National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

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No. NEPRA/R/DL/LAG-336/ 13346-52

September 29, 2016

Mr. Rashid Mahmood
Chief Executive Officer,
National Power Parks Management Company (Private) Limited,
Second Floor 7-C-1, Gulberg III, Lahore.
Tel: 042-35759276-9

Subject: **Generation Licence No. IGSPL/69/2016**
Licence Application No. LAG-336
National Power Parks Management Company (Private) Limited (NPPMCPL)
Balloki, District Kasur, in the Province of Punjab

Reference: *Your application vide letter No. NPPMCL/Leg/267/2016, dated 21st April, 2016, received on 21st April, 2016.*

Enclosed please find herewith Generation Licence No. IGSPL/69/2016 granted by National Electric Power Regulatory Authority (NEPRA) to National Power Parks Management Company (Private) Limited (NPPMCPL) for its 1275.50 MW Re-Gasified Liquefied Natural Gas based Thermal Generation Facility/Combined Cycle Power Plant at Balloki, District Kasur, in the province of Punjab, pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997). Further, the determination of the Authority in the subject matter is also attached.

2. Please quote above mentioned Generation Licence No. for future correspondence.

Enclosure: Generation Licence (IGSPL/69/2016)

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29/9/16

(Syed Safeer Hussain)

Copy to:

1. Secretary, Ministry of Water and Power, Block – A, Pak Secretariat, Islamabad.
2. Chief Executive Officer, NTDC, 414-WAPDA House, Lahore
3. Chief Operating Officer, CPPA-G, 107-WAPDA House, Lahore
4. Managing Director, Private Power and Infrastructure Board (PPIB), Ground & Second Floors, Plot No. 10, Mauve Area, Sector G-8/1, Islamabad.
5. Director General, Environment Protection Department, National Hockey Stadium, Ferozpur Road, Lahore.
6. Chief Executive Officer, Lahore Electric Supply Company Limited, 22-A, Queens Road, Lahore.

National Electric Power Regulatory Authority (NEPRA)

Determination of the Authority in the Matter of Application of National Power Parks Management Company (Private) Limited for the Grant of Generation Licence

September 19, 2016
Case No. LAG-336

(A). Background

(i). The electric power sector of the country is experiencing a demand-supply gap. In order to reduce the said deficit, all efforts are being made to develop indigenous as well as imported resources. Government of Pakistan has announced a new power policy i.e. Power Policy, 2015 which offers enhanced incentives and simplified processing to bridge the demand-supply gap in the minimum time through generation of affordable electricity for socio-economic uplift of the country.

(ii). In line with the above decision, Federal Government has decided to set up Re-Gasified Liquefied Natural Gas (RLNG) based power plants. In order to implement the projects, Federal Government has incorporated a special purpose vehicle in the name of National Power Parks Management Company (Private) Limited (NPPMCPL).

(iii). Private Power and Infrastructure Board (PPIB) issued a Letter of Intent to NPPMCPL on April 12, 2016 for setting up 1223.10 MW RLNG based combined cycle power plant (CCPP) at Balloki, District Kasur in the Province of Punjab under the Power Policy, 2015. The validity of LoI has been extended to September 24, 2016.

(B). Filing of Application

(i). In accordance with Section-15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (hereafter referred to as "the NEPRA Act"), NPPMCPL through its letter dated April 21, 2016 submitted an application for the grant of generation licence.

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(ii). The Registrar examined the submitted application and found the same substantially compliant with the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the Licensing Regulations). Accordingly, the Registrar submitted the application for the consideration of the Authority for making a decision regarding the admission of the same or otherwise.

(iii). The Authority considered the matter in its regulatory meeting held on May 12, 2016 and found the form and content of the application in substantial compliance with Regulation-3 of the Licensing Regulations. Accordingly, the Authority admitted the application for consideration of the grant of the generation licence as stipulated in Regulation-7 of the Licensing Regulations. The Authority approved the advertisement containing (a). the prospectus of the company; and (b). a notice to the general public about the admission of the application of NPPMCPL, to invite the general public for their comments in the matter as stipulated in Regulation-8 of the Licensing Regulations. The Authority also approved the list of the persons for providing their comments or otherwise to assist the Authority in consideration of the above mentioned application of NPPMCPL. Accordingly, the advertisement was published in one Urdu and one English national newspaper on May 17, 2016.

(iv). Apart from the above, separate letters were also sent to Government Ministries, their attached departments, representative organizations and individual experts etc. on May 18, 2016 to seek comments in the matter for the assistance of the Authority.

(C). Comments of Stakeholders

(i). In reply to the above, the Authority received comments from six (06) stakeholders. These included Mr. Wasim Akbar, Anwar Kamal Law Associates, Ministry of Petroleum and Natural Resources, Board of Investment, Lahore Electric Supply Company Limited (LESCO) and Ministry of Water & Power.

(ii). The salient points of the comments offered by the above stakeholders are summarized in the following paragraphs:-

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(a). Mr. Wasim Akbar resident of Partapgarh, Patoki, District Kasur, in his comments opposed the project raising serious concerns regarding impact of the project on environment;

(b). Anwar Kamal Law Associates in its comments raised different issues in power sector in general such as surplus capacity, under utilization of power plants and induction of new power plants on take or pay basis. Anwar Kamal Law Associates also raised specific queries regarding the project of NPPMCPL including

(i). whether the subject project is being set up by the Provincial Government i.e. by the Government of the Punjab? If yes, then Anwar Kamal Law Associates would like to know the provision of law under which the Provincial Government can do this business?

(ii). under what terms and conditions the Government of the Punjab is setting up this power project? It needs to be noted that after the 18th amendment to the constitution of Pakistan, electricity is a federal subject.

(iii). whether these power plants are being set up with some commercial objective or this is being done as a national service?

(iv). what is and would be the funding source to set up this power project?

(v). is this a two-step circuitous route to facilitate some chosen blue-eyed private persons/entities through the next stage privatization?

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(vi). whether this power plant will be an addition in the generation basket of CPPA-G or it is a replacement of any existing power plant?

(vii). what would be the alternate or secondary fuel for this power project?

(viii). the contract agreement showing the rates and other terms and conditions for import of RLNG from Qatar to Pakistan and the Gas Supply Agreement between the gas supply company and the above subject project should be available in the public domain. As the result of non-supply of gas to IPPs has been very bitter which has been experienced in the case of Orient, Saif, Sapphire and Halmore.

(ix). whether the plant's technology, location, fuel etc. fall in least-cost-generation plan, which is important criteria to determine whether the addition of a power plant of this capacity is actually required by the system demand?

(x). Anwar Kamal Law Associates also stated that efforts should also be made to encourage investors to setup their power plants to be operated under take and pay regimes in a competitive power market. For the last many years several cheaper/ less expensive power plants are not being operated to their full capacity due to transmission line constraints.

