



Registrar

National Electric Power Regulatory Authority Islamic Republic of Pakistan

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No. NEPRA/R/DL/LAG-383/10018-23

June 13, 2017

Mr. M. Abbas Raza
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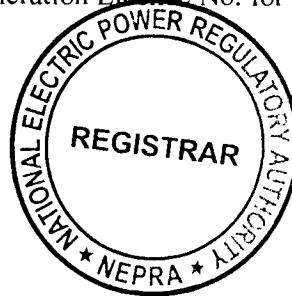
Subject: **Grant of Generation Licence No. IGSP/86/2017
Licence Application No. LAG-383
Indus Energy Limited (IEL)**

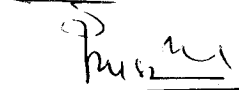
Reference: *Your application vide letter No. IEL/NEPRA/0032-2017, dated February 13, 2017 (received on February 13, 2017).*

Enclosed please find herewith Determination of the Authority in the matter of Application of Indus Energy Limited (IEL) for the Grant of Generation Licence, along with Generation Licence No. IGSP/86/2017 annexed to this determination granted by the National Electric Power Regulatory Authority (NEPRA) to IEL for its 31.00 MW Bagasse based Generation Facility/Co-Generation Facility located at Main Indus Highway, Kot Bahadur, Tehsil and District Rajan Pur, in the province of Punjab, pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

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

Enclosure: **Generation Licence
(IGSP/86/2017)**




13.06.17
(Syed Safer Hussain)

Copy to:

1. Chief Executive Officer, Alternative Energy Development Board (AEDB), 2nd Floor, OPF Building, G-5/2, Islamabad.
2. Chief Executive Officer, NTDC, 414-WAPDA House, Lahore.
3. Chief Executive Officer, CPPA-G, ENERCON Building, Sector G-5/2, Islamabad.
4. Chief Executive Officer, Multan Electric Power Company (MEPCO), NTDC Colony, Khanewal Road, Multan.
5. Director General, Environment Protection Department, Government of Punjab, National Hockey Stadium, Ferozpur Road, Lahore.

National Electric Power Regulatory Authority
(NEPRA)

Determination of the Authority
in the Matter of Application of Indus Energy Limited
for the Grant of Generation Licence

June 02, 2017
Case No. LAG-383

(A). Background

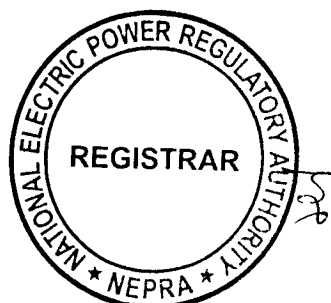
(i). In order to commercially harness the potential of the Renewable Energy (RE) Resources in the country, the Government of Pakistan (GoP) has set up Alternative Energy Development Board (AEDB) as one window facilitator for the potential investors. In this regard, GoP has formulated "the Policy for Development of Renewable Energy for Power Generation 2006" (the "RE Policy").

(ii). Initially, the scope of the RE Policy included development of hydro, wind, and solar technologies. Later on, GoP amended the scope of the RE Policy to include power projects based on bagasse, biomass, waste-to-energy and bio-energy. Further, GoP also extended the applicability of the RE Policy for an additional five years w.e.f. March 06, 2013. According to the said amendments, high-pressure (minimum 60 bar) bagasse/bio-mass based projects are envisaged to be set up as part of an existing sugar mill or as a separate entity.

(iii). In this regard, AEDB has issued Letter of Intent (LoI) to various developers. One such LoI was issued to Indus Energy Limited (IEL), for setting up an approximately 30.00 MW bagasse based project in the province of Punjab. According to the LoI, the company was required to approach the Authority for the grant of generation licence and acceptance of the already determined up-front tariff.

(B). Filing of Application

(i). IEL submitted an application on February 13, 2017 for the grant of generation licence in terms of Section-15 of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") read



with the relevant provisions of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "Licensing Regulations").

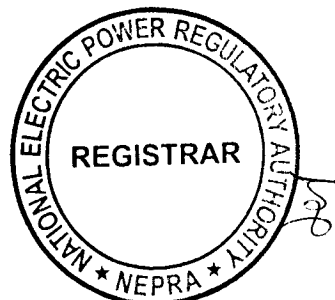
(ii). The Registrar examined the submitted application to confirm its compliance with the Licensing Regulations and observed that the application lacked some of the required information/documentation. Accordingly, IEL was directed to submit the missing information/documentation and the same was submitted on February 23, 2017. The Authority considered the matter 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 on March 21, 2017 for consideration of the grant of the generation licence as stipulated in Regulation-7 of the Licensing Regulations. The Authority approved an advertisement to invite comments of general public, interested and affected persons in the matter as stipulated in Regulation-8 of the Licensing Regulations. Accordingly, notices were published in one (01) Urdu and one (01) English newspapers on March 23, 2017.

