3. DEFAULT IN MAKING PAYMENT BY A MARKET PARTICIPANT

12.3.3.1. In case of monthly Settlements, where a Market Participant defaults in making any payment due under the Debit Notification or otherwise, the Market Operator may make payments from the Settlement Guarantee Fund Account, provided that upon recovery or receipt of such amount from the defaulting Market Participant, such amount shall be deposited back to the Settlement Guarantee Fund Account. It is hereby clarified that payment of any amount from the Settlement Guarantee Fund Account shall be without prejudice to any enforcement action that may be taken by the Market Operator under Chapter 16.

12.3.3.2. Where there is no chance of recovery from the defaulting Market Participant, the Market Operator shall assess the impact on the Settlement Guarantee Fund and determine if any additional amounts are required to be deposited by all the Market Participants. If the Market Operator determines that additional amounts are required to be deposited in the Settlement Guarantee Fund, all Market Participants shall deposit the requisite amounts within specified timeframe.

12.3.3.3. In case of yearly Settlements, where a Market Participant or the Transmission Service Provider defaults in making any payment due under the Debit Notification or otherwise, the Market Operator may reduce payments to the Market Participants and/or Transmission Service Providers on pro-rata basis., provided that upon recovery or receipt of such amount from the defaulting Market Participant or Transmission Service Provider, such amount shall be paid to the relevant parties together with the Default Interest as received from the defaulting party. Provided that payment with the Default Interest will be prejudice to any enforcement action that may be taken by the Market Operator under Chapter 16.

12.3.4. SET-OFF.

12.3.4.1. The Market Operator is authorised to recoup, set off or apply any amount to which any defaulting Market Participant is, or will be, entitled, for or towards the satisfaction of any of that Market Participant's debts arising under the Settlement and billing process in accordance with Chapter 7 and Chapter 12, or any penalty imposed on the Market Participant by the Market Operator pursuant to Chapter 16. The oldest outstanding amounts will be settled first in the order of the creation of such debts.

12.3.5. ORDER OF PAYMENTS

12.3.5.1. The Market Operator shall apply payments received in respect of amounts owed to Market Participants to repay the relevant debts in the order of the creation of such debts.



12.3.6. DEFAULT INTEREST

- 12.3.6.1. All Market Participants or the Transmission Service Providers shall pay Default Interest on Default Amounts for the period commencing from the relevant Payment Due Date till the date on which the payment is actually received by the Market Operator, together with any related costs incurred by the Market Operator.
- 12.3.6.2. The Default Interest shall eventually be transferred to the Market Operator Miscellaneous Account.

12.3.7. OVERPAYMENTS

- 12.3.7.1. Where a Market Participant receives an overpayment as a result of an error on the part of the Market Operator, it shall intimate the Market Operator of such overpayment immediately, but not later than 24 hours of the knowledge thereof.
- 12.3.7.2. The Market Participant shall return the received overpayment in full by the next Business Day.
- 12.3.7.3. If the Market Participant has not remitted the amount back to the Market Operator within the next three [3] Business Days from the date of receipt of such overpayment, the Market Operator shall be entitled to charge Default Interest on the amount of the overpayment, until the amount is credited to the Market Operator Settlement Account, and the Market Operator shall be entitled to treat the overpayment, and any interest accruing thereon, as a Default Amount to which Clause 12.3.6.1 and 12.3.6.2 shall apply.

Chapter 13. GUARANTEES AND SECURITY COVERS

13.1. REQUIREMENTS FOR PROVIDING GUARANTEES AND SECURITY COVERS

13.1.1. GUARANTEES AND SECURITY COVERS TO BE PROVIDED BY MARKET PARTICIPANTS

13.1.1.1. Each Market Participant shall provide to the Market Operator appropriate Security Covers for guaranteeing their:

- a) Expected Amounts Payable as per Final Settlement Statements calculated pursuant to this Code;
- b) Expected Amounts Payable for the Capacity purchased in the Balancing Mechanism for Capacity calculated pursuant to this Code and included in the Yearly Settlement Statements (Final or Extraordinary, as the case may be);
- c) Expected Amounts Payable for other amounts as per Yearly Settlement Statements (Final or Extraordinary, as the case may be).

13.1.1.2. In addition to Security Covers required under Clause 13.1.1.1 above, the Market Participants shall also provide to the Market Operator their contribution to the Settlement Guarantee Fund (the Guarantee Amount) pursuant to clause 13.1.3.2.

13.1.1.3. Security Covers for guaranteeing payment obligations under the monthly Settlement Statements shall be provided by the Market Participants:

- a) before enrolment as a Market Participant, pursuant to Clause 2.3.4.1; and
- b) at the time of registration of a Contract to which the Market Participant is a party.

13.1.1.4. Security Covers for guaranteeing payment obligations under the Yearly Settlement Statement or Extraordinary Yearly Settlement Statement shall be provided by the Market Participants as stipulated in Clauses 9.5.1.1 or 9.5.1.5, as the case may be.

13.1.1.5. A Transmission Service Provider shall provide Security Cover for guaranteeing payment on account of Excess Losses under the Yearly Settlement Statement or Extraordinary Yearly Settlement Statement, as specified under Clause 11.2.7.4.

13.1.2. ACCEPTABLE FORM OF SECURITY COVERS AND GUARANTEE AMOUNT

13.1.2.1. Market Participants and Transmission Service Providers, which are required to provide a Security Cover and Guarantee Amount pursuant to the provisions of this Code for the amount determined by the Market Operator, shall provide and maintain such Security Covers and Guarantee Amounts, in cash.

13.1.3. SECURITY COVERS AND SETTLEMENT GUARANTEE FUND

13.1.3.1. The initial amount of Security Cover shall be calculated by the Market Operator for each Market Participant or other person separately and the relevant Market Participant or the other person shall be required to deposit such amount in the Market Operator Settlement Account for Monthly Settlements in the form of cash. Any return on the deposited amounts shall remain within the Market Operator Credit Cover Account for Monthly Settlement and may be utilized to cover any default risk in the Market, if any.



- 13.1.3.2. The initial Guarantee Amount or any revised Guarantee Amount shall be calculated by the Market Operator for all Market Participants and all Market Participants shall be required to deposit such amounts in the Market Operator Settlement Account for Monthly Settlement in the form of cash. The Market Operator shall be entitled to invest these funds in approved securities and/or other avenues of investments in accordance with the mechanism as may be approved by the MO Board of Directors and approved by the Authority in the market operator fee determination. The Market Operator shall ensure that while depositing these funds in alternative securities, the principal amount is not left at risk and shall constraint such investments to risk free securities, interest bearing accounts, saving accounts etc. Any returns on such investment will be retained in in the Settlement Guarantee Fund Account. Upon withdrawal of a Market Participant, only the principle amount deposited by such Market Participant, duly adjusted for any defaults during the previous period, will be returned to it.
- 13.1.3.3. The Market Operator shall make a CCOP describing a detailed methodology to determine the initial amount of Security Cover and Guarantee Amount and the revisions thereof.
- 13.1.3.4. Till the time, the CCOP is prepared as per Clause 13.1.3.3 above, as an interim measure, the following criteria shall apply for the calculation of initial amount of Security Covers:
- Subject to Clause 12.1.4.1, for EX-WAPDA DISCOs, the amount shall be equal to the percentage, as given in Table 2, of the average revenue over the last three [3] years period prior to the CMOD.
 - For KE, the amount shall be equal to the [0.05] % of the average revenue over the last [3] years period prior to the CMOD.
 - For other Market Participants, the initial amount shall be equal to the one-month maximum possible payable amount under a monthly Settlement Statement out of the upcoming six [6] months.

Table 2: Initial Security Cover amount of EX-WAPDA DISCOs

Sr. No.	Name of EX-WAPDA DISCOs	Security Cover Requirement (% of DISCO Revenue)
1	PESCO	0.013%
2	TESCO	0.006%
3	IESCO	0.003%
4	GEPCO	0.004%
5	LESCO	0.004%
6	FESCO	0.004%
7	MEPCO	0.005%
8	SEPCO	0.004%
9	HESCO	0.001%
10	QESCO	0.002%

- 13.1.3.5. For the Guarantee Amount to be deposited in the Settlement Guarantee Fund Account:

- For Ex-WAPDA DISCOs and K-Electric, the initial Guarantee Amount shall be equal to

1.5 times the initial Security Cover amount of each Market Participant calculated under Clause 13.1.3.4 above.

- b) For new Contracts of the Ex-WAPDA DISCOs, K-Electric and other Market Participants, a mechanism shall be developed by the Market Operator in the CCOP to be developed under Clause 13.1.3.3 to calculate the Guarantee Amount. This calculation shall be linked with the quantum of Imbalances, either positive or negative.

13.1.3.6. The Market Operator shall continuously monitor the sufficiency of the Security Cover Amounts and Guarantee Amount and shall be entitled to increase/decrease it.

13.1.3.7. Till the time the CCOP is prepared as per Clause 13.1.3.3, the Market Operator shall determine the revised amounts as under:

- a) On rolling basis, if the average amount to be paid by a Market Participant as per previous three [3] monthly Settlement Statements is higher than the amount deposited as Security Cover by such Market Participant, the Security Cover Amount requirement of such Market Participant shall be increased to the maximum Amount Payable during the same period.
- b) If the average amount to be paid by a Market Participant as per previous twelve [12] monthly Settlement Statements is lower than the amount deposited as Security Cover by such Market Participant, the Security Cover Amount requirement of such Market Participant will be decreased to the maximum Amount Payable during the same period which shall be capped at [Rs. 1.5] Millions.
- c) On rolling basis, if the average amount calculated by the Market Operator as per previous six [6] monthly Settlement Statements is higher than the amount deposited as Guarantee Amount by such Market Participant, the Guarantee Amount requirement of such Market Participant shall be increased to the maximum requirement during the same period.

13.1.3.8. The Market Operator shall inform the respective Market Participants whose Security Cover Amount and/or Guarantee Amount requirement has been increased along with reasons thereof. The Market Participants shall pay to the Market Operator any increase in its Security Cover Amount and/or Guarantee Amount as required by the Market Operator within the specified time.

13.1.3.9. In case of decrease in the Security Cover Amount of the Market Participant as per 13.1.3.7.b), the Market Operator shall inform the respective Market Participant of such decrease and stating whether such amount will be paid to it or the same will be adjusted in its settlements being done by the Market Operator.

13.2. SECURITY COVER FOR MONTHLY SETTLEMENTS

13.2.1. SECURITY COVER REQUIRED DURING ENROLMENT AS MARKET PARTICIPANT

13.2.1.1. The amount of the Security Cover which shall be provided by a Market Participant pursuant Clause 2.3.4.1 shall be determined according to the Category for which the application has been made which are described below:

- a) For enrolment as BPC, Electric Power Supplier or Electric Power Trader, no Security Cover shall be required.
- b) For enrolment as a Generator, the amount of the Security Cover shall be determined on the basis of its expected consumption from the network in one month if this back-feed Energy is not already contracted from another Market Participant. This value shall be calculated as 5 percent of its Installed Net Capacity (expressed in kW) multiplied by the



720 hours and multiplied by six [6] PKR/kWh.

- c) When a Market Participant registers a new Contract, the amount of the Security Cover provided during the enrolment process shall be adjusted accordingly.

13.2.2. SECURITY COVER FOR LEGACY CONTRACTS

- 13.2.2.1. Market Participants which are purchasing Energy and Capacity through Legacy Contracts shall provide to the Market Operator an initial Security Cover, as provided in Clause 13.1.3.4.

13.2.3. SECURITY COVER FOR NEW CONTRACTS

- 13.2.3.1. The Market Operator shall determine the amount of the Security Cover to be provided by each Market Participant prior to registration of a Contract, which shall be maintained until a new or different amount is determined. The Security Cover that shall be provided shall guarantee the obligations of the Market Participant party to the Contract being registered, plus its obligations associated with any other Contract already registered with the Market Operator.
- 13.2.3.2. The amount of the Security Cover that shall be provided pursuant to Clause 13.2.3.1 above, shall be determined by estimating the expected payments from such Market Participant, towards the purchase of Energy from the Balancing Mechanism for Energy, plus the payments for the Ancillary Services and Must Run Generation, the Market Operator fee and, if applicable, the System Operator fee, for the following Energy Settlement Period. The Market Operator shall require the parties registering the Contract to provide all the necessary information to perform this calculation.
- 13.2.3.3. The CCOP prepared under Clause 13.1.3.3 shall include mechanisms for determining the amount of the Security Cover and the Guarantee Amount to be provided by each Market Participant at the time of registration of a new Contract.