(xi). Anwar Kamal Law Associates objected tariff structure and take or pay regime where capacity payments have to be made irrespective of the fact that the proposed power plant is supplying electricity or not. Anwar Kamal Law Associates commented that due to take or pay regime, the existing mechanism of economic merit order may need to

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be reviewed after taking into consideration the effect of per unit differential cost being paid to the power plants for idle capacity.

(xii). The transmission of RLNG from Karachi Port to the project site is still an issue and it is not clear whether the existing gas pipeline can transmit the imported RLNG to the plant site or not. Swapping arrangement of pipeline quality gas in Punjab with imported RLNG has already been objected by the Government of Sindh. Therefore, to maintain harmony in the country, it is necessary to resolve all disputes first and then start working on these projects.

(xiii). Anwar Kamal Law Associates also mentioned that taking the support of environmental ground, the costlier RLNG power plants are being run prior to exhausting the full available capacity of cheaper RFO power plants. This is causing huge financial loss to the electricity consumers, national exchequer, power sector and also loss to the economy of the country. In the opinion of Anwar Kamal Law Associates, this act is no less than an economic crime, which is destabilizing the state by weakening its economy. NEPRA has already developed the Market Rules for the development of the electric power market. Discontinuation of long term power purchase agreements, that too on take or pay basis, is a pre-requisite for a competitive electric power market;

(c). Ministry of Petroleum and Natural Resources submitted that in pursuance to the decision of Economic Coordination Committee dated September 03, 2015, it has already allocated 200 MMCFD RLNG w.e.f. April 01, 2017 on firm take or pay basis for 1223.10 MW Balloki power project for fifteen (15) years;

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(d). Board of Investment submitted that energy sector is the priority sector of the government to cater the short fall in the country. Smooth and affordable supply of energy is the backbone for industrial growth as well as attracting foreign direct investment in the country. In view thereof, Board of Investment supports the grant of generation licence, subject to consumer friendly and competitive tariff and fulfilling codal/technical formalities and rules & regulations;

(e). LESCO commented that as per electrical network diagram prepared by NTDC (Year 2019-20) power will be evacuated from the power plant of NPPMCPL through double circuit 500KV transmission line. Accordingly, load flow studies for interconnection of the said power plant with NTDC network at 500KV Grid Station Lahore (South) have been carried out by NTDC keeping in view the downstream 220KV network extension plan (of NTDC) and 132KV network expansion plans of LESCO and FESCO along with other DISCOs. The expansion plans of DISCOs have already been submitted to NEPRA in the shape of Distribution Integrated Investment Plan-DIIP during tariff determination; and

(f). Ministry of Water & Power commented that this project is critical part of generation development in Pakistan and on fast track basis for implementation and this Ministry supports the proposal. Therefore, NEPRA may process the generation licence application as per provision of NEPRA Act, GoP policy guidelines and ECC decisions from time to time.

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(iii). The Authority examined above comments of stakeholders and observed that Ministry of Petroleum and Natural Resources, Board of Investment LESCO and Ministry of Water &Power have favored the establishment of the

project of NPPMCPL whereas, Mr. Wasim Akbar and Anwar Kamal Law Associates have raised concerns against the project. In view of the said, the Authority considered it appropriate to seek perspective of NPPMCPL on the comments of Mr. Wasim Akbar and Anwar Kamal Law Associates.

(iv). In its reply to the observation of Mr. Wasim Akbar, NPPMCPL submitted that the allegation raised by Mr. Wasim Akbar concerning the disposal of human waste from the toilets directly into the irrigation water-course passing through the boundary of the project is false, against the facts and clearly based on malafide, hence vehemently denied. It is categorically stated that no human waste is being disposed in the said water-course. In fact, proper sewerage system comprising of septic tank has been constructed. The waste sludge from these tanks is intermittently removed by using a specialized sucking bowser which is then properly disposed off.

(v). In response to the comments of Anwar Kamal Law Associates, NPPMCPL submitted that it is a wholly owned company by the Federal Government and not the Government of the Punjab and the project is being set up to meet with the electricity shortage in the country at present and also for the ever growing demand thereof. Regarding financing of the project, NPPMCPL submitted that the project is currently being financed by the Federal Government through the Public Sector Development Program (PSDP) to the extent of the 30% equity. However, the remaining 70% funding will also be financed by the Federal Government in the form of loan. The plant may be privatized in future under the applicable laws of the country and the alleged apprehension of Anwar Kamal Law Associates in this regard is completely wrong.

(vi). Regarding the apprehensions of Anwar Kamal Law Associates that whether the power plant will be an addition in the generation basket of CPPA-G or it is a replacement of any existing power plant, NPPMCPL informed that the power plant will add to the capacity of national grid, which presently has less supply than demand. It may be noted that certain old/outdated power plants in the public sector which may have completed their useful life have been decommissioned by NEPRA so in that sense the power produced by this plant may also be considered as a replacement of such power plants.

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(vii). On the queries of Anwar Kamal Law Associates regarding backup fuel and fuel supply agreement, NPPMCPL clarified that high speed diesel will be used as alternate/backup fuel. Further, copy of the gas supply agreement (under final negotiation with SNGPL) has already been provided to NEPRA. Although the initial term of the gas supply agreement is fifteen (15) years and after the initial term, the parties will mutually extend the same for another fifteen years. Further, Ministry of Petroleum and Natural Resources has issued a letter dated October 06, 2015 to NPPMCPL in respect of firm allocation of 200 MMCFD RLNG for its Balloki power project w.e.f. 1st April 2017 on firm take and pay basis.

(viii). On the observation of Anwar Kamal Law Associates regarding Plant's technology, location, fuel, hazards to environment and least-cost-generation plan etc. NPPMCPL submitted that the plant is located near the load centre, and is based on the latest and most efficient state of the art technology and does not pose any environmental hazard. In this regard, NOC has been issued by the relevant environment protection department in accordance with applicable law. Furthermore, being the latest and most efficient power generation plant in the country and CPPA-G has also provided to NEPRA its consent to purchase power from this plant.

(ix). On the observation and analysis of Anwar Kamal Law Associates regarding under utilization of existing power plants, NPPMCPL has submitted that this objection is incorrect and result deduced by the Anwar Kamal Law Associates from compiling of data is also lopsided and as such is not a true and correct reflection of the facts. Installation of new power plants and thereby addition in the generation capacity is always an ongoing process in any system. NPPMCPL further clarified that since the combined cycle power plant at Balloki is a base load plant, therefore, there is very likelihood that it will not be underutilized. The 1275.50 MW combined cycle power plant at Balloki is and will be the most efficient plant in the country. Surpassing all existing plants which have old/or obsolete technology, hence billions of rupees will be saved on account of its operation.