(iii). In addition to the above, the Authority approved a list of stakeholders for seeking their comments for the assistance of the Authority in the matter in terms of Regulation-9(2) of the Licensing Regulations. Accordingly, letters were sent to different stakeholders as per the approved list on March 24, 2017, soliciting their comments for the assistance of the Authority.

(C). Comments of Stakeholders

(i). In reply to the above, the Authority received comments from three (03) stakeholders. These included Anwar Kamal Law Associates (AKLA), Ministry of Petroleum and Natural Resources (MoP&NR) and AEDB. The salient points of the comments offered by the said stakeholders are summarized below:-

- (a). AKLA highlighted different issues pertaining to the power sector of the country including (a). surplus capacity; (b) underutilization of power plants; and (c). induction of new power plants on "Take or Pay" basis etc. Further, AKLA contested that RE power plants are not viable financially and economically due to higher upfront

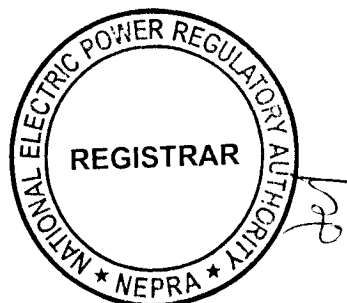


tariff and "must run condition". AKLA also questioned the induction of RE projects in the current scenario (i.e. reduction in oil prices, RLNG contract with Qatar, upcoming coal power projects and introduction of competitive market etc.), affordability vs. availability of electric power and long term PPAs on "Take or Pay" basis etc. AKLA stated that it not against setting up of new power plants and in this regard a very careful estimate of required generation capacities should be made or the licences should be granted on "Take and Pay" basis;

(b). MoP&NR stated that IEL intends to install bagasse fired cogeneration power plant and as such, no gas is required for utilization in this project. Therefore, the ministry has no objection/comments for grant of generation licence to IEL for its bagasse based power plant; and

(c). AEDB confirmed the issuance of the Lol for the project in terms of the RE Policy. Further, AEDB supported the issuance of generation licence to the project subject to fulfilment of all codal formalities in the matter.

(ii). The Authority reviewed the above comments of the stakeholders and decided to seek the perspective of IEL on the observations of AKLA. In reply to the said, IEL submitted that it is undertaking the Project under the RE Policy. IEL stated that AKLA has not pointed out any deficiency in its application for the grant of generation licence. Further, IEL stated that AKLA has not identified any non-compliance or disregard of any provisions of the applicable regulatory and procedural regime on its part. IEL submitted that its application for the grant of Generation Licence, all other steps and actions taken in pursuance of the Project, are strictly in line with the applicable regulatory and policy framework. Further, IEL highlighted that in terms of clause-(f) of the RE Policy it is mandatory for the power purchaser to evacuate all the energy offered to it by the power producer, failing which such plants shall be deemed to have dispatched and sold the energy to the power purchaser.



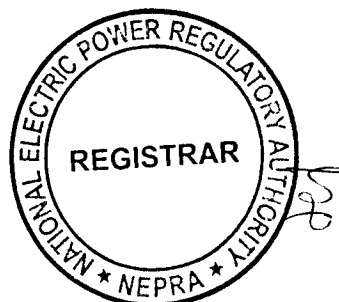
(iii). IEL submitted that the “take-or-pay” regime provides the power producer an assured revenue stream that ensures an adequate return on the significant project capital investment and risks to which power producers are exposed. Moreover, it is often the most important means for a power producer to secure the substantial external debt financing on limited recourse terms that energy projects typically require. IEL stated that the comments of AKLA are totally misplaced and is a myopic view of the situation. In particular, the comments are generally aimed towards the problems of the power sector and are not relevant to the project.

(iv). Further to the above, IEL submitted that comments of AKLA are discrediting and contesting the valid and current policies of power generation duly approved by the GoP. Moreover, it is reiterated that as comments of AKLA are general and pertain to the overall state of the power industry, the same do not warrant any specific response from IEL and are irrelevant to the project. The Authority may if it deems appropriate at its own discretion, take up the matters highlighted in the comments, which are extraneous to the project, in separate proceedings.

(v). IEL submitted that all projects mentioned by AKLA in its Comments are thermal based power plants. It is erroneous to compare bagasse based power projects with fossil