13.2.4. DEPOSIT AND VERIFICATION OF THE SECURITY COVER

- 13.2.4.1. After depositing the Security Cover in the Market Operator Monthly Settlement Account, the concerned Market Participant shall immediately inform the Market Operator along with the relevant documents.
- 13.2.4.2. The Market Operator shall review the submitted documents to verify whether the Security Cover is adequate and in accordance with the provisions of this Code. The Market Operator shall verify that the amount of the Security Cover is equal or above the amount calculated by the Market Operator.
- 13.2.4.3. In the case the Security Cover is according to the requirements, the Market Operator shall acknowledge the acceptance thereof and shall proceed to enroll the person as Market Participant or register the Contract, as the case may be.
- 13.2.4.4. In case the Market Operator considers that the Security Cover is not in accordance with the requirements, it shall require the Applicant or Market Participant to provide the Security Cover according to the requirements.



13.3. SECURITY COVER FOR THE BMC

13.3.1. SECURITY COVER REQUIRED FOR PARTICIPATION IN THE BMC

- 13.3.1.1. A Market Participant having negative Capacity Balance, calculated pursuant to Clause 9.2.5.1, shall submit Security Cover for an amount as determined by the Market Operator in accordance with Clause 9.5.1.1.

13.3.2. DEPOSIT AND VERIFICATION OF THE SECURITY COVER

- 13.3.2.1. After depositing the Security Cover in the Market Operator Yearly Settlement Account, the concerned Market Participant shall immediately inform the Market Operator along with the relevant documents.
- 13.3.2.2. The Market Operator shall review the submitted documents to verify whether the Security Cover is adequate and in accordance with the provisions of this Code. The Market Operator shall verify if the amount of the Security Cover is equal or above the amount notified by the Market Operator pursuant Clause 9.5.1.1;
- 13.3.2.3. In the case the Security Cover is according to the requirements, the Market Operator shall acknowledge the acceptance thereof and the Market Participant shall be allowed to participate in the Balancing Mechanism for Capacity. In case the Market Operator considers that the Security Cover provided is not adequate and not in accordance with the provisions of this Code, the provision of Clause 9.6.1.2 shall apply.

13.4. SECURITY COVERS ASSOCIATED WITH EXCESS LOSSES

13.4.1. VERIFICATION OF THE SECURITY COVERS FOR PAYMENT OF EXCESS LOSSES

- 13.4.1.1. After depositing the Security Cover in the Market Operator Yearly Settlement Account, the concerned Transmission Service Provider shall immediately inform the Market Operator along with the relevant documents.
- 13.4.1.2. The Market Operator shall review the submitted documents to verify whether the Security Cover is adequate and in accordance with the provisions of this Code. The Market Operator shall verify if the amount of the Security Cover is equal or above the amount notified by the Market Operator pursuant Clause 11.2.7.4.
- 13.4.1.3. In the case the Security Cover is according to the requirements, the Market Operator shall acknowledge the acceptance thereof. In the case the Market Operator considers that the Security Cover provided is not adequate it shall require the Transmission Service Provider to provide the Security Cover according to the requirements. In case of failure of the Transmission Service Provider to provide the Security Cover as notified by the Market Operation, then the Market Operator shall inform the Authority to take the appropriate action. In such case, the Market Operator may reduce payments to the Market Participants on pro-rata basis considering the shortfall amount.

13.4.2. REGISTRATION OF THE SECURITY COVERS

- 13.4.2.1. The Market Operator shall organize and maintain a register for the Security Covers provided by each Market Participant and Transmission Service Provider.
- 13.4.2.2. The following information shall be included in the Security Covers Register:

- a) The identification of each Market Participant and Transmission Service Provider.
- b) The amount of the Security Cover provided by each Market Participant and Transmission Service Provider;
- c) The purpose for which the Security Cover is provided (enrolment as Market Participant, monthly Settlements or yearly Settlements).

13.4.2.3. The Market Operator shall update the Security Covers Register when:

- a) the Market Participant or a Transmission Service Provider provides a new Security Cover, or it modifies the amounts submitted;
- b) a Security Cover is totally or partially used;
- c) a Market Participant terminates its participation and its Security Cover is returned; or
- d) any excess amount of a Market Participant or Transmission Service Provider is returned.

13.5. UTILIZATION / CANCELLATION OF THE SECURITY COVERS

13.5.1. SECURITY COVER UTILIZATION IN CASE OF MONTHLY SETTLEMENTS

13.5.1.1. On the Clearing Day, the Market Operator shall utilize or make necessary payments from the Security Cover of a Market Participant on account of Amounts Payable by such Market Participant.

13.5.1.2. Upon utilization of the Security Cover to pay the Amounts Payable as per the Monthly Settlement Statement, the Market Operator shall:

- a) inform the concerned Market Participant about the utilization of the Security Cover, clearly indicating the amount that has been utilized;
- b) Determine the new value of the Security Cover that the Market Participant shall provide to the Market Operator. This value shall be calculated pursuant to Clause 13.2.3.3; and
- c) Issue a Debit Notification to the concerned Market Participant to provide the Market Operator a new Security Cover, for the amount indicated in paragraph 13.5.1.2.b) above within Payment Due Date.

13.5.1.3. Failure to comply with the requirement of providing a new Security Cover, as per Clause 13.5.1.2, shall be considered as an Event of Default of the concerned Market Participant, pursuant to Sub-Section 16.2.1.

13.5.2. SECURITY COVER UTILIZATION IN CASE OF YEARLY SETTLEMENTS

13.5.2.1. After utilization of the Security Cover of a Market Participant to satisfy its payment obligations under a Yearly Settlement Statement or Extraordinary Yearly Settlement Statement, the Market Operator shall:

- a) inform the involved Market Participant about the execution of the Security Cover, clearly indicating the amount that has been executed;
- b) Inform the new value of the Security Cover that the Market Participant shall provide to the Market Operator as calculated pursuant to Clause 9.5.1.1; and
- c) Issue a Debit Notification to the concerned Market Participant to provide the Market Operator the Security Cover for the next instalment, for the amount indicated in Clause



13.5.2.3.b) above within five [5] Business Days of the date of issuance of such notification.

13.5.2.2. Failure to comply with the requirement of Clause 13.5.2.1.b) shall be considered as an Event of Default of the concerned Market Participant, pursuant to Sub-Section 16.2.1.

13.5.2.3. After utilization of the Security Cover of a Transmission Service Provider to satisfy its payment obligations under a Yearly Settlement Statement or Extraordinary Yearly Settlement Statement, the Market Operator shall:

- a) inform the involved Transmission Service Provider about the utilization of the Security Cover, clearly indicating the amount that has been utilized;
- b) Inform the new value of the Security Cover that the Transmission Service Provider shall provide to the Market Operator as calculated pursuant to Clause 11.2.7.4; and
- c) Issue a Debit Notification to the concerned Transmission Service Provider to provide the Market Operator the Security Cover for the next instalment, for the amount indicated in Clause 13.5.2.3.b) above by the Payment Due Date.

13.5.2.4. Failure to comply with the requirement of Clause 13.5.2.3.c) shall be considered as an Event of Default of the concerned Market Participant, pursuant to Sub-Section 16.2.1.

13.5.3. ADJUSTMENT AND RETURN OF A SECURITY COVER

13.5.3.1. Non-utilized Security Cover may be returned or adjusted, in the following cases:

- a) The Security Cover may be returned if the enrolment of a Market Participant is withdrawn or revoked after following the procedure as provided in section 2.5;
- b) The Security Cover may be adjusted against payments under monthly Settlements, after satisfying the payment obligations under a Yearly Settlement Statement or Extraordinary Yearly Settlement Statement.

13.5.3.2. Where a Market Participant deregisters a Contract, pursuant to Section 3.6, the amount of the required Security Cover shall be recalculated by the Market Operator. If the recalculated amount is lower than the Security Cover already provided by the Market Participant, it may decide to:

- a) maintain the existing Security Cover for future transactions; or
- b) request the Market Operator to return the excess amount of the Security Cover.

13.5.3.3. The Market Operator may return the excess amount upon request of the relevant Market Participant.

13.5.4. RETURN OF A PRINCIPAL AMOUNT OF SETTLEMENT GUARANTEE FUND

13.5.4.1. The principal amount deposited by a Market Participant may be returned, if the enrolment of a Market Participant is withdrawn or revoked after following the procedure as provided in section 2.5.

13.5.4.2. While calculating the amount to be returned to the Market Participant pursuant to Clause 13.5.4.1 above, the Market Operator shall take into account any default in the Market which was covered through utilization of the Settlement Guarantee Fund. Any amount that was used as contribution from such Market Participant to cover the default in the Market shall be deducted from the amount deposited by such Market Participant.



13.5.5. ADJUSTMENT OF THE AMOUNT OF SETTLEMENT GUARANTEE FUND

- 13.5.5.1. Each year, the Market Operator shall review the adequacy of the amount deposited in the Settlement Guarantee Fund to cover the payment obligations of the Market Participants.
- 13.5.5.2. The Market Operator shall prepare a report on the adequacy of the Settlement Guarantee Fund and submit the same to the Authority along with recommendations to adjust the amounts being deposited in the Settlement Guarantee Fund.



Chapter 14. SETTLEMENT OF DISPUTES

14.1. APPLICATION

14.1.1.1. The Dispute resolution procedure provided in this Chapter shall apply to:

- a) any Dispute between the Market Operator and the System Operator, or the Market Operator with a Service Provider or any Market Participant, which arises under or in connection with or in relation with provisions of this Code;
- b) any order of rejection by the Market Operator to enrol a person as a Market Participant or Service Provider, or to register a Contract;
- c) a dispute under this Code between the Market Operator and a Service Providers or a Market Participant regarding the terms and conditions or interpretation of the Market Participation Agreement or the Service Provider Agreement.

14.1.1.2. The dispute resolution process shall not apply to the following:

- a) a dispute arising under a Bilateral Contract between the Market Participants or any other dispute which is not related to the implementation of the provisions of this Code;
- b) any dispute relating to, connected with or arising out of an application by any person to amend a Clause or condition of this Code or a Dispute relating to validity of an Amendment to this Code;
- c) disputes with respect to a proposal to amend or not to amend any provision of this Code; and
- d) disputes between the Market Operator and a Market Participant relating to the rate of the Market Operator fee as approved by the Authority and the Market Operator to the Market Participant, unless the dispute relates to or is connected with the manner of calculation of the Market Operator charge payable by the Market Participant in any given case.

14.1.1.3. Without limiting the generality of the foregoing, where any Dispute arises and the parties have commenced proceedings under this Chapter, the concerned parties shall comply with the procedures set forth in this Chapter and shall not make such Dispute a subject matter of any civil or other proceedings.

14.1.1.4. Any Dispute shall be lodged only within one [1] year of the occurrence thereof and no Dispute shall be entertained after expiry of this time period and the Notice of Dispute shall be rejected.

14.2. CONTINUING OBLIGATIONS AND STAY OF ORDERS

14.2.1.1. Where a Dispute involves the payment or recovery of monetary amounts due under this Code, other than payment of a financial penalty, the amount shall be due and payable at the time specified for payment, notwithstanding initiation of a dispute resolution process whether under this Code or otherwise.

14.2.1.2. Where a Dispute involves the implementation of an order made or a direction given by the Market Operator under Chapter 16, the obligation of the Market Participant to comply with the order or direction, may be stayed for such period, if any, as may be determined by the Adjudicator or the Authority.



14.3. PROCEDURE FOR SETTLEMENT OF A DISPUTE

14.3.1. NOTICE OF DISPUTE

- 14.3.1.1. Subject to Clause 14.1.1.2, any person feeling aggrieved or any other person who wishes to settle a matter under this Chapter shall submit to the Market Operator a written "Notice of Dispute" clearly explaining the Dispute or the grievance along with all necessary supporting documents.
- 14.3.1.2. The Market Operator shall acknowledge the receipt of the Notice of Dispute and review its completeness. The Market Operator may require the party issuing the Notice of Dispute to submit further information or additional documents, which shall be provided to the Market Operator within the specified time.

14.3.2. AMICABLE RESOLUTION

- 14.3.2.1. Within twenty [20] Business Days of the receipt of the Notice of Dispute or the additional information or documents, as the case may be, the Market Operator and the party who issued the Notice of Dispute, shall make good faith efforts to negotiate and resolve the Dispute. The Market Operator and the other party to the Dispute shall designate a senior officer from their respective organizations, with the authority to negotiate the matter set out in the Notice of Dispute.
- 14.3.2.2. For application of the provisions of Clause 14.3.2.1, the Market Operator may constitute different committees of its officers and each committee will commence negotiations based on the nature of the Dispute and will prepare a report upon completion of the negotiations.
- 14.3.2.3. Upon successful negotiations, the Market Operator shall issue a notice of termination of the Dispute.
- 14.3.2.4. Disputes between the Market Operator and System Operator or a Service Provider on matters related to the Market and this Code that fail an amicable resolution shall be submitted to the Authority for decision. Expert Determination.

14.3.3. SOLE EXPERT

- 14.3.3.1. Failing an amicable settlement of the Dispute under Sub-Section 14.3.2, within a reasonable period of time, the same may be referred, by mutual agreement of the parties to the Dispute, to a sole expert. The sole expert shall be an independent and impartial person with relevant qualifications and experience and shall be appointed by agreement between the parties to the Dispute and who shall not, by virtue of personal connection or commercial interest, have a conflict between his own interest and his duty as a sole expert.
- 14.3.3.2. The Market Operator shall publish on its website a list of credible professionals having relevant qualification and experience which may be selected with mutual consent of the parties to perform the duties of the sole expert. Such list may be updated from time to time.