(x). Regarding the objections of Anwar Kamal Law Associates on long term power purchase agreement and heavy capacity purchase price, NPPMCPL

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pointed out that under the current regime, per unit electricity cost is a sum of (i) capacity payment price, and (ii) energy payment price. Capacity payments are a smaller portion of the total per unit cost. Fuel cost, which is the larger portion, is completely passed through item in the tariff. Simple cost of fuel does not determine the per unit electricity cost: it is a product of fuel cost with efficiency of the power plant. If the older generation plants with degraded efficiency ratings of 35% (majority of IPPs) to 57% (few IPPs) are operated only in consideration of capacity payments, the consumer will be made worse-off as per unit electricity cost will increase. New power plants of high efficiency, such as Balloki combined cycle power plant, having efficiency of 60.44% or more, when operated as base load power plant, will result in cheaper per unit electricity for the consumer while simultaneously reducing the power outages.

(xi). On the query regarding the transmission of RLNG from Karachi Port to the project site, NPPMCPL informed that an independent pipeline for transportation of RLNG for the purpose has been initiated and is likely to be completed by December 2017.

(xii). The reply to the comments/observations of the stakeholders, submitted by the applicant were examined and found satisfactory. Accordingly, it is considered appropriate to process the application of the applicant for the grant of generation licence as stipulated in the Regulations and NEPRA Licensing (Generation) Rules, 2000 (the Licensing Generation Rules).

(D). Analysis of the Authority

(i). The key features of the application under consideration are that National Power Parks Management Company (Private) Limited (NPPMCPL) is setting up a combined cycle power plant located at 3.7 KM off Changa Manga-Chunian Road (left bank of Balloki-Sulemanki Link Canal), District Kasur, in the Province of Punjab. In this regard, NPPMCPL has approached the Authority for the grant of generation Licence for its said generation facility. The Authority observes that major issues related to RLNG based projects have already been deliberated by the Authority during the hearing held on February 09, 2016 in the case of

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Quaid-e-Azam Thermal Power (Pvt.) Limited and properly been addressed in the determination of the Authority in the said matter.

(ii). The Authority has considered the information provided by the applicant along with the generation licence application including feasibility study of the project, the interconnection and load flow studies, comments of the stakeholders, reply of NPPMCPL to the comments of various stakeholders.

(iii). The applicant company i.e. NPPMCPL is a wholly owned company by the Federal Government and was incorporated as a company limited by shares under Section-32 of the Companies Ordinance 1984 (XLVII of 1984), having Corporate Universal Identification No. 0092235, dated March 02, 2015. NPPMCL has submitted that an International Competitive Bidding (ICB) process was carried out fully compliant with Public Procurement Regulatory Authority (PPRA) and the contract was awarded to Harbin Electric International Company Limited & Habib Rafiq (Pvt.) Limited.

(iv). The proposed combined cycle power plant of NPPMCPL will be consisting of 2x427.5 MW gas turbines, two (02) heat recovery steam generators and 1x420.50 MW steam turbine. The make/model of the gas turbine is General Electric /H Class-9HA.01 whereas make/model of the steam turbine is General Electric /STF30C. NPPMCPL submits that configuration has been finalized after duly considering different options offered by various bidders. The sponsors have selected the proposed technology based on the highest efficiency with the proposed configuration (i.e. two gas turbines and one steam turbine). Further, the net efficiency of the proposed generation facility on combined cycle mode will be 61.63% which will provide an economically feasible solution to relieve power shortages in the country.

(v). The Authority observes that the Ministry of Petroleum and Natural Resources has issued a letter dated October 06, 2015 to NPPMCPL in respect of firm allocation of 200 MMCFD RLNG for its Balloki power project. The said letter states that Ministry of Petroleum and Natural Resources allocates 200 MMCFD RLNG w.e.f. 1st April 2017 on firm take and pay basis for Balloki power project for fifteen (15) years. Further, NPPMCPL has provided copy of the gas supply

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agreement with SNGPL under which gas will be supplied to Balloki power plant on continuous basis to ensure its base load operation.

(vi). Regarding land of the of the project, the Authority has observed that NPPMCPL has acquired about 138 acres (1105 Kanal) land at Balloki, District Kasur in the Province of Punjab as shown in schedule-I of the licence. In this regard, the Authority directs NPPMCPL that the aforementioned land shall be exclusively used for the proposed RLNG based combined cycle power project and NPPMCPL cannot carry out any other generation activity on this land except with prior approval of the Authority.

(vii). Regarding grid interconnection of the project, the Authority observes that NTDC has carried out the load flow and short circuit studies pertaining to the dispersal of electric power from the proposed generation facility. In this regard, on the basis of load flow study results, it has been confirmed that the electric power from the imported coal based generation facility of NPPMCPL can be dispersed to the National Grid in a reliable manner. It has been confirmed that the electric power from the combined cycle power plant at Balloki will be evacuated through 500 KV double circuit transmission line(s). Further, NPPMCPL has received the confirmation from CPPA-G for purchase of power from the project of NPPMCPL. Moreover, NTDC through its letter dated March 22, 2016 has confirmed that the system can support the inclusion of combined cycle power plant at Balloki. In this regard, the Authority has observed that transient and stability studies have not been provided.

(viii). Regarding the impact of the project on environment, the Authority is of the opinion that the proposed project is based on imported RLNG which is considered as a clean fuel. In this regard, NPPMCPL has confirmed that its proposed project will comply with the environmental standards. Further, NPPMCPL has provided a copy of the necessary NOC issued by Environmental Protection Department, Govt. of the Punjab.

(ix). Regarding allocation of gas for operation of the project, the Authority observes that NPPMCPL has got firm allocation of imported RLNG supply from Sui Northern Gas Pipelines Limited (SNGPL). In this regard, NPPMCPL has submitted

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copy of the gas supply agreement with SNGPL. Further, Oil and Gas Regulatory Authority (OGRA) has also approved the gas supply agreement between NPPMCPL and SNGPL.

(x). Regarding the infrastructure for transmission of RLNG from Karachi Port to the Balloki project site, the Authority has been informed that an independent pipeline has been initiated for transportation of RLNG and the same is likely to be completed by December 2017. In addition to the said, NPPMCPL has submitted that OGRA has also approved construction of 30" dia x8KM spur pipeline for Balloki power plant.

(xi). In view of the clarification and justifications given above, the Authority is of the considered view that issues arising out of the comments of the stakeholders on the application of NPPMCPL have been addressed and the project of NPPMCPL fulfills the eligibility criteria for grant of generation licence as given under the NEPRA Act, rules and regulations for grant of generation licence.

(E). Grant of Generation Licence

(i). Electricity is a fundamental element for the economic growth of any country. The electricity consumption per capita has a strong correlation to the social development indices (human development index, life expectancy at birth, infant mortality rate, and maternal mortality) and economic indices (such as GDP per capita etc.).

(ii). Increasing electricity consumption per capita can directly stimulate faster economic growth and indirectly achieve enhanced social development. In short, the economic growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of electricity. In view of the said, the Authority is of the considered opinion that for sustainable development, all types of electric power generation resources including natural gas (imported/local), coal (imported/indigenous), hydel, wind, solar and other renewable energy resources must be tapped and developed on priority basis both in public and private sectors.

(iii). The existing energy mix of the country is heavily skewed towards the thermal power plants, mainly operating on furnace oil. Prices of furnace oil may not

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remain in the existing level for the longer period. Therefore, the Authority considers it imperative that efforts must be made to change the energy mix towards cheaper fuels. With the depleting natural gas reserves in the country and relatively longer lead time for the construction of hydro electric power projects, the mega projects using coal and RLNG are considered to be one of the best option in the short and medium term planning. Therefore, to reduce the demand-supply gap and to achieve sustainable development, it is vital that coal and RLNG projects are given priority for power generation and their development is encouraged. In view of the said, the CCI approved the Power Policy 2015 which envisages rationalizing the energy mix and reducing the demand-supply gap through different fuels. In consideration of the said, the Authority is of the view that the proposed project of NPPMCPL is consistent with the provisions of Power Policy 2015.

(iv). The term of a generation licence under the Rule-5 (1) of the Rules, is to commensurate with the maximum expected useful life of the units comprised in a generating facility. According to the international benchmarks available, the useful life of a combined cycle power plant is normally taken at least thirty (30) years from its COD. In view of the said, the Authority hereby sets the term of the generation licence of NPPMCPL for thirty (30) years from COD of the project.

(v). Regarding tariff that NPPMCPL will charge from its power purchaser, it is clarified that the Authority through its determination No. NEPRA/TRF-359/NPPMCL-2016/10954-10956 dated August 09, 2016 has granted NPPMCPL a cost plus tariff for its project. The Authority directs NPPMCPL to follow the terms and conditions of the approved tariff in letter and spirit and charge the power purchaser only such tariff which has been determined, approved or specified by the Authority.

(vi). Regarding compliance with the environmental standards, the Authority directs NPPMCPL to ensure that the project will comply with the environmental standards during the term of the generation licence. In view of the said, the Authority has included a separate article along with other terms and conditions that the licensee will comply with relevant environmental standards. Further, the Authority also directs NPPMCPL to submit a report on a bi-annual basis, confirming that operation of its project is compliant with required

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environmental standards as prescribed by the concerned environmental protection agency.

In view of the above, the Authority hereby decides to approve the grant of generation licence to NPPMCPL subject to the conditions that NPPMCPL shall submit the remaining parts of the interconnection study (i.e. transient & stability study) duly approved by NTDC within two (02) months of grant of generation licence. The terms and conditions as set out in the generation licence are annexed to this determination. The grant of generation licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed there under and the other Applicable Documents.

Authority

Maj. (R) Haroon Rashid
(Member)

Syed Masood-ul-Hassan Naqvi
(Member) *

Himayat Ullah Khan
(Member/Vice Chairman)

23.9.16.

Brig. (R) Tariq Saddozai
(Chairman)

* Comments / Reservations pertaining to issuance of "Licence" is cited in RM-16-498 dt. 18/8/2016.

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National Electric Power Regulatory Authority (NEPRA)
Islamabad – Pakistan

GENERATION LICENCE

No. IGSPL/69/2016

In exercise of the Powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, the Authority hereby grants a Generation Licence to:

NATIONAL POWER PARKS MANAGEMENT COMPANY (PRIVATE) LIMITED

Incorporated Under Section 32
of the Companies Ordinance, 1984 (XL VII of 1984) Having Corporate Universal Identification No. 0092235, Dated March 02, 2015

for its Re-Gasified Liquefied Natural Gas Based Thermal Generation Facility/Combined Cycle Power Plant Located at Balloki, District Kasur in the Province of Punjab

(Installed Capacity: 1275.50 MW Gross ISO)

to engage in generation business subject to and in accordance with the Articles of this Licence.

Given under my hand on 29th day of September Two Thousand & Sixteen and expires on 28th day of January Two Thousand & Forty Eight.

Registrar

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Article-1
Definitions

1.1 In this Licence

(a). "Act" means "the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997";

(b). "Applicable Documents" have the same meaning as defined in the Rules;

(c). "Authority" means "the National Electric Power Regulatory Authority constituted under Section-3 of the Act";

(d). "Bus Bar" means a system of conductors in the generation facility of the Licensee on which the electric power of all the generators is collected for supplying to the Power Purchaser;

(e). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility of the Licensee is commissioned;

(f). "CPPA-G" means "Central Power Purchasing Agency (Guarantee) Limited" or any other entity created for the like purpose;

(g). "Distribution Code" means the distribution code prepared by distribution company and approved by the Authority, as it may be revised from time to time with necessary approval of the Authority;

(h). "Grid Code" means the grid code prepared by NTDC and approved by the Authority, as it may be revised from time to time by NTDC with necessary approval of the Authority;

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(i). "IEC" means International Electrotechnical Commission or any other entity created for the like purpose and its successors or permitted assigns;

(j). "IEEE" means the Institute of Electrical and Electronics Engineers and its successors or permitted assigns;

(k). "Law" means the Act, relevant rules and regulations made there under and all the Applicable Documents;

(l). "Licensee" means "**National Power Parks Management Company (Private) Limited**" and its successors or permitted assigns;

(m). "NTDC" means National Transmission and Despatch Company Limited and its successors or permitted assigns;

(n). "Power Purchase Agreement" means the power purchase agreement, entered or to be entered into by and between the Power Purchaser and the Licensee, for the purchase and sale of electric energy generated by the generation facility, as may be amended by the parties thereto from time to time;

(o). "Power Purchaser" means the CPPA-G purchasing electric power on behalf of XW-DISCOs from the Licensee, pursuant to Power Purchase Agreement for procurement of electricity;

(p). "Regulations" mean "the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999" as amended or replaced from time to time;

(q). "Rules" mean "the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000";

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(r). "XW DISCO" means "an Ex-WAPDA distribution company engaged in the distribution of electric power".

1.2 Words and expressions used but not defined herein bear the meaning given thereto in the Act or Rules and regulations issued under the Act.

Article-2
Applicability of Law

This Licence is issued subject to the provisions of the Law, as amended from time to time.

Article-3
Generation Facilities

3.1 The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical and functional specifications and other details specific to the generation facility of the Licensee are set out in Schedule-I of this Licence.

3.2 The net capacity of the generation facility of the Licensee is set out in Schedule-II hereto.

3.3 The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility before its COD.

Article-4
Term of Licence

4.1 The Licence is granted for a term of thirty (30) years from the COD of the generation facility.

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4.2 Unless suspended or revoked earlier, the Licensee may apply for renewal of the Licence within ninety (90) days prior to the expiry of the term of the Licence, as stipulated in the Regulations.