- 14.3.3.3. In the event, that the parties to the Dispute fail or are unable to agree on a sole expert within thirty [30] days or such longer period as may be mutually agreed by such parties, the sole expert shall be appointed by a body or an institution or an agency or a person, mutually agreed by such parties. In case, there is no agreement on the body or an institution or an agency or a person for appointing sole expert or such institution or agency or body fails to appoint a sole expert within thirty (30) days or such longer period as may be mutually agreed by such parties, the matter shall be referred to adjudication as provided under Sub-Section 14.3.4 below.
- 14.3.3.4. Any sole expert appointed shall be acting as an expert and not act as an adjudicator or arbitrator and the decision of the sole expert if not accepted by a party shall be subject to adjudication as provided below within ninety [90] days thereof.
- 14.3.3.5. The sole expert and representatives of the disputing parties, with authority to settle the dispute, shall within fourteen [14] days after the date of appointment of the sole expert schedule a date to resolve the dispute. Matters discussed during such hearing shall be kept confidential and shall not be referred to in any subsequent proceedings.
- 14.3.3.6. If any party to the Dispute does not agree with the determination of the sole expert, the matter shall be referred to the adjudication as provided under Sub-Section 14.3.4 below.
- 14.3.3.7. If all parties to the Dispute agree with the determination of the sole expert, the Market Operator shall issue a notice of termination of the Dispute.

14.3.4. ADJUDICATION TRIBUNAL

- 14.3.4.1. Any Dispute that could not be resolved according to the provisions of Sub-Section 14.3.2 and 14.3.3 above, may be referred to the Authority or a tribunal constituted by the Authority for this purpose.

14.3.5. CONFIDENTIALITY

- 14.3.5.1. Any party may claim that a document, or information contained in a document, to be produced in the context of the adjudication of a Dispute is Confidential Information. The party making such a claim shall provide to the tribunal in writing the basis for its assertion. If the claim of confidentiality is confirmed by the tribunal, the Tribunal shall establish requirements for the protection of such document or information as may be necessary to protect the confidentiality and commercial value of such document or information, including requirements for disclosure of same only to the tribunal or independent advisor who has filed an undertaking as to confidentiality satisfactory to the tribunal and for in camera hearings at which only representatives of the disclosing party and such counsel and/or other independent advisor may be present.

14.3.6. RECORD-KEEPING AND PUBLICATION

- 14.3.6.1. The Market Operator shall maintain a record of all dispute resolution proceedings conducted. The Market Operator shall be responsible for ensuring that all measures are taken to prohibit access by any other person to any portion of such record which may be sealed and marked "CONFIDENTIAL" or otherwise identified as being confidential, except as may be required by Applicable Law.
- 14.3.6.2. The Market Operator may arrange publication of the following information on the MO website:



- a) notice of the appointment of the sole expert or the adjudication tribunal and its chairperson;
- b) notice of the date, time and place fixed for hearing; and
- c) a summary of the decision of the Adjudication Tribunal.

14.3.7. COSTS AND FEES

- 14.3.7.1. Each party to the Dispute shall bear its own costs incurred for the dispute resolution process. Initially, the fees of the sole expert and the Tribunal shall be borne on pro rata basis by the parties, however, in the decision, the sole expert shall decide which party have to bear the costs of the dispute resolution. If the decision is referred to the Authority, the final decision of Authority will prevail.



Chapter 15. MARKET DEVELOPMENT AND ASSESSMENT

15.1. MARKET DEVELOPMENT AND EVOLUTION

15.1.1. REVIEW OF LEGAL, POLICY AND REGULATORY FRAMEWORK

- 15.1.1.1. While implementing the Commercial Code, the Market Operator shall continuously review the overarching legal, policy and regulatory framework and propose recommendations to the competent authorities to enhance the efficiency of the Market. The Market Operator shall also abide by all the applicable legal instruments.

15.1.2. PRODUCT DESIGN AND MARKET EVOLUTION

- 15.1.2.1. The Market Operator shall recommend for the approval of Authority, any modifications in the design of the CTBCM, introduction of new products such as Ancillary Services market, day-ahead market, trading platforms etc.
- 15.1.2.2. The Market Operator shall be responsible to undertake the necessary research to enable the advanced features of competitive electricity markets by duly considering the maturity of the CTBCM.

15.1.3. INTERNATIONAL AFFAIRS

- 15.1.3.1. The Market Operator may actively engage with international organizations involved in development and operation of the competitive electricity markets and may form strategic partnerships with such organizations in order to learn from their experience to enhance the efficiency of CTBCM.

15.1.4. LIAISON WITH STAKEHOLDERS AND MARKET TRAININGS

- 15.1.4.1. The Market Operator may actively engage with all the stakeholders for development of the competitive market and shall organize training and capacity building sessions in order to disseminate information among all stakeholders.
- 15.1.4.2. The Market Operator shall prepare a training need assessment in consultation with the stakeholders to make a well-informed, comprehensive and inclusive training plan with clearly stated objectives.

15.1.5. MARKET SIMULATIONS AND ANALYSIS

- 15.1.5.1. The Market Operator shall produce projections for future years about the results of the Market in order to give future perspectives to stakeholders.
- 15.1.5.2. The projections being carried out by the Market Operator shall be based on best estimates; however, the Market Operator shall not be held liable for any loss due to use of such projections in the decision making by the stakeholders.



15.2. MARKET ASSESSMENTS

15.2.1. MARKET ASSESSMENT FUNCTION

15.2.1.1. The Market Operator shall assess the impacts of any activity related to the CTBCM or the conduct of a Market Participant, and thereafter prepare and submit reports to the Authority. In doing so, the Market Operator shall:

- a) Assess the impacts of the behaviour of the Market Participants including withholding of Capacity or manipulation of costs, abuse or possible abuse of market power;
- b) Assess and observe the implementation of this Code as well as the market design in consultation with the stakeholders, to identify and propose measures as early as possible to address any flaws or difficulties faced by parties operating in the Market;
- c) Provide input during the amendments to this Code; and
- d) Assess the pace of development of competition and market efficiency.

15.2.1.2. The Market Operator may engage consultants with expertise in collecting and analysing the information pertaining to the market behaviour of the Market Participants.

15.2.2. REPORTING

15.2.2.1. The Market Operator shall prepare reports upon completion of any assessment and take such steps as may be necessary that may include:

- a) Issuance of warning letters to Market Participants involved in anti-competitive behaviours;
- b) Submission of recommendations to the Authority including any recommendation for taking punitive action if the behaviour of a Market Participant is of such nature that involves breach of terms and conditions of a License or other rules and regulations of the Authority;
- c) Submission of recommendations to the Authority regarding improvements in the market design to enhance efficiency and competition; or
- d) Submission of recommendations to CCRP if the assessment requires any amendment to this Code.

15.2.3. MARKET ASSESSMENT PROCEDURE.

15.2.3.1. The Market Operator shall monitor, evaluate and analyse the conduct of Market Participants related to the Market and this Code and the structure and performance of, and activities in, the CTBCM including, but not limited to:

- a) inappropriate or anomalous market conduct, including unilateral or interdependent behaviour resulting in manipulation, abuse or possible abuse of market power;
- b) identify actual or potential design flaws or procedural inefficiencies in this Code or in the Commercial Code Operational Procedures;
- c) actual or potential design flaws in the overall structure of the CTBCM and assess whether any one or more specific aspects of the underlying structure of the CTBCM is consistent with the efficient and fair operation of a competitive market; and



d) such other matters as the Market Operator deems appropriate.

15.2.3.2. The Market Operator shall develop a system for gathering information as well as criteria for evaluation of the information to enable it to effectively carry out the monitoring functions. For this purpose, the Market Operator shall develop and publish on MO Website:

- a) a detailed catalogue of data and/or categories of data it requires from Market Participants, the System Operator and relevant Service Providers; and
- b) a catalogue of the monitoring indicators that it will use to evaluate and analyse the data so acquired.

15.2.3.3. The Market Operator shall establish procedures for handling the acquired data including procedures for protecting Confidential Information.

15.2.3.4. The Market Operator shall not disclose, to any person, Confidential Information pertaining to any other person and acquired for the purpose of carrying out its monitoring functions.

15.2.3.5. Market Participants, Service Providers and the System Operator shall provide to the Market Operator the data referred to in the catalogue described in Clause 15.2.3.2.a) once published by the Market Operator.

15.2.3.6. The catalogues in Clauses 15.2.3.2.a) shall be subject to such re-evaluation and refinement by the Market Operator as deemed appropriate.

15.2.3.7. The Market Operator shall, no less than annually and more frequently prepare routine reports on matters pertaining to its responsibilities pursuant to this Chapter, including a summary of all complaints or referrals filed and assessments commenced under Clause **Error! Reference source not found.** Such reports shall contain the Market Operator's general assessment as to the state of competition within, and the efficiency of, the CTBCM.

15.2.3.8. The Market Operator may, from time to time, if required, consult the Market Participants regarding the activities identified in Section 15.2, provided, however that no Confidential Information shall be disclosed to any Market Participant without prior concurrence of the concerned Market Participant to whom such Confidential Information belongs in accordance with the applicable regulations of the Authority including the NEPRA Licensing (Market Operator) Regulations, 2022.

15.2.3.9. The Market Operator shall prepare a report if it, while carrying out its duties, identifies in matters related to the Market and this Code that:

- a) identifies that a Market Participant is or may be breaching or violating a provision of this Code; or
- b) that an Amendment to this Code may be required;
- c) If the report recommends that an Amendment to this Code, a copy of such report shall be sent to the Commercial Code Review Panel. If the report identifies a breach committed or that might be or might have been committed by a Market Participant, a copy of such report shall be sent to the concerned Market Participant as well.



15.2.4. DISPUTE RESOLUTION AND OTHER RELIEF

- 15.2.4.1. The dispute resolution procedures under Chapter 14 shall not apply to the activities carried out by the Market Operator under this Chapter.

15.2.5. PUBLICATION AND PROVISION OF DATA

- 15.2.5.1. Any interested party may request the Market Operator to provide data, which is not Confidential Information collected or created in the course of the Market which is not otherwise required to be published by the Market Operator. Such data may be provided unless, a justification is provided by the Market Operator that such disclosure is reasonably likely to compromise the work of the Market Operator.



Chapter 16. ENFORCEMENT OF COMMERCIAL CODE

16.1. COMPLIANCE AND BREACHES

16.1.1. COMPLIANCE

- 16.1.1.1. The Market Operator, System Operator, Service Providers and all Market Participants shall comply with this Code as applicable.
- 16.1.1.2. The Market Operator shall monitor compliance with the provisions of this Code, as applicable, by all Market Participants and Service Providers.
- 16.1.1.3. Any Market Participant or a Service Provider which has evidence that another Market Participant or a Service Provider has violated or is violating the provisions of this Code, shall inform the Market Operator immediately along with all supporting documents.

16.1.2. PROCEDURE CONCERNING ALLEGED BREACHES OF THIS CODE

- 16.1.2.1. Where this Code provides for consequences or penalties in respect of a breach of a particular Clause or provision by a Market Participant or Service Provider, those consequences or penalties shall apply in the circumstances and in the manner provided for in the relevant Clauses or provisions, in addition to any other penalties as may be imposed pursuant to Sub-Section 16.3.1.
- 16.1.2.2. In case the Market Operator considers, on the basis of its own information or upon receipt of written information from any person, that a Market Participant may have breached or may be breaching any provision of this Code, other than a breach constituting an Event of Default under Sub-Section 16.2.1, and it is appropriate that an enforcement action may be taken against that Market Participant, the Market Operator shall issue a notice, with a copy to the Authority, to the relevant Market Participant requiring it to provide the necessary explanation regarding the alleged breach.
- 16.1.2.3. The Market Participant shall submit the required explanation to the Market Operator within specified time and, if required, request for a representation before the Market Operator to present its case.
- 16.1.2.4. Upon review of the submitted explanation and, if applicable, consideration of arguments presented during the representation, the Market Operator may issue a show cause notice, with a copy to the Authority, to the relevant Market Participant specifying the following:
 - a) The alleged breach and the time within which the breach must be remedied.
 - b) The relevant evidence or information available with the Market Operator.
 - c) The remedial actions that will be taken if the breach is not remedied.
 - d) The time within which the Market Participant may submit written response.
 - e) The right of the Market Participant to request for a representation before the Market Operator to discuss the matter.
- 16.1.2.5. Where the Market Participant has requested a meeting pursuant to Clause 16.1.2.4.e), the Market Operator shall provide the Market Participant with a reasonable opportunity to present its case.



16.1.2.6. After expiry of the time specified in the notice and consideration of the response, if any, and holding of the meeting, if requested, the Market Operator may:

- a) determine that the Market Participant has not breached this Code ;
- b) determine that the Market Participant is in breach of this Code ;
- c) require that the Market Participant provide further information regarding the alleged breach; or
- d) conduct such further assessment into the matter as the Market Operator may deem appropriate.

16.1.2.7. Where the Market Operator determines that a Market Participant has breached this Code, the Market Operator may require such Market Participant, to do any one or more of the following:

- a) direct the Market Participant to take, within a specified period, such actions as may be necessary to comply with this Code;
- b) direct the Market Participant to cease, within a specified period, the act, activity or practice constituting the breach;
- c) impose additional or more stringent record-keeping or reporting requirements on the Market Participant;
- d) issue a non-compliance letter in accordance with Sub-Section 16.3;
- e) take any remedial actions as per Market Participation Agreement; or
- f) take such other action as may be provided for in this Code in respect of the provisions that have been breached by the Market Participant.

16.1.2.8. A Market Participant shall comply with an order of the Market Operator made pursuant to Clause 16.1.2.7 as soon as the order is effective.

16.2. SUSPENSION AND TERMINATION ORDERS

16.2.1. EVENTS OF DEFAULT

16.2.1.1. Each of the following shall constitute as an Event of Default for a Market Participant:

- a) the Market Participant fails to comply with an order of the Market Operator made pursuant to Clause 16.1.2.7 once the order has become effective.
- b) a Market Participant fails to comply with the decision of the Adjudication Tribunal under Chapter 15 unless such decision has been stayed;
- c) the Market Participant doesn't pay the required amount in full under a Security Cover within one [1] Business Day after the Payment Due Date;
- d) the Market Participant fails to renew the Security Cover required to be supplied under Chapter 13 of this Code within the time specified by the Market Operator;
- e) it becomes unlawful for the Market Participant to comply with any of its obligations under this Code; or any other obligation owed to the Market Operator or it is claimed to have become so by the Market Participant;
- f) a licence, including a Licence issued by the Authority pursuant to the Act, permit or other authorization necessary to enable the Market Participant to conduct its business or activities is suspended, revoked or otherwise ceases to be in full force and effect, provided that where a Market Participant holds more than one licence and only one such licence



has been suspended, revoked or otherwise ceases to be in full force and effect, the Event of Default and any action taken by the Market Operator with respect thereto shall relate only to such licence;

- g) The Authority informs the Market Operator that procedures have been initiated that may revoke the License;
- h) the Market Participant enters into or takes any action to enter into an arrangement, composition or compromise with, or an assignment for the benefit of, all or any class of their respective creditors or members, or a moratorium involving any of them;
- i) the Market Participant states that it is unable to pay from its own money its debts when they fall due for payment;
- j) a receiver or an administrator is appointed in respect of any property of the Market Participant which is used in or relevant to the performance by the Market Participant of its obligations under this Code;
- k) an administrator, liquidator, trustee in bankruptcy or person having a similar or analogous function under the laws of any relevant jurisdiction is appointed in respect of the Market Participant, or any action is taken to appoint such person;
- l) an application is made for the winding up or dissolution or a resolution is passed or any steps are taken to pass a resolution for the winding up or dissolution of the Market Participant;
- m) the Market Participant is wound up or dissolved, unless the notice of winding up or dissolution is discharged;
- n) the Market Participant is taken to be insolvent or unable to pay its debts under any applicable legislation;
- o) the Market Participant ceases to satisfy any material requirement imposed upon it as a condition of its authorization to participate in the CTBCM;
- p) the Market Participant fails to inform the Market Operator of a material change in the information required under its Admission Application pursuant to Sub-Section 2.3.2; or
- q) the Market Participant persistently commits breach of this Code or the Grid Code; or
- r) any other event, circumstances or situation that has been considered as an Event of Default by the provisions of this Code.

16.2.1.2. A Market Participant shall inform the Market Operator immediately upon becoming aware of any circumstance that may give rise to or of the occurrence of an Event of Default.

16.2.1.3. Where a Market Participant is involved in an Event of Default, the Market Operator may:

- a) issue to the concerned Market Participant a Default Notice specifying the alleged default and requiring the Market Participant to remedy the default within such time as may be specified in the Default Notice, which time shall not be more than two [2] Business Days; and/or
- b) call on a Security Cover of the concerned Market Participant and recover such amount as the Market Operator determines appropriate that represents the amount of any money which is actually owed by the concerned Market Participant to the Market Operator or any of its contingent liabilities towards the Market Operator under this Code; or
- c) Issue a Suspension Order and a request for temporary or permanent disconnection, as the case may be, to the relevant Transmission or Distribution Licensee, if the matter is of



such nature that require urgent action and the provisions of Sub-Section 16.2.2 shall, *mutatis mutandis*, apply

16.2.1.4. Where the Market Operator issues a Default Notice to a Market Participant, the Market Operator shall also inform the Authority and the Transmission or Distribution Network Service Provider, where the Market Participant is connected:

- a) about the issuance of the Default Notice;
- b) about the time within which the Market Participant is required to remedy the default as specified in the Default Notice.

16.2.1.5. Once the default has been remedied by the Market Participant, the Market Operator shall inform the Authority, the relevant Transmission or Distribution Network Service Provider, if required.

16.2.1.6. A Market Participant may remedy an Event of Default, where the Default Notice relates to payment of amounts due to the Market Operator under this Code, including Clauses 16.2.1.1.b) to 16.2.1.1.d) and 16.2.1.1.h) to 16.2.1.1.n), as follows:

- a) by paying all Amounts Payable under this Code, together with any Default Interest in accordance with any Debit Notification issued by the Market Operator and any costs and expenses determined by the Market Operator to have been incurred by it by reason of the default; and
- b) by providing additional Security Cover which complies with the requirements of Chapter 13.

16.2.1.7. Notwithstanding that the Event of Default may have been remedied by the Market Participant, the Market Operator may, where it considers that it is in the interest of preserving the integrity of the CTBCM, impose such conditions on the authorization of a Market Participant to participate in the Energy or Capacity Balancing Mechanisms as deemed appropriate.

16.2.2. SUSPENSION ORDERS

16.2.2.1. If an Event of Default is not remedied within the time specified in the Default Notice or within such longer period as may be allowed by the Market Operator in writing, a notice of intention indicating the following may be issued by the Market Operator:

- a) a Suspension Order to the Market Participant suspending or restricting all or any of the Market Participant's rights to participate in the CTBCM; and/or
- b) a request to the relevant Transmission or Distribution Network Service Provider, requesting the temporary or permanent disconnection, as the case may be, of the relevant Facilities or equipment of the Market Participant.

16.2.2.2. The Market Operator shall provide a copy of the notice issued pursuant to Clause 16.2.2.1 to the relevant Transmission or Distribution Network Service Provider.

16.2.2.3. Upon receipt of the notice issued pursuant to Clause 16.2.2.1, the concerned Market Participant shall have the right to request, within 2 Business Days, a meeting with the Market Operator to justify that the Suspension Order, the request for disconnect, or both, as the case may be, shall not be issued.

16.2.2.4. Where the Market Participant:

- a) has not requested a meeting pursuant to Clause 16.2.2.3, or has notified the Market



Operator that it does not intend to request such a meeting; or

- b) has requested a meeting, then upon conclusion of a meeting, the Market Operator may:
 - b.1. issue a Suspension Order to the Market Participant suspending or restricting all or any of the Market Participant's rights to participate in the CTBCM; and/or
 - b.2. if considered appropriate, issue, with a copy to the Market Participant and the Authority, a request for disconnection to the relevant Transmission or Distribution Network Service Provider requesting temporary or permanent disconnection, as the case may be, of the relevant Facilities or equipment of the Suspended Market Participant from the Transmission Network or the Distribution Network as the case may be; and/or
 - b.3. make such other order with due justification for remedial actions regarding the default.

16.2.2.5. Where the Market Participant has requested a meeting pursuant to Clause 16.2.2.3, the Market Operator, within ten [10] Business Days of the date of receipt of such request, shall hold a meeting providing the Market Participant with a reasonable opportunity to justify that why the Suspension Order, the request for disconnection or both should not be issued against it. In such circumstances, the Market Operator shall not issue either the Suspension Order or the disconnection request until such meeting has been held.

16.2.2.6. The Market Operator may withdraw a Suspension Order if the Event of Default, which caused issuance of the Suspension Order, is remedied and there are no outstanding Events of Default with respect to the Suspended Market Participant, provided that the Market Operator may, as a condition of withdrawing a Suspension Order, impose such conditions on the Market Participant to participate in the CTBCM, as deemed appropriate including:

- a) establishing a lower buying and selling limit for the Market Participant than would otherwise be the case under this Code;
- b) establishing a more frequent and continuing schedule of payments than would otherwise be the case under this Code; or
- c) imposing more stringent Security Cover requirement than would otherwise be the case under Chapter 13.

16.2.2.7. Following the issuance of a Suspension Order to a Market Participant, the Market Operator may do one or more of the following to give effect to the Suspension Order:

- a) reject registering any new Contract submitted by the Suspended Market Participant or suspend its existing Contracts registered with the Market Operator;
- b) withhold the payment of any amounts to the Suspended Market Participant under this Code; or
- c) make such further order or issue such directions to the Suspended Market Participant with adequate justification for enforcement of the Suspension Order.



- 16.2.2.8. The Transmission or Distribution Network Service Provider, as the case may be, which receives a request for disconnection from the Market Operator, shall disconnect the Facilities or equipment of the Suspended Participant referred to in the request for disconnection, on the date and at the time specified in the request for disconnection. The Transmission or Distribution Network Service Provider, as the case may be, shall not reconnect such Facilities or equipment until it receives the notice referred to in Clause 16.2.2.10, and shall reconnect such Facilities or equipment on the date and at the time specified in such notice. No costs associated with disconnection and reconnection shall be borne by the Market Operator.
- 16.2.2.9. The Market Operator may at any time and upon notice to the Suspended Market Participant, extend, stay the operation of or withdraw a Suspension Order as well as the request for disconnection or modify the conditions of any Suspension Order as well as the request for disconnection, and shall inform the Authority, the Transmission or Distribution Network Service Provider, as the case may be, accordingly.
- 16.2.2.10. The Market Operator shall, immediately following the issuance of a Suspension Order, publish a notice on the MO Website and issue a public statement that the rights of the Suspended Market Participant to participate in the CTBCM have been Suspended or restricted, including details of the suspension or restriction, and whether a request for disconnection has also been issued in respect of the Suspended Market Participant. The Market Operator shall issue a public notice promptly after a Suspension Order and, where applicable, a request for disconnection, is withdrawn, extended, modified or stayed and publish the same on the MO Website.
- 16.2.2.11. With effect from the date of issuance of Suspension Order, the Suspended Market Participant shall not be eligible to trade or enter into any transaction in the CTBCM to the extent specified in the Suspension Order.
- 16.2.2.12. The Suspended Market Participant shall comply with the terms of the Suspension Order issued to it. A Suspended Market Participant shall also comply with any subsequent order, including any directions or arrangements which may be made for the purpose of giving effect to the Suspension Order, made by the Market Operator.
- 16.2.2.13. A Suspended Market Participant shall remain liable for all of its obligations as a Market Participant, other than as expressly provided in the Suspension Order, including but not limited to, the payment of any amounts to the Market Operator in respect of any Energy withdrawn while the Suspension Order is in effect. Issuance of a Suspension Order shall not affect any liability or obligation of a Suspended Market Participant for the payment of any amounts to the Market Operator or any other person which were incurred or arose under this Code:
- a) prior to the date on which the Suspension Order was issued; or
 - b) during any period in which the operation of the Suspension Order has been stayed; regardless the date on which any claim relating thereto may be made.
- 16.2.3. REVOCATION OF ENROLMENT AND TERMINATION OF MARKET PARTICIPATION AGREEMENT
- 16.2.3.1. The Market Operator may, by Termination Order, revoke the enrolment of a Market Participant and terminate its Market Participation Agreement as well as its right to participate in the CTBCM where a Suspended Market Participant:
- a) has not remedied, to the satisfaction of the Market Operator, the Event of Default which



caused the issuance of the Suspension Order within [30] Business Days of the date of issuance of the Suspension Order or any other date as specified by the Market Operator; or

b) has informed the Market Operator that it is not likely to remedy such Event of Default.

16.2.3.2. Notwithstanding that a Market Participant may have remedied breach of this Code pursuant to the non-compliance letters or other remedial actions taken against it in accordance with Sub-Section 16.3.1, the Market Operator may, by Termination Order, revoke the enrolment of a Market Participant and terminate a Market Participant's right to participate in the CTBCM if a Market Participant has been found to be in breach of this Code on a persistent basis.

16.2.3.3. Where the Market Operator intends to issue a Termination Order, the Market Operator may issue a notice of intention, including the reasons thereof, to the concerned Market Participant indicating the following may be issued:

- a) a Termination Order to revoke the enrolment of the Market Participants and the reasons thereof;
- b) a request to the relevant Transmission or Distribution Network Service Provider, if not already issued, for permanent disconnection relevant Facilities or equipment of the Terminated Market Participant from the Transmission Network or the Distribution Network as the case may be.