Article-5
Licence fee

After the grant of the Generation Licence, the Licensee shall pay to the Authority the Licence fee, in the amount and manner and at the time set out in the National Electric Power Regulatory Authority (Fees) Rules, 2002.

Article-6
Tariff

The Licensee shall charge only such tariff which has been determined, approved or specified by the Authority.

Article-7
Competitive Trading Arrangement

7.1 The Licensee shall participate in such manner as may be directed by the Authority from time to time for development of a Competitive Trading Arrangement. The Licensee shall in good faith work towards implementation and operation of the aforesaid Competitive Trading Arrangement in the manner and time period specified by the Authority. Provided that any such participation shall be subject to any contract entered into between the Licensee and another party with the approval of the Authority.

7.2 Any variation or modification in the above-mentioned contracts for allowing the parties thereto to participate wholly or partially in the Competitive Trading Arrangement shall be subject to mutual agreement of the parties thereto and such terms and conditions as may be approved by the Authority.

Article-8
Maintenance of Records

For the purpose of sub-rule (1) of Rule-19 of the Rules, copies of records and data shall be retained in standard and electronic form and all such records and data

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shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

Article-9
Compliance with Performance Standards

The Licensee shall comply with the relevant provisions of the National Electric Power Regulatory Authority Performance Standards (Generation) Rules 2009 as amended from time to time.

Article-10
Compliance with Environmental Standards

10.1 The Licensee at all times shall comply with the environmental standards as may be prescribed by the relevant competent authority as amended from time to time.

10.2 The Licensee shall provide a certificate on a bi-annual basis, confirming that the operation of its generation facility is in line with environmental standards as prescribed by the relevant competent authority.

Article-11
Power off take Point and Voltage

The Licensee shall deliver power to the Power Purchaser at the outgoing bus bar of its grid station. The up-gradation (step up) of generation voltage up to the required interconnection voltage level will be the responsibility of the Licensee.

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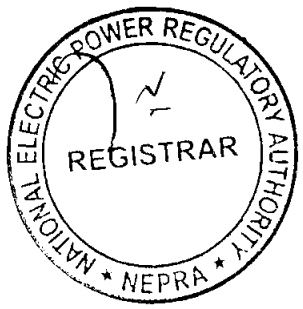
Article-12
Provision of Information

12.1 The obligation of the Licensee to provide information to the Authority shall be in accordance with Section-44 of the Act.

12.2 The Licensee shall be subject to such penalties as may be specified in the relevant rules made by the Authority for failure to furnish such information as may be required from time to time by the Authority and which is or ought to be or has been in the control or possession of the Licensee.

Article-13
Design & Manufacturing Standards

All the components of the generation facility shall be designed, manufactured and tested according to the latest IEC, IEEE or any other equivalent standards. All plant and equipment shall be unused and brand new.



SCHEDULE-I

The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule

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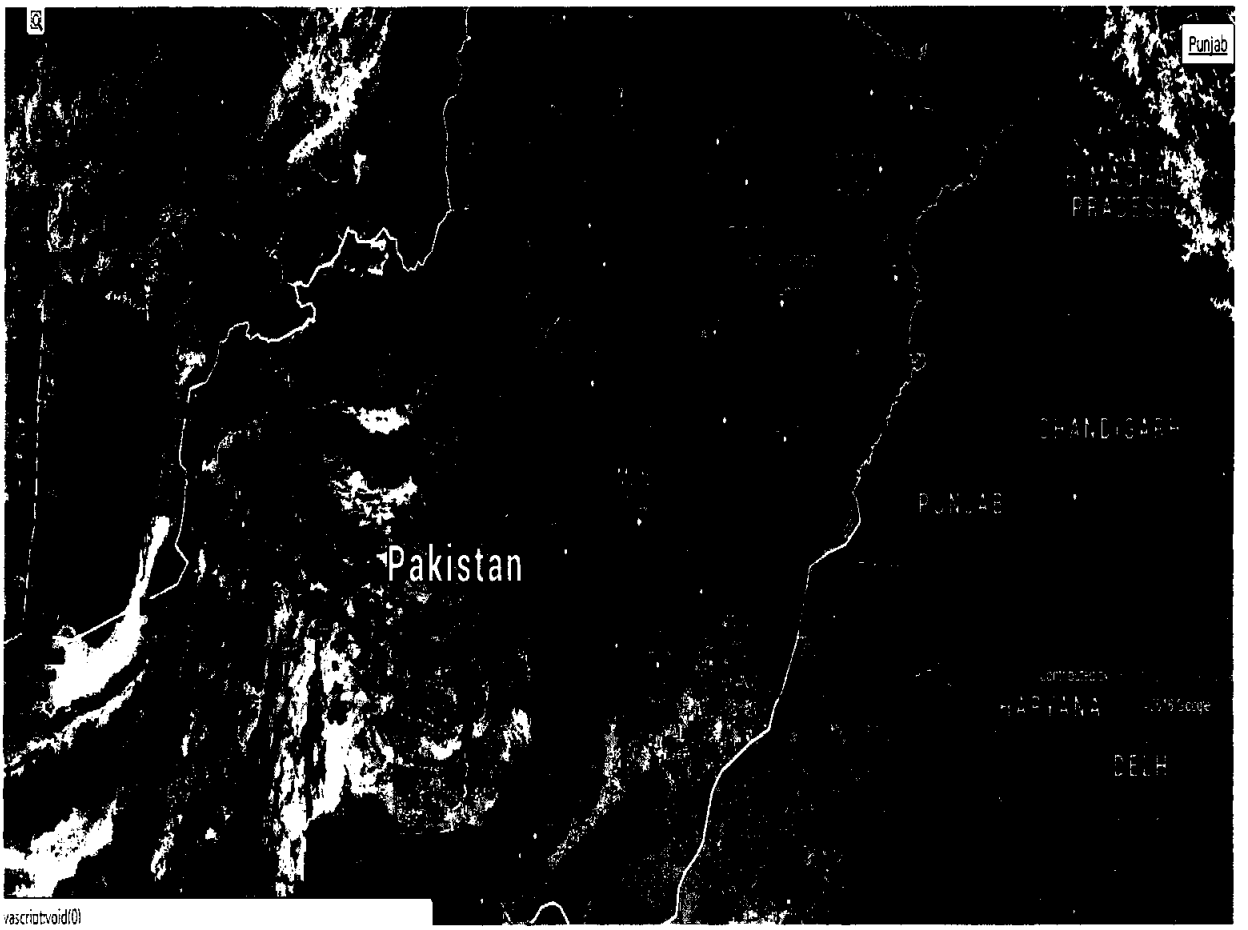
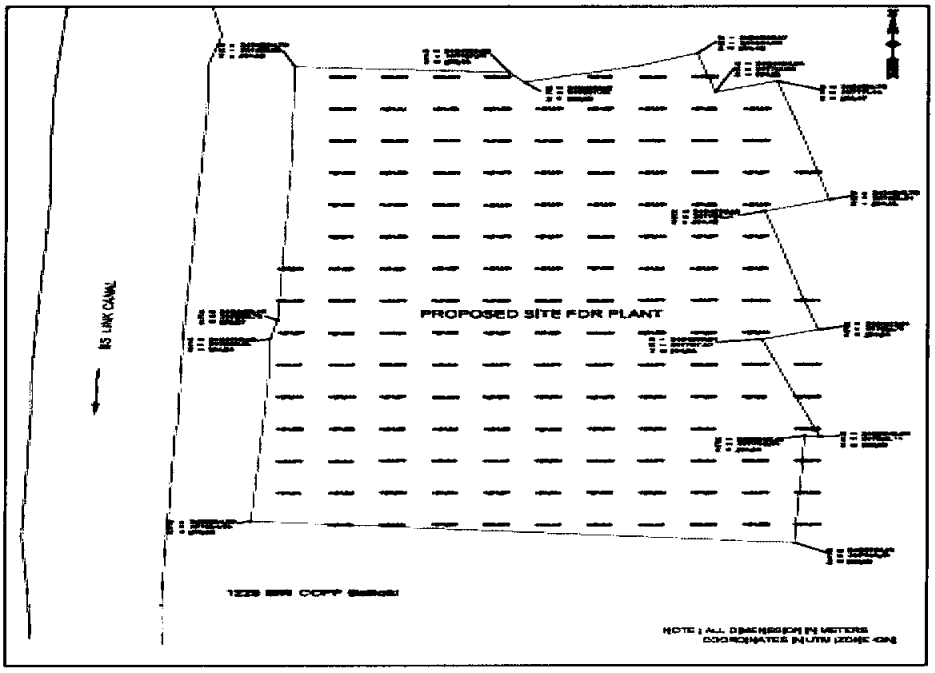
Location of the Generation Facility/Thermal Power Plant of National Power Parks Management Company (Private) Limited (NPPMCPL)