16.2.3.4. The Market Operator shall provide a copy of the notice issued pursuant to Clause 16.2.3.3 to the Authority and the relevant Transmission or Distribution Network Service Provider

16.2.3.5. Upon receipt of the notice issued pursuant to Clause 16.2.3.3, the concerned Market Participant shall have the right to request, within two [2] Business Days, a meeting with the Market Operator to justify that the Termination Order, the request for disconnection, or both, as the case may be, shall not be issued.

16.2.3.6. Where the Market Participant:

- a) has not requested a meeting pursuant to Clause 16.2.3.5, or has notified the Market Operator that it does not intend to request such a meeting; or
- b) has requested a meeting, then upon conclusion of a meeting, the Market Operator may:
 - b.1. issue a Termination Order to the Market Participant revoking its enrolment or restricting all of the Market Participant's rights to participate in the CTBCM; and/or
 - b.2. if not already issued, issue, with a copy to the Market Participant, a request to the relevant Transmission or Distribution Network Service Provider requesting permanent disconnection of the relevant Facilities or equipment of the Terminated Market Participant from the Transmission Network or the Distribution Network as the case may be; and/or
 - b.3. make such other order with adequate justification for remedial of the default.

16.2.3.7. Where the Market Participant has requested a meeting pursuant to Clause 16.2.3.5, the Market Operator, within ten [10] Business Days of the date of receipt of such request, shall hold a meeting providing the Market Participant with a reasonable opportunity to justify that why the Termination Order, the Disconnection Order or both should not be issued against it. In such circumstances, the Market Operator shall not issue either the Termination Order, the Disconnection Order or any other order until such meeting has been held.



- 16.2.3.8. Upon receipt of the request for disconnection, the Transmission or Distribution Network Service Provider shall, on the date and at the time specified in the request for disconnection, disconnect the relevant Facility or equipment of the Terminated Market Participant referred to in the request for disconnection. The Transmission or Distribution Network Service Provider, as the case may be, shall not reconnect such Facilities or equipment until the Terminated Market Participant is again admitted as a Market Participant in accordance with this Code, in case it is exempted from enrolment, it has cleared all its obligations with the Market Operator. No costs associated with disconnection and reconnection shall be borne by the Market Operator.
- 16.2.3.9. With effect from the date of issuance of the Termination Order, all rights of the Terminated Market Participant to participate in the CTBCM shall stand terminated.
- 16.2.3.10. The Market Operator shall, immediately following the issuance of a Termination Order, publish the Termination Order on the MO Website and issue a public announcement that the rights of the Terminated Market Participant to participate in the CTBCM have been terminated and that a request for disconnection has been issued in respect of the Terminated Market Participant.
- 16.2.3.11. A Terminated Market Participant shall remain subject to and liable for all of its obligations and liabilities as a Market Participant, which were incurred or arose under this Code prior to the date on which it ceases to be a Market Participant, regardless of the date on which any claim relating thereto may be made.
- 16.2.3.12. A Terminated Market Participant who desires to be readmitted as a Market Participant shall be required to re-apply for enrolment to participate in the CTBCM, in accordance with the provisions of Chapter 2. The Market Operator may impose such additional terms and conditions on the right of the Market Participant to participate in the CTBCM as deemed appropriate in the circumstances, whether or not such terms and conditions are otherwise applicable to other Market Participants or has been provided under this Code.

16.3. NON-COMPLIANCE

16.3.1. NON-COMPLIANCE WARNING LETTERS AND OTHER REMEDIAL ACTIONS

- 16.3.1.1. This Sub-Section sets forth the manner in which the Market Operator may issue non-compliance warning letters and or take other remedial actions against the Market Participants for breaches of this Code:
- 16.3.1.2. Where a remedial action is provided in respect of a breach of this Code, the Market Operator shall:
- determine the level of non-compliance by the Market Participant in accordance with Clause 16.3.1.3;
 - determine the rate of recurrence of non-compliance by the Market Participant in accordance with Clause 16.3.1.4;
 - based on the determinations made in accordance with paragraphs (a) and (b), determine whether to issue a non-compliance warning letter take other remedial actions; and
 - where a determination is made to take other remedial actions, it shall be taken in accordance with Clause 16.3.1.5.



16.3.1.3. The Market Operator shall determine the level of non-compliance referred to in Clause 16.3.1.2.a) above as follows:

- a) Level "L1" shall be determined where the Market Participant has complied in part, but not in whole, with all the requirements of a Clause or a provision of this Code and where the Market Participant has, on its own initiative, informed the Market Operator on a timely basis of the non-compliance, the reasons for non-compliance and the manner in and the time within which such non-compliance will be remedied;
- b) Level "L2" shall be determined where the Market Participant has failed to comply with all of the requirements of a Clause or a provision of this Code and where the Market Participant has, on its own initiative, informed the Market Operator on a timely basis of the non-compliance, the reasons for non-compliance and the manner in which and the time within which such non-compliance will be remedied;
- c) Level "L3" shall be determined where the Market Participant has failed to comply, in whole or in part, with all of the requirements of a Clause or a provision of this Code and has failed to inform the Market Operator of the non-compliance on its own initiative and on a timely basis but, at the Market Operator's notice and within the time specified in the notice, informs the Market Operator of the reasons for non-compliance and the manner in which and the time within which such non-compliance will be remedied; and
- d) Level "L4" shall be determined where the Market Participant has failed to comply, in whole or in part, with all of the requirements of a Clause or provision this Code and has failed to inform the Market Operator of the non-compliance on its own initiative, and on a timely basis, and has failed to respond to the Market Operator's notice, within the time specified in the notice, for a statement of the reasons for such non-compliance and of the manner in which and the time within which such non-compliance will be remedied.

16.3.1.4. The Market Operator shall determine the rate of recurrence of non-compliance as referred to in Clause 16.3.1.2.b) based on the frequency and duration of the breaches of this Code.

16.3.1.5. Subject to the provisions of Clause 16.3.1.6, based on the determinations made under Clause 16.3.1.2 and the provisions of the table set forth below, the Market Operator may issue a warning letter for non-compliance and/or impose a financial penalty within the ranges specified in the following table:

Table 3: Remedial Actions

Level of Non-Compliance	Range of Sanctions
L1	Non-Compliance warning letter
L2	Non-Compliance warning letter and/or remedial action under Market Participation Agreement
L3	Non-Compliance warning letter and/or remedial action under Market Participation Agreement
L4	Non-Compliance warning letter and remedial action under Market Participation Agreement

16.3.1.6. In taking the remedial actions as provided in the table in Clause 16.3.1.5, the Market Operator, and where appropriate, the Adjudication Tribunal, shall have regard to:



- a) the circumstances in which the breach occurred;
- b) the severity of the breach;
- c) whether the breach was inadvertent, negligent, deliberate or otherwise;
- d) the length of time the breach was not remedied;
- e) the actions of the Market Participant on becoming aware of the breach;
- f) whether the Market Participant disclosed the matter to the Market Operator on its own or whether it was notified by the Market Operator;
- g) any benefit that the Market Participant obtained or expected to obtain as a result of the breach;
- h) any previous breach by the Market Participant of this Code;
- i) the impact of the breach on other Market Participants;
- j) the impact of the breach on the CTBCM as a whole; and/or
- k) such other relevant matters as the Market Operator considers appropriate.

16.3.1.7. Where:

- a) a Market Participant has breached a Clause or a provision for which no penalty is specified in the Commercial Code; or
- b) a Market Participant has failed to comply with an order made pursuant to Sub-Section 16.1.2,

the Market Operator may, without prejudice to any other enforcement actions that are provided in this Code, take remedial actions against the Market Participant as per Market Participation Agreement after having regard to the criteria set forth in Clause 16.3.1.6 and to the factors noted in Clause 16.3.1.8.b), where applicable.

16.3.1.8. The Market Operator may take severe remedial actions against a Market Participant otherwise provided for in Clause 16.3.1.5 where:

- a) the Market Operator determines that the impact of the Market Participant's breach on the CTBCM is particularly severe; or
- b) the rate of recurrence of non-compliance by the Market Participant with this Code is of such frequency or duration as to warrant the imposition of a higher financial penalty.

16.3.1.9. No additional remedial actions shall be taken in respect of a breach of this Code for which a remedial action has already been taken, provided that nothing in this Clause shall prevent the Market Operator from taking remedial actions for failure by a Market Participant to remedy a breach in respect of which a remedial action has been taken against it or if there is any repetition or continuation of such breach.



16.3.2. OFFICERS AND AGENTS

- 16.3.2.1. If any director, officer, employee, partner or agent of a Market Participant, the Transmission Service Provider, the Distribution Network Service Provider, the System Operator or the Market Operator does any act or refrains from doing any act which if done or omitted to be done, as the case may be, by a Market Participant, the Transmission Service Provider, the Distribution Network Service Provider, the System Operator or the Market Operator would constitute a breach of this Code such act or omission shall be deemed, for the purposes of this Chapter of the Commercial Code, to be the act or omission of the Market Participant, the Transmission Service Provider, the Distribution Network Service Provider, the System Operator or the Market Operator, as the case may be.

16.3.3. NON-COMPLIANCE BY SERVICE PROVIDERS AND SYSTEM OPERATOR

- 16.3.3.1. In case the Market Operator considers, on the basis of its own information or upon receipt of written information from any person, that a Service Provider or the System Operator may have breached or may be breaching any provision of this Code, including an Event of Default under Sub-Section 16.2.1, the process provided in Sub-Section 16.1.2 shall, *mutatis mutandis*, apply.
- 16.3.3.2. If the Service Provider or the System Operator, as the case may, doesn't comply with the order made pursuant to Clause 16.1.2.7, the Market Operator shall inform the Authority.



Chapter 17. DISCLOSURE, ACCESS AND CONFIDENTIALITY

17.1. MAINTENANCE OF RECORDS

- 17.1.1.1. The Market Operator shall make and publish, and may from time-to-time revise, a record keeping policy for Records, or classes of Records prepared by the Market Operator, the System Operator, the Service Providers and Market Participants in connection with this Code.
- 17.1.1.2. The Market Operator, the System Operator and each Market Participant and Service Provider shall retain Records or classes of Records prepared for or in connection with this Code for at least five [5] years or any other longer period as per Applicable Law.
- 17.1.1.3. Where a Record is:
- a) prepared in one or more draft forms;
 - b) not circulated in any such draft form by the person preparing it; and
 - c) subsequently prepared in final form;
- only the final form of the Record is required to be retained.

17.2. INFORMATION DISCLOSURE

- 17.2.1.1. Where a person is required by this Code to disclose or provide a Record to another person, such Record shall be disclosed or provided within the time specified in, and in the form and manner required by, the applicable provisions of this Code. Where no time is specified in relation to the disclosure or provision of a specific Record, the Record shall be disclosed or provided within a reasonable time.
- 17.2.1.2. A Record disclosed or provided shall be, to the best of the disclosing person's knowledge, true, correct and complete at the time at which such disclosure or provision is made. No person shall knowingly or recklessly disclose or provide a Record that, at the time and in light of the circumstances in which such disclosure or provision is made, is misleading or deceptive or does not state a fact that is required to be stated or that is necessary to make the statement not misleading or deceptive.
- 17.2.1.3. Where a person discovers that a Record disclosed or provided by it to any other person was, at the time at which it was disclosed or provided, or becomes untrue, incorrect, incomplete, misleading or deceptive, the disclosing or providing person shall immediately rectify the situation and disclose or provide the true, correct, complete, not misleading or not deceptive Record to the person to whom the original or currently untrue, incorrect, incomplete, misleading or deceptive Record had been disclosed or provided.
- 17.2.1.4. The System Operator and the Market Operator are entitled to use any Record obtained pursuant to this Code and the Grid Code in performing their functions and duties under this Code, the Grid Code, their Licences or Applicable Law.



17.3. ACCESS TO THE INFORMATION

17.3.1. ACCESS TO INFORMATION AND CONFIDENTIALITY

- 17.3.1.1. Subject to the Applicable Law, the Market Operator shall not disclose the Confidential Information to any person. However, upon application by an interested person, the Market Operator may disclose the Non-Confidential Information which is not available on MO Website on such terms and conditions as may be deemed appropriate.
- 17.3.1.2. All information, other than Confidential Information, required by this Code to be made available to Market Participants or other persons shall be either published by the Market Operator on the MO Website or may be provided in such manner and within the time prescribed by this Code. Where no time is specified in respect of the provision of a particular piece of information, such information shall be published or made available within a reasonable time.
- 17.3.1.3. The Market Operator shall determine and classify which information may be published on the MO Website related to the CTBCM for Market Participants, the Service Providers, other stakeholders and the public in general.
- 17.3.1.4. The following information and documents shall be published on the MO Website:
- a) the Market Participant Admission Application form;
 - b) the standard Market Participation Agreement;
 - c) The standard Service Provider Agreement;
 - d) The Commercial Code;
 - e) The Grid Code;
 - f) The Commercial Code amendment proposals under consideration;
 - g) The Commercial Code Operating Procedures;
 - h) The Market Participants Register;
 - i) Load forecasts and load statistics of the Grid System;
 - j) The System Marginal Price;
 - k) The results of the Balancing Mechanism for Capacity; and
 - l) The results of the verification compliance with the Capacity Obligations; and
 - m) The Capacity Certificates issued for each Generator; and
 - n) Any other information or documents as deemed appropriate and/or directed by the Authority.
- 17.3.1.5. The Operator shall develop a secured portal where information, which is not in public domain, may be accessed by the Market Participants, Service Providers and Enrolled Persons in a secured manner. The portal may, *inter alia*, include the following:
- a) The reports issued by the Market Operator or the System Operator where this Code requires that such report shall be provided to the Market Participants or Service Providers or Enrolled Persons;
 - b) Compensations for Ancillary Services; and
 - c) Expected and actual Must Run Generation, and its compensations.

17.3.1.6. No Market Participant, Service Provider, the System Operator or the Market Operator:

- a) shall disclose Confidential Information to any person, except as expressly permitted by this Code;
- b) shall permit access to Confidential Information by any person not authorized to have such access pursuant to this Code; and
- c) shall use or reproduce Confidential Information for a purpose other than the purpose for which it was disclosed, or another purpose contemplated by this Code.

17.3.1.7. The Market Operator shall establish and maintain internal controls and measures, including measures relating to the protection of Confidential Information that enable the Market Operator to monitor and comply with its obligations.

17.3.2. EXCEPTIONS

17.3.2.1. Unless prohibited by the Applicable Law, nothing in this Code shall prevent:

- a) the disclosure, use or reproduction of information, if the information is, at the time of disclosure, generally and publicly available other than as a result of a breach of confidence by a Market Participant or the Market Operator;
- b) the disclosure of Confidential Information by a Market Participant or the Market Operator to:
 - b.1. its director or employee, where such director or employee requires the Confidential Information for the due performance of that person's duties and responsibilities; or
 - b.2. its legal or other professional advisor, auditor or other consultant, where such legal or other professional advisor, auditor or other consultant requires the information for purposes of this Code, or for the purpose of advising the Market Participant or the Market Operator in relation thereto;
- c) the disclosure, use or reproduction of Confidential Information:
 - c.1. by the Market Participant that provided the Confidential Information;
 - c.2. with the consent of the Market Participant that provided the Confidential Information; or
 - c.3. in the case of Settlement Data or Metering Data, by or with the consent of the Market Participant to whom such data relates.
- d) the disclosure, use or reproduction of Confidential Information to the extent required by Applicable Law or by a lawful requirement of any government or governmental body, regulatory body, authority or agency having jurisdiction over a Market Participant or the Market Operator.
- e) the disclosure, use or reproduction of Confidential Information if required in connection with legal proceedings, mediation, arbitration, expert determination or other dispute resolution mechanism relating to this Code, or for the purpose of advising a person in relation thereto; and
- f) the disclosure of Confidential Information, if required to protect the health or safety of personnel, equipment or the environment.



17.3.3. COST OF ACCESS AND ELECTRONIC DATA RECEIVING AND SHARING

- 17.3.3.1.** Nothing in this Code shall prevent information which is made available by means of electronic communications from being provided on a read-only basis.
- 17.3.3.2.** Nothing in this Code shall prevent the Market Operator from issuing or receiving any information or documents through electronic means.
- 17.3.3.3.** Each Market Participant and any other person accessing, retrieving or storing information published or otherwise made available by the Market Operator shall be responsible for its own costs of accessing, retrieving or storing such information.



Chapter 18. MISCELLANEOUS, COMPLEMENTARY AND TRANSITORY PROVISIONS

18.1. SUPPLEMENTARY PROVISIONS

18.1.1. MARKET PARTICIPANTS HOLDING MULTIPLE LICENSES OR AUTHORIZATIONS

- 18.1.1.1. Wherever a Section, Sub-Section, Clause or provision of this Code is applicable to a specific Category of Market Participant and/or it is used in any kind of calculation, it shall be interpreted as applicable to all Market Participants belonging to such Category, and the provisions shall be construed accordingly.
- 18.1.1.2. Where a Market Participant, in addition to any other License, is also Licensed as a Transmission or Distribution Network Service Provider, the Metering Points shall be established at:
- a) The interface between a Generation Plant and/or Generation Unit, as applicable, and the Transmission or Distribution Network; and
 - b) Any other point within the Transmission or Distribution Network that the Market Operator or the System Operator considers necessary, for the appropriate implementation of this Code;
 - c) Commercial Metering System shall be installed at such locations as mentioned in Clause (a) and (b), regardless there are any commercial transactions at these points.
- 18.1.1.3. While processing the Application submitted by an Applicant, which also holds a Transmission or Distribution License, the Market Operator shall determine, in consultation with the System Operator, the points in the network referred to in Clause 18.1.1.2.b) at which Commercial Metering System shall be installed. The Market Operator is entitled to withhold the enrolment of such Applicant, in one or more of the Categories requested by the Applicant, until the required Commercial Metering Systems are properly installed and commissioned.

18.2. TRANSITORY PROVISIONS

18.2.1. INITIAL METERING SERVICE PROVIDER

- 18.2.1.1. Prior to the CMOD, the National Transmission and Despatch Company shall be enrolled with the Market Operator as a Metering Service Provider in order to perform the functions of a Metering Service Provider as set out in this Code as well as the Grid Code to provide metering services in whole Pakistan and other territories where the applicability of the Act is not extended except those areas served by KE. Similarly, KE shall also be enrolled with the Market Operator as a Metering Service Provider in order to perform the functions of a Metering Service Provider as set out in this Code as well as the Grid Code to provide metering services in the area specified in its Licenses. With the progress of the Market, other Metering Service Providers may also be enrolled with the Market Operator.



18.2.2. INITIAL CAP ON TRANSMISSION LOSS OF K-ELECTRIC

- 18.2.2.1. The cap for transmission losses at voltage level of 220 KV and above shall be as per the determination of the Authority, however if this loss is not separately determined by the Authority, then till the time, the Authority determines a separate cap on the transmission loss at voltage level of 220 KV and above for K-Electric, a value of [1%] shall be used.

18.2.3. MANUAL METER READING

- 18.2.3.1. All Metering Points shall be equipped with hardware or software for remote reading and collection of metering data through the Secured Metering System, as prescribed in Clause 4.2.1.2.b) and the Metering Service Provider shall make all efforts to comply with this requirement prior to the CMOD.
- 18.2.3.2. The Metering Service Provider shall establish a schedule for Local Meter Reading from the Metering Points where communication equipment has failed to electronically transmit the metering information to the database of the Metering Service Provider.
- 18.2.3.3. The Metering Service Provider shall submit to the Market Operator a specific request for each Metering Point on which Local Meter Reading shall be performed, along with:
- a) the schedule and time for each Meter reading; and
 - b) a plan to correct the deficiencies, which may include the replacement of the Meter or the Commercial Metering System, as the case may be, and to incorporate such Metering Point into the SMS system.
- 18.2.3.4. The Market Operator shall analyse the request and, if deemed appropriate, authorize the Metering Service Provider to perform Local Meter Reading at such Metering Point, notifying such authorization for a pre-specified period.
- 18.2.3.5. While performing Local Meter Reading, the Metering Service Provider shall perform an inspection of the metering facilities and if the Metering Service Provider detects any anomaly, including maintenance defects, inappropriate equipment, or evidence of tempering or suspicion thereof, it shall prepare a Metering Incident Report, informing this situation to the Market Operator.
- 18.2.3.6. The information collected by the Metering Service Provider for each Meter associated with a Metering Point shall be determined by the Metering Service Provider, but it shall include at least:
- a) half-Hourly readings of active and, if applicable, reactive Energy, with their associated time stamps in all cases the Meter installed at the Metering Point provides for such capability;
 - b) accumulated readings of active and, if applicable, reactive Energy, for the previous month;
 - c) time and date stamps;
 - d) alarms and event logs produced by the Meter;
 - e) accuracy qualifiers of the meter readings if the Meter produces such kind of information.
- 18.2.3.7. In case of successful reading of a Local Meter Reading, the Metering Service Provider shall analyse the completeness and reliability of the data obtained, in particular:
- a) absence of alarm signals from the Meter;



- b) adequacy of time and date stamps;
- c) completeness of readings for the Meters and validation;
- d) the contents of the event log of the Meter; and
- e) the adequacy of the parameters programmed in the Meter and metering equipment.

18.2.3.8. After the analysis of the completeness and reliability of the metering data, the Metering Service Provider shall decide about the correctness of the values obtained and shall mark the obtained data as "complete and accurate", "incomplete but accurate" or "inaccurate", as the case may be.

18.2.4. INITIAL CAPACITY OBLIGATIONS

18.2.4.1. With effect from the CMOD, the following values shall be applicable for the Capacity Obligations:

- a) For Suppliers of Last Resort, the values provided in Table 4 below.
- b) For Competitive Electric Power Suppliers, the values provided in Table 5 below.
- c) For BPCs which are enrolled as Market Participants, the values provided in Table 6 below.
- d) For Traders involved in Firm Exports, the values provided in 7 below.

Table 4: Capacity Obligations for Suppliers of Last Resort

Period		Capacity Obligations
		(In % of the registered or forecasted Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year ⁽¹⁾	100
Ex-ante compliance with the Capacity Obligations	Current year ⁽²⁾	100
	Year 1 ⁽³⁾	100
	Year 2	100
	Year 3	80
	Year 4	60

(1) Previous year is the year immediately before the year in which compliance with the Capacity Obligations is verified. For the first year after the CMOD, the previous year's calculations shall not be applicable.

(2) Current year is the year in which compliance with the Capacity Obligations is being verified.

(3) Year 1 is the year immediately after the year in which compliance with the Capacity Obligations is verified, and Year 2, 3, and 4 shall be construed accordingly.

Table 5: Capacity Obligations for Competitive Electric Power Suppliers

Period		Capacity Obligations (In % of the registered or forecasted Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year ⁽¹⁾	100
Ex-ante compliance with the Capacity Obligations	Current year ⁽²⁾	100
	Year 1 ⁽³⁾	100
	Year 2	100
	Year 3	80
	Year 4	50

- (1) Previous year is the year immediately before the year in which compliance with the Capacity Obligations is verified. For the first year after the CMOD, the previous year's calculations shall not be applicable.
- (2) Current year is the year in which compliance with the Capacity Obligations is being verified.
- (3) Year 1 is the year immediately after the year in which compliance with the Capacity Obligations is verified, and Year 2, 3, and 4 shall be construed accordingly

Table 6: Capacity Obligations for BPC

Period		Capacity Obligations (In % of the of the registered or forecasted Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year ⁽¹⁾	100
Ex-ante compliance with the Capacity Obligations	Current year ⁽²⁾	100
	Year 1 ⁽³⁾	100
	Year 2	100
	Year 3	80
	Year 4	60

- (1) Current year is the year in which compliance with the Capacity Obligations is being verified.
- (2) Previous year is the year immediately before the year in which compliance with the Capacity Obligations is verified. For the first year after the CMOD, the previous year's calculations shall not be applicable.
- (3) Year 1 is the year immediately after the year in which compliance with the Capacity Obligations is verified, and Year 2, 3, and 4 shall be construed accordingly




Table 7: Capacity Obligations for Traders involved in Firm Exports

Period		Capacity Obligations
		(In % of the of the registered or forecasted Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year ⁽¹⁾	100
Ex-ante compliance with the Capacity Obligations	Current year ⁽²⁾	100
	Year 1 ⁽³⁾	100
	Year 2	100
	Year 3	80
	Year 4	50

(1) Previous year is the year immediately before the year in which compliance with the Capacity Obligations is verified. For the first year after the CMOD, the previous year's calculations shall not be applicable.

(2) Current year is the year in which compliance with the Capacity Obligations is being verified.

(3) Year 1 is the year immediately after the year in which compliance with the Capacity Obligations is verified, and Year 2, 3, and 4 shall be construed accordingly

18.2.5. METHODOLOGY AND FACTORS FOR ALLOCATION OF LEGACY CONTRACTS

18.2.5.1. The National Electricity Policy states that power allocation / distribution from the power pool to state-owned suppliers or any other entity shall continue in accordance with the existing power pool allocation mechanism, or as may subsequently be provided for in the National Electricity Plan. In order to calculate the Allocation Factors, the capacity payments by each Ex-WAPDA DISCO during the last three years (2019, 2020, 2021) has been utilized to calculate the average share of each Ex-WAPDA DISCO in the pool.