Land Coordinates of the Generation Facility/Thermal Power Plant of NPPMCPL



Project Land: 7496 Kanals

Land Coordinates in UTM (Zone 43N)

Boundary Corners	Latitude (m)	Longitude (m)
Corner-1	3433780.15	397789.09
Corner-2	3433814.58	397264.66
Corner-3	3434524.78	397306.85
Corner-4	3434501.72	397771.66

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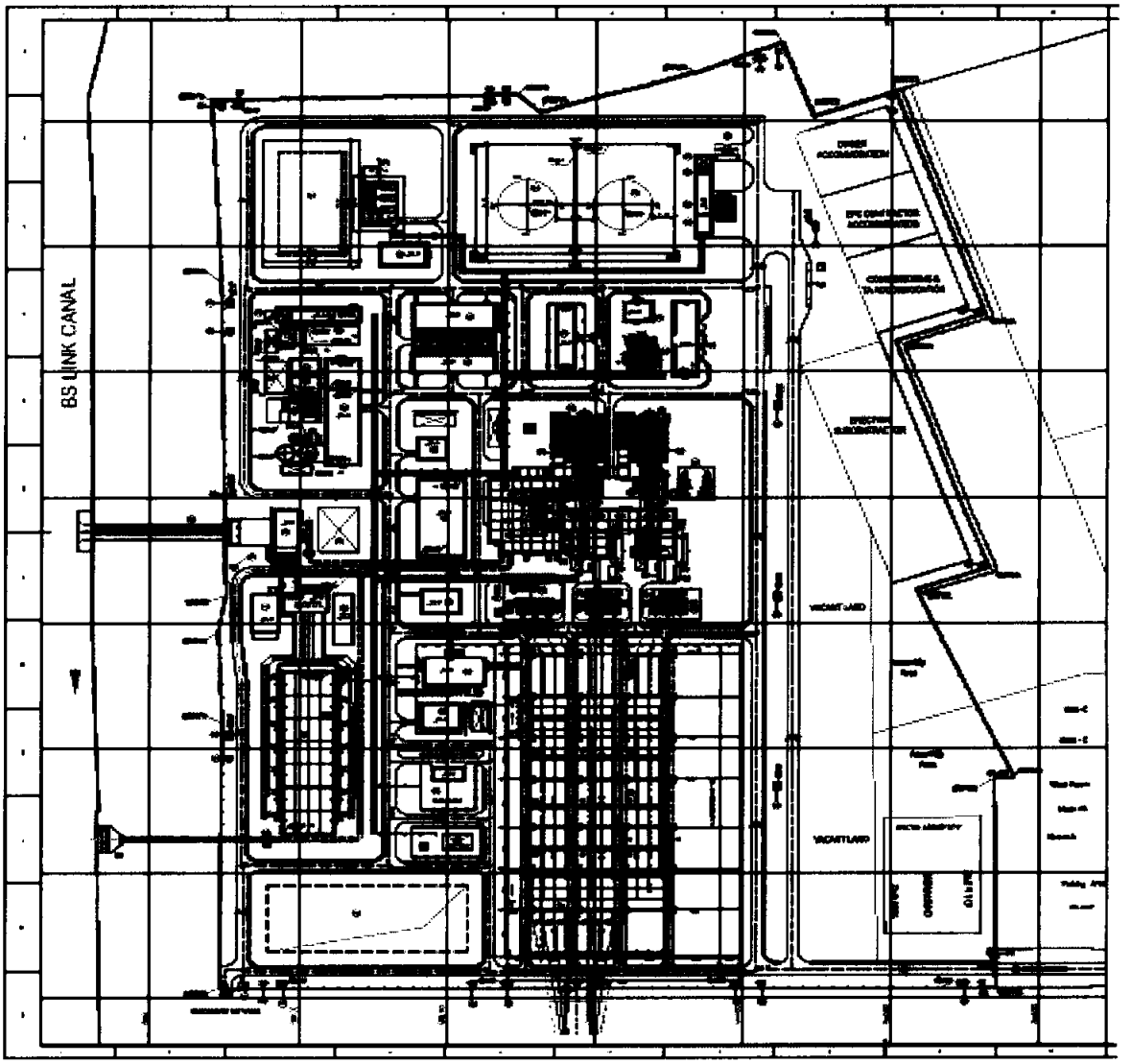
Layout
of the Generation Facility/Thermal Power Plant of NPPMCPL