18.2.5.2. The Legacy Contracts shall be commercially allocated to the EX-WAPDA DISCOs, and to K-Electric, in their role as Suppliers of Last Resort, utilizing the Allocation Factors provided in Table 8 below which are derived as a result of the methodology as described in Clause 18.2.5.1 above. These factors will be revised as per provisions of the National Electricity Plan and this table will be updated accordingly.

Table 8: Suppliers of Last Resort Allocation Factors

Supplier	Allocation Factor
LESCO	21.10%
GEPCO	9.82%
FESCO	13.09%
IESCO	10.15%
MEPCO	17.06%

PESCO	12.89%
HESCO	4.79%
QESCO	5.62%
TESCO	1.74%
SEPCO	3.73%
KE	As per Bilateral Contract

18.2.6. INITIAL CONGESTED ZONES

18.2.6.1. For the application of the provisions of Section 6.2.1, the following areas shall be considered as Congested Zones:

- a) the territory served by K-Electric; and
- b) The territories served by EX-WAPDA DISCOs or other Distribution Licensees connected with the Grid System

18.2.6.2. Before CMOD, the Market Operator shall delimit the Zones mentioned in Clause 18.2.6.1 by identifying all the Metering Points located between these Zones and shall publish a list of such Metering Points on its website.

18.2.6.3. The relevant Metering Service Provider shall inform the System Operator and the Market Operator about Metering Points which shall be added or eliminated in the Congested Zones as indicated above, due to addition/deletion of Metering Points or the augmentation of the Transmission or Distribution Network.

18.2.6.4. In case the electrical studies or Dispatch simulations, performed by the System Operator, as a consequence of the expansion of the Transmission Network or the installation of new control or protection devices, show that Congestion in the area served by K-Electric is eliminated or significantly reduced, the System Operator shall inform the Market Operator about such development and that the territory served by K-Electric may no longer be considered as a separate Congested Zone.

18.2.6.5. The Market Operator shall analyse the information provided by the System Operator and take a decision in this respect accordingly.

18.2.6.6. The territory served by K-Electric shall cease to be considered as a separate Congested Zone by the Market Operator at 0:00 a.m. of the first day of the calendar month immediately after a decision has been made in this regard by the Market Operator.

18.2.7. DEFAULT INTEREST

18.2.7.1. The Default Interest rate on any amount not paid within the due date shall be [KIBOR + 2 %/year] or any other value as determined by the Market Operator from time to time.

18.2.8. UNITARY COST OF CAPACITY

18.2.8.1. Till the time, the System Operator devises a detailed methodology for determining the Unitary Cost of Capacity, as an interim measure, the unitary cost of Capacity shall be equal to [10,500,000] PKR/MW/year.

18.2.9. EFFICIENT LEVEL OF RESERVES

18.2.9.1. Till the time, the System Operator determines the efficient level of reserves, as an interim measure, the value of efficient level of reserves shall be equal to [35%].

18.2.10. TRANSITION TOWARDS GUARANTEE BASED MECHANISM

18.2.10.1. The Market Operator shall prepare bi-annually a report on the behaviour of the Market Participants regarding payments and shall submit the same to the Authority along with recommendations regarding feasibility of moving from the cash-based system of Security Covers towards a bank guarantee-based mechanism. First such report shall be prepared after two years of the CMOD.



Chapter 19. APPENDICES

19.1. APPENDIX 1. METHODOLOGY FOR DETERMINATION OF SYSTEM MARGINAL PRICES AND ANCILLARY SERVICE CHARGES

19.1.1. GENERAL APPROACH

- 19.1.1.1. The Grid Code requires that the System Operator shall operate the system at its minimum cost while complying with the security and reliability criteria as set out therein. This, in turn, requires also to schedule the necessary Ancillary Services in the most economical way. The way to comply with all these provisions is to implement a Security Constrained Economic Dispatch to schedule the Energy production of each Generation Unit.
- 19.1.1.2. To implement the SCED, the System Operator requires necessary software tools and IT systems, as well as properly trained staff and appropriate operational procedures to ensure that the system achieves its optimal economic performance while maintaining always the required levels of reliability and security of supply.
- 19.1.1.3. Regardless of the fact that the System Operator may not yet be equipped with state-of-the-art software and IT systems, or that some of the operational procedures require adaptations or development of new ones, it is the duty of the System Operator that it shall make best efforts to operate the Grid System in the most economical way, within the security and reliability criteria established in the Grid Code.
- 19.1.1.4. Provided that the System Operator complies with the provisions of Clause 19.1.1.3, it is assumed that the results of the operations of the System Operator are aligned with the Security Constrained Economic Dispatch and, therefore, the determination of System Marginal Prices, as well as the identification of the Generation Units entitled for receiving compensation for providing, or allowing other Generation Units to provide Ancillary Services, shall be carried out through an ex-post analysis of the results of the daily operations.

19.1.2. PROCEDURE FOR DETERMINING THE SYSTEM MARGINAL PRICES

- 19.1.2.1. Every Business Day, the System Operator shall utilize the results of the actual operations of the previous day, or previous days in cases of non-Business Days, to develop an ordered table, in ascending order of their Variable Generation Cost or the Contract price in case of Imports, of all Generation Units and Imports for which the System Operator is responsible for Dispatching, for each hour of the day (the Variable Generation Cost List).
- 19.1.2.2. Each Generation Unit or Import shall have associated four values:
- a) Variable Generation Cost: It is the value which was used by the System Operator for Dispatching the Generation Units and Imports in the most economical way, pursuant to Clause 19.1.1.3. In case, the Variable Generation Cost of a Generation Unit is a function of its output or Generation Unit configuration, the value to be included in the table is the value corresponding to the output or configuration at which this unit was dispatched.
 - b) An operational label: which shall have one of the following values:
 - b.1. "Unavailable", applicable to Generation Units or Imports which were not available for being Dispatched at the corresponding hour;



- b.2. "Zero Variable Cost", applicable to available Generation Units which use natural resources as primary energy which do not have an associated cost. Hydro, Solar (either PV or CSP), Wind, and other similar renewable technologies will be labelled as such. Nuclear Generation Units shall be labelled as "Zero Variable Cost" regardless its Variable Generation Cost may be different than zero;
 - b.3. "Must Purchase" applicable to available Generation Units having Legacy Contracts which have to be dispatched to fulfil the contractual obligations irrespective of their variable cost.
 - b.4. "Transmission Must Run", applicable to available Generation Units not labelled as "Zero Variable Cost", or "Must Purchase" which have been dispatched to alleviate Congestion due to overloading of the network equipment or unstable voltage levels pursuant to Clause 6.2.2.1 or for voltage support pursuant to Clause 6.3.1.3 above;
 - b.5. "Reliability Must Run", applicable to available Generation Units not labelled as "Zero Variable Cost", or "Must Purchase" which have been dispatched to alleviate Congestion due or violation of the reliability and security criteria provided in the Grid Code pursuant to Clause 6.2.2.1;
 - b.6. "Must Stop", applicable to available Generation Units, which have not been dispatched, or have been dispatched below its maximum Capacity, to alleviate Congestion pursuant to Sub-Section 6.2.1;
 - b.7. "Operational Constraints", applicable to Generation Units not labelled as "Transmission Must Run" or Reliability Must Run" or "Must Stop", which have not been dispatched, or have been dispatched below its maximum Capacity, for other operational reasons. The System Operator shall clearly identify and document such reasons;
 - b.8. "Fully Loaded", applicable to available Generation Units not labelled as "Zero Variable Cost" or "Transmission Must Run" or "Transmission Must Run" or "Must Purchase", which have been dispatched at or above ninety percent [95%] of its maximum available Capacity;
 - b.9. "Partially Loaded", applicable to available Generation Units not labelled as "Zero Variable Cost" or "Must Run" or "Must Stop", "Operational Constraint", which have been dispatched below ninety percent [90%] of its maximum available Capacity
 - b.10. "Out of Merit", applicable to the available Generation Units that have not been scheduled for Dispatch by the System Operator. For the avoidance of doubt, a Generation Unit or Import may be labelled as "Out of Merit" even if this Generation Unit or Import has produced electric power during the corresponding hour, if this production has not been instructed by the System Operator. .
 - c) The Energy produced during the relevant hour;
 - d) The available Capacity: which shall be equal to:
 - d.1. The Energy produced during the relevant hour in case of Generation Units labelled as "Zero Variable Cost"
 - d.2. The declared Available Capacity for the relevant hour, as per the provisions of the Grid Code.
- 19.1.2.3. An example of the table to be prepared by the System Operator is shown in Figure 2. The values included in this figure are for illustration purposes only (not representing a real situation).




Figure 2: Example of Variable Generation Cost List

Time: From 2:00 p.m. to 3:00 p.m.					
Generation Unit	Available Capacity	Operating Cost	Dispatch	Label	Comments
TARBELA		0	554	Zero Cost	
TARBELA Ext 4		0	0	Zero Cost	
MANGLA		0	180	Zero Cost	
GHAZI BROTHA		0	730	Zero Cost	
WARSAK		0	60	Zero Cost	
***		0	87	Zero Cost	
MALAKAND - III	81	0	32	Zero Cost	
NEW BONG ESCAPE	84	0	19	Zero Cost	
***	147	0	29	Zero Cost	
CHASHNUPP-II	310	n.a.	311	Zero Cost	
CHASHNUPP-III	315	n.a.	315	Zero Cost	
***	3	0	3	Zero Cost	
ENGRO THAR COAL	625	3.2	607	Fully Loaded	
UCH	0	3.8	0	Unavailable	
PORT QASIM COAL	1250	5.19	1,248	Fully Loaded	
INW-II (CHOTKI)	14	4.855	0	Not Dispatched	Not committed to allow dispatch generators with local balancing constraints

Guddu 6	60	8.82	62	Fully Loaded	
Guddu 7	80	8.82	0	Must Stop	
Guddu 8	80	8.82	0	Must Stop	
Guddu 9	80	8.82	90	Fully Loaded	
Guddu 18	80	8.82	70	Fully Loaded	

GUDDU 3-4	300	10.5	0	Must Stop	
NANDI PUR	355	11.06	498	Fully Loaded	
GUDDU 1-2	200	11.33	0	Must Stop	
OREINT	205	11.8	161	Partially Loaded	
SAPPHIRE	205	12.02	199	Fully Loaded	
HALMORE	205	12.03	197	Fully Loaded	
SAIF	205	12.05	0	Out of Merit	
AGL	154	12.67	0	Out of Merit	

PKPCL	151	13.32	0	Out of Merit	
CHANAR ENERGY LIMITED	22		0	Out of Merit	

- 19.1.2.4. For determining the System Marginal Price, only Generation Units labelled as “Fully Loaded”, “Partially Loaded” will be considered.
- 19.1.2.5. The System Marginal Price, for each hour, will be calculated as the Variable Generation Cost of the cheapest Generation Unit labelled as “Partially Loaded”, which has been dispatched at a price higher than the most expensive Generation Unit labelled as “Fully Loaded”.
- 19.1.2.6. In case that the most expensive Generation Unit dispatched is labelled as “Fully Loaded” and there are no Generation Units labelled as “Partially Loaded” dispatched at a higher price, the System Marginal Price will be the Variable Generation Cost of the this last most expensive Generation Unit dispatched labelled as “Fully Loaded” Generation in the Table mentioned in Clause 19.1.2.1.
- 19.1.2.7. An example of discovering the System Marginal Price is shown in Figure 3. In this case, the Generation Unit “Nandi Pur”, which has 355 MW of Available Capacity and it was Dispatched at 270 MW sets the System Marginal Price, which results equal to 11.08 PKR/kWh.

Figure 3: System Marginal Price based on the Variable Generation Cost List

Time: From 2:00 p.m. to 3:00 p.m.

Generation Unit	Available Capacity	Operating Cost	Dispatch	Label	Comments
ENGRO THAR COAL	625	3.2	607	Fully Loaded	
PORT QASIM COAL	1250	5.19	1,248	Fully Loaded	
GUDDU 747	720	6.94	734	Fully Loaded	
CHAIWA HUBCO COAL	1250	6.97	1,200	Fully Loaded	
SAHIWAL (COAL)(HSR)	1250	7.14	1,200	Fully Loaded	
UCH-II	375	7.2	286	Partially Loaded	
LIBERTY POWER	210	7.22	90	Partially Loaded	
FOUNDATION	168	8.27	78	Partially Loaded	
ENGRO	210	8.45	92	Partially Loaded	
Guddu 6	60	8.82	62	Fully Loaded	
Guddu 9	80	8.82	90	Fully Loaded	
Guddu 10	80	8.82	60	Partially Loaded	
H-B-SHAH	1207	9.72	1,176	Fully Loaded	
BALLOKI	1198	9.84	1,143	Fully Loaded	
BHIKI (QATPL)	1256	9.85	1,126	Fully Loaded	
NANDI PUR	355	11.08	270	Partially Loaded	This Generation Unit sets the System Marginal Price
OREINT	205	11.8	161	Partially Loaded	
KAPCO	1345	13.42	179	Partially Loaded	

19.1.3. INTERIM PROCEDURE FOR DETERMINING THE GENERATORS ENTITLED TO RECEIVE COMPENSATION FOR ANCILLARY SERVICES

19.1.3.1. As provided under Clause 19.1.1.4 above, the results of the actual operations carried out by the System Operator are assumed to be in alignment with those of the Security Constrained Economic Dispatch, therefore, for determination of the compensation for Ancillary Services, it shall be assumed that:

- For the Generation Units, which have Variable Generation Costs lower than the System Marginal Price and have not been dispatched at full load other than Generation Units labelled as "Must Stop", it shall be considered that they have been instructed to disconnect or to reduce their output for providing Ancillary Services or to allow other Generation Units to provide the same.
- For the Generation Units, which have Variable Generation Costs higher than the System Marginal Price and have been partially dispatched, it shall be considered that they have been scheduled for providing Ancillary Services.