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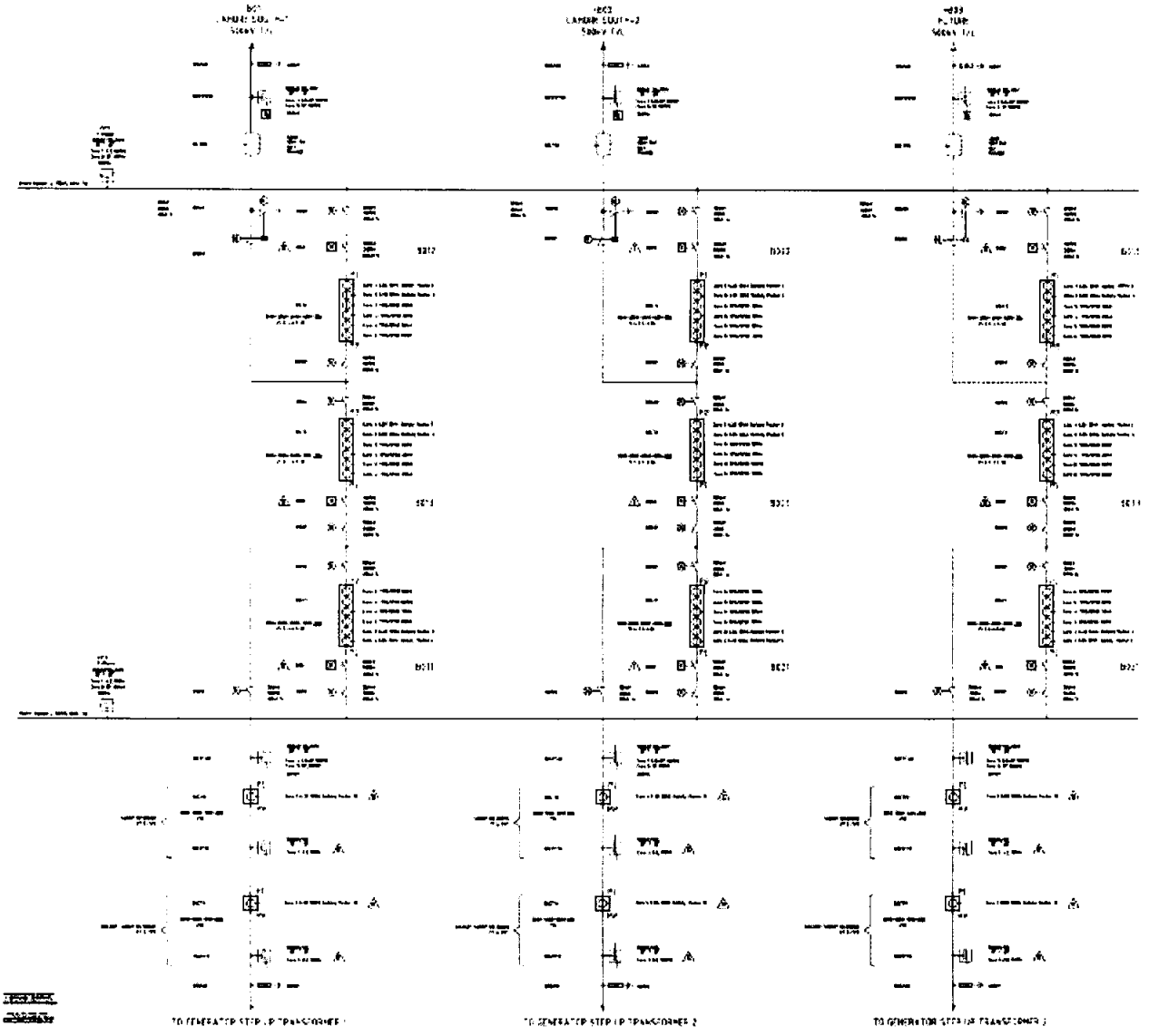
Single Line Diagram (Electrical) of the Generation Facility/Thermal Power Plant of NPPMCPL



Interconnection Facilities/ Transmission Arrangements for Dispersal of Power from the Generation Facility of NPPMCPL

The electric power from the Re-Gasified Liquefied Natural Gas based thermal generation facility/power plant of the licensee (located at Balloki, District Kasur in the Province of Punjab) will be dispersed to the National Grid.

2. The interconnection facilities /transmission arrangements for supplying to national grid from the above mentioned generation facility shall be at 500 KV level. The dispersal/interconnection arrangement for supplying to National Grid will be consisting of a 500 KV double circuit transmission line (measuring about 40.00 km in length) from the project to Lahore South. For this purpose a 750 MVA, 500/200 KV Transformer will be added at Lahore South.

3. Any change in the above mentioned interconnection facilities/transmission arrangements for dispersal of electric power as agreed by the Licensee, NTDC and the power purchaser shall be communicated to the Authority in due course of time.

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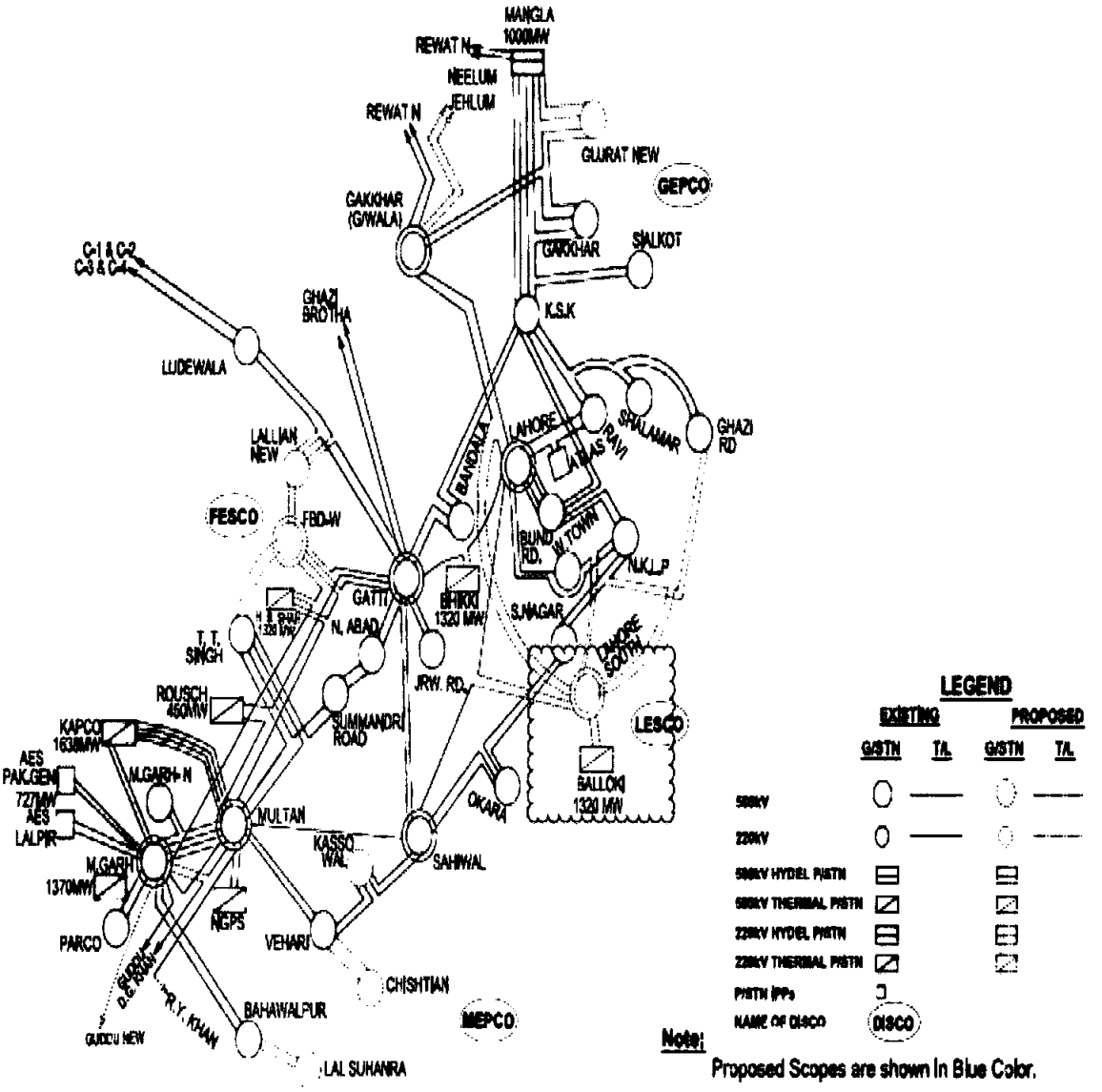
Schematic Diagram of Interconnection Arrangement for Dispersal of Power from the Generation Facility/ Thermal Power Plant of NPPMCPL