19.1.3.2. As provided above, the following Generation Units shall be eligible to receive compensation for the provision of Ancillary Services:

- Generation Units, labelled as "Operational Constraints", whose Variable Generation Cost is lower than the System Marginal Price: Such Generation Units shall receive compensation on account of Lost Opportunity Cost, which shall be calculated as per Clause 6.4.2.2;
- Generation Units, labelled as "Partially Loaded", whose Variable Generation Cost is lower than the System Marginal Price: Such Generation Units shall receive compensation on account of Lost Opportunity Cost, which shall be calculated as per Clause 6.4.2.2; and
- Generation Units, labelled as "Partially Loaded", whose Variable Generation Cost is higher than the System Marginal Price: Such Generation Units shall receive a compensation for its variable cost which shall be calculated as per Clause 6.4.3.2.

19.1.3.3. An illustration of the determination of the Generation Units eligible to receive compensations for the provision of Ancillary Services are shown in Figure 4. In this case, six Generation Units are eligible to receive compensation on account of Lost Opportunity Cost (JDW-III (Ghotki); UCH-II; Liberty Power; Foundation; Engro; Guddu 10 and Guddu 3-4) and Two Generation Units are eligible to receive variable cost compensation (Orient and Kapco).

Figure 4: Generation Units Eligible to Receive Compensations for ASC

Time: From 2:00 p.m. to 2:00 p.m.

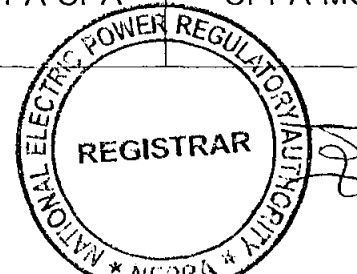
Generation Unit	Available Capacity	Operating Cost	Dispatch	Label	Comments
ENGRO THAR COAL	625	3.2	607	Fully Loaded	
PORT QASIM COAL	1250	5.19	1,248	Fully Loaded	
JDW-III (GHOTKI)	24	6.855	0	Out of Merit	
GUDDU 747	720	6.94	734	Fully Loaded	
CHAIHA HUBCO COAL	1250	6.97	1,200	Fully Loaded	
SAHIWAL (COAL)(MSR)	1250	7.14	1,200	Fully Loaded	
UCH-II	375	7.2	286	Partially Loaded	
LIBERTY POWER	210	7.22	90	Partially Loaded	
FOUNDATION	148	8.27	78	Partially Loaded	
ENGRO	210	8.45	92	Partially Loaded	
Guddu 8	60	8.82	62	Fully Loaded	
Guddu 9	80	8.82	90	Fully Loaded	
Guddu 10	80	8.82	60	Partially Loaded	
KOTRI	120	9.55	0	Must Stop	
H-B-SHAH	1207	9.72	1,176	Fully Loaded	
BALLOKI	1198	9.84	1,143	Fully Loaded	
BHIKI (QATPL)	1258	9.85	1,126	Fully Loaded	
GUDDU 3-4	100	10.5	0	Out of Merit	
NANDI PUR	355	11.08	270	Partially Loaded	
GUDDU 1-2	200	11.33	0	Out of Merit	
ORIENT	205	11.8	161	Partially Loaded	
GULF POWER	96	12	0	Out of Merit	
SAIF	205	12.05	0	Out of Merit	
AGL	156	12.67	0	Out of Merit	
ROUSCH	395	13.01	0	Out of Merit	
FKPCL	151	13.32	0	Out of Merit	
KAPCO	1345	13.42	179	Partially Loaded	Required to provide voltage support
KEL	122	13.67	0	Out of Merit	
AEL	30	14.59	0	Out of Merit	
CHANAR ENERGY LIMITED	22		0	Out of Merit	

Entitled to receive Loss of Opportunity Cost Compensation

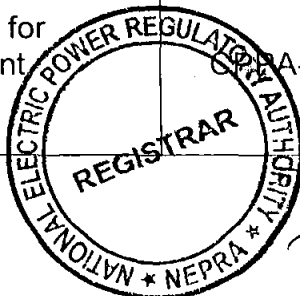
Entitled to receive Variable Cost Compensation

CTBCM TEST-RUN PLAN (Annexure-B)

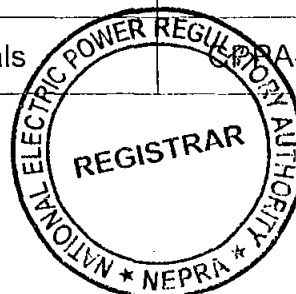
Sr. No.	Action Item	Activities	Responsible Entity	Supporting Entity	Start Date	End Date
A. ACTIONS UNDER MARKET COMMERCIAL CODE (MCC)						
1	Establishment of CCRP	Seeking Nominations for CCRP	CPPA-MO	DISCOs/ NTDC/ Other relevant stakeholders	Jun-2022	Sep-22
		Establishment and notification of CCRP			Sep-2022	Oct-2022
2	Preparation of Merit Order on shorter period*	Consultation between CPPA-SPA and NPCC	CPPA-SPA, NTDC-SO	CPPA-MO	Jun-2022	Jun-22
		Discussion with IPPs completed			Jul-22	Jul-22
		Preparation of Merit Order on daily basis started			Sept-22	Nov-22
3	Enrollment of Market Participants and Service Providers	Development of MPA/SPA and its submission to NEPRA	CPPA-MO	NTDC/ DISCOs	Jun-22	Jun-22
		Enrolment Application by DISCOs and NTDC and signing of MPAs/SPAs			Jun-22	Sept-22
4	Contract Registration	Collection of data for commercial allocation of capacity among DISCOs	CPPA-MO	CPPA-SPA	Jun-22	Jun-22
		Registration of Legacy Contracts in MMS			Jun-22	Jun-22
5	Charging of Capacity based on Allocation Factors	CPPA-SPA calculate charges for DISCOs/KE based on Allocation Factor instead of MDI	CPPA-SPA	CPPA-MO	June-22	Jul-22



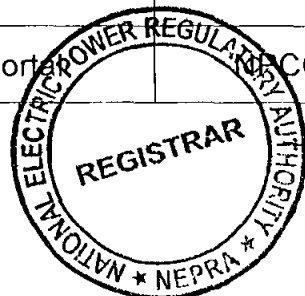
Sr. No.	Action Item	Activities	Responsible Entity	Supporting Entity	Start Date	End Date
6	Execution of BME and Issuance of Settlement Statements	Calculate balancing mechanism for energy (BME) and additional market charges to prepare monthly Settlement	CPPA-MO	NTDC/KE	Jun-22	Every Month
		Issuance of Preliminary and final Settlement Statements	CPPA-MO	-	July-22	Every Month
7	Firm Capacity Certification of Existing Generators	Receive data from relevant entities	CPPA-MO	CPPA-SPA/ NTDC	Jun-22	Jul-22
		Process data and Issue certificates	CPPA-MO	-	Jul-22	Aug-22
8	Issuance of Yearly Settlement Statement	Execute BMC for previous year	CPPA-MO	-	Sept-22	Sept-22
		Calculate excess transmission loss for previous year			Sept-22	Sept-22
		Issue Preliminary and final Yearly Settlement Statement			Oct-22	Nov-22
		Check ex-post compliance with Capacity Obligations			Nov-22	Nov-22
9	Calculation of Ex-ante Capacity Obligations	Received data from DISCOs and KE	CPPA-MO	DISCO/KE/ CPPA-SPA	Oct-22	Oct-22
		Process data and calculate Obligation			Oct-22	Nov-22
		Convey results to DISCOs and KE			Nov-22	Nov-22
10	Opening of Bank Accounts	Opening of Bank Accounts for Market Operations	CPPA-MO	CPPA-SPA	Jul-22	Aug-22
11	Determination of the amounts for Security Cover and Settlement Guarantee Fund	Determination of the Amounts for Security Covers and Settlement Guarantee Fund	CPPA-MO	NTDC/NPCC DISCOs/KE	Aug-22	Oct-22



Sr. No.	Action Item	Activities	Responsible Entity	Supporting Entity	Start Date	End Date
12	Development of CCOPs	Development of the CCOPs (Market and Contract Registration, Metering, Firm Capacity, Capacity Obligation, Security Covers)	CPPA-MO/ NTDC (for Metering)	DISCOs/ KE	Jun-22	Aug-22
		Submission to Authority for review			Sept-22	Nov-22
B. <u>TEST RUN TOOLS AND SYSTEMS</u>						
13	Completion of MMS Phase 1 covering monthly settlements	Populating and Testing of the developed modules (enrollment, BME, ASC, Settlement Statements and Payments) with actual data and stress testing	CPPA-MO	NTDC	Jun-2022	Jul-22
		Identification of bugs and their removal			Jun-2022	Sep-2022
14	Development of MMS Phase 2 covering all transactions*	Development of new Modules (BMC, Contract Management, Firm Capacity Certification, Capacity Obligation, Security Cover Calculation, Complaint Management)	CPPA-MO	NTDC	Oct-2022	Oct-2023
		Testing of the modules with real data			Nov-2023	Feb-2024
		Identification of bugs and their removal			Mar-2024	Aug-2024
15	Benchmarking of MMS with international solutions*	Benchmarking with NYISO/PJM Market Management System	CPPA-MO	-	Aug-2022	Feb-2023
16	Setting up ERP Financial for	Configuration of ERP Financials	CPPA-MO	CPPA-SPA	Jun-2022	Aug-22



Sr. No.	Action Item	Activities	Responsible Entity	Supporting Entity	Start Date	End Date
	Market Settlement	Integration with MMS and testing with actual data			Sep-2022	Oct-22
17	Development of MO Website	Development of MO website and publication of test- run as well as market results	CPPA-MO	CPPA-SPA	Jun-22	Nov-22
		Benchmarking with NYISO/PJM/RED Electrica/AEMO	CPPA-MO	-	Aug-22	Dec-22
18	Completion of SMS (NTDC, DISCOs)	Coordination for Collection of 100% data through SMS and its transmission to Market Operator	CPPA-MO	NTDC/KE	Jun-22	Jun-22
		Coordination for Development of the data collection, validation and substitution protocols			Jun-22	Sep-22
19	Development of SMS (KE)*	Collection of 100% data through SMS and its transmission to Market Operator	KE	NTDC/ CPPA-MO	As per KE integration plan	As per KE integration plan
		Adoption of the data collection, validation and substitution protocols				
20	Marginal Price	Complete functionality of the Marginal Price application	NPCC	CPPA-MO/ KE	Jun-2022	Aug-22
		Integration of KE into the application*			As per KE integration plan	As per KE integration plan
21	Deployment of SDXP	Stress testing of the SDXP Application and removal of bugs	NPCC	CPPA-MO/ KE	Jun-22	Aug-22
		Integration of KE System into the SDXP*	NPCC	CPPA-MO, KE	As per KE integration plan	As per KE integration plan
22	Development of Variable Cost	Development and Testing of Port	NPCC	CPPA-SPA/ CPPA-MO	Jun-22	Aug-22



Sr. No.	Action Item	Activities	Responsible Entity	Supporting Entity	Start Date	End Date
	Submission Portal*	Training of IPPS on the portal			Aug-22	Sep-22
		Go Live			Sep-22	Sep-22
C. <u>AWARENESS, CAPACITY BUILDING AND TEST RUN SESSIONS & REPORTS</u>						
23	Market Commercial Code Consultative Workshops and Test Run Reports	First Consultative Workshop	CPPA-MO	All power sector entities and other stakeholders	Jul-2022	Jul-2022
		Second Consultative Workshop			Sep-2022	Sep-2022
		Third Consultative Workshop			Nov-2022	Nov-2022
		Monthly Test-Run Reports and final consolidated Test-Run Report			Jun-22	Nov-22
24	Awareness Sessions related to CTBCM applicable framework and Capacity Building	Awareness sessions for Licensees, BPCs, Investors, Industries and other Stakeholders.	CPPA-MO	All power sector entities and other stakeholders	Jun-22	Nov-22
		Trainings for power sector entities related to CTBCM policy and regulatory frameworks and capacity building.			Jun-22	Continue

(*) These activities are important but not a precondition for Competitive market operation date (CMOD).