LEGEND

	EXISTING		PROPOSED	
	G/STN	T/L	G/STN	T/L
500KV	○	——	○	——
220KV	○	——	○	——
500KV HYDEL PSTN	⊟		⊟	
500KV THERMAL PSTN	⊠		⊠	
220KV HYDEL PSTN	⊟		⊟	
220KV THERMAL PSTN	⊠		⊠	
PSTN IPPs	⊐			
NAME OF DISCO	DISCO			

Note:
Proposed Scopes are shown In Blue Color.

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Detail of Generation Facility/Thermal Power Plant

(A). General Information

(i).	Name of Company/ Licensee	Limited National Power Parks Management Company (Private) Limited
(ii).	Registered Office	Malik Plaza, 2nd Floor 7-C/1, MM Alam Road, Gulberg-III, Lahore
(iii).	Business Office	-Do-
(iv).	Location of the Generation Facility/ Power Plant	Balloki, District Kasur, in the Province of Punjab
(v).	Type of Generation Facility/ Power Plant	Thermal Generation Facility

(B). Configuration of Generation Facility

(i).	Type of Technology	Combined Cycle Power Plant having two (02) Gas Turbines, two (02) Heat Recovery Steam Generators (HRSGs) and One (01) Steam Turbine	
(ii).	Number of Units/Size (MW)	2 x 427.50 MW Gas Turbine + 1 x 420.50 MW Steam Turbine	
(iii).	Unit Make/Model/Type & Year of Manufacture Etc.	Gas Turbine	General Electric /H Class-9HA.01
		Steam Turbine	General Electric /STF30C
(iv).	COD of the Generation Facility/ Power Plant (Anticipated)	January 29, 2018	
(v).	Expected Useful Life of the Generation Facility/ Power Plant from COD	30 years	

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(C). Fuel/Raw Material Details

(i).	Primary Fuel	Re-Gasified Liquefied Natural Gas (RLNG)	
(ii)	Back-Up Fuel	High Speed Diesel (HSD)	
(iii).	Fuel Source	Primary Fuel	Back-Up Fuel

		Imported	Imported/Indigenous
(iv).	Fuel Supplier	Primary Fuel	Back-Up Fuel
		Sui Northern Gas Pipeline Limited-SNGPL	Pakistan State Oil-PSO/Total Parco/Shell Pakistan/Attock Petroleum Limited
(v).	Supply Arrangement	Primary Fuel	Back-Up Fuel
		Pipeline	Through Oil Tankers/Bowsers
(vi).	No of Storage Tanks	Primary Fuel	Back-Up Fuel
		Not applicable	02
(vii).	Storage Capacity of each Tanks	Primary Fuel	Back-Up Fuel
		Not applicable	20,000 M^3
(viii).	Gross Storage	Primary Fuel	Back-Up Fuel
		Not applicable	40,000 M^3

(D). Emission Values

		Primary Fuel	Back-Up Fuel
(i).	NO_x (mg/Nm^3)	50	100
(ii).	CO (mg/Nm^3)	800	800
(iii).	PM_{10}	5	5

(E). Cooling System

(i).	Cooling Water Source/Cycle	Cooling water for the main cooling cycle will be taken from the adjacent Balloki-Sulemanki Link Canal plus wet cooling tower for 1-2 months during closure period of Canal per year. /Once Through Cycle System

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(F). Plant Characteristics

(i).	Generation Voltage	20-21 KV		
(ii).	Frequency	50 Hz		
(iii).	Power Factor	0.80 (lagging)-0.9(leading)		
(iv).	Efficiency of the Plant	61.63% net at reference site conditions		
(v).	Automatic Generation Control (AGC)	Yes/The AGC will be software integrated with DCS		
(vi).	Tentative Ramping Rate (MW/Min)	To be provided later being part of power purchase agreement		
(vii).	Tentative Time required to Synchronize to Grid	Start-up Mode	Simple Cycle	Combined Cycle
		Hot Start(Not more than 08 Hours)	60 Min	200 Min
		Warm Start (Not more than 48 Hours)	120 Min	280 Min
		Cold Start (More than 48 Hours)	180 Min	300 Min

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SCHEDULE-II

The Installed/ISO Capacity (MW), De-Rated Capacity At Mean Site Conditions (MW), Auxiliary Consumption (MW) and the Net Capacity At Mean Site Conditions (MW) of the Generation Facilities of Licensee are given in this Schedule

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SCHEDULE-II

(1).	Total/Gross Installed Capacity (ISO) of the Generation Facility/Power Plant (2 × 427.5 MW Gas Turbine + 1 × 420.5 MW Steam Turbine)	1275.50 MW
(2).	De-rated Capacity of Generation Facility/Power Plant at Reference/Mean Site Conditions)	1223.106 MW
(3).	Auxiliary Consumption of the Generation Facility/Power Plant at Reference/Mean Site Conditions	24.551 MW
(4).	Total Net Capacity of Generation Facility/Power Plant at Reference/Mean Site Conditions	1198.555 MW

Note

All the above figures are indicative as provided by the Licensee. The net capacity available to power purchaser for dispatch will be determined through procedure(s) contained in the Power Purchase Agreement or any other applicable document(s).

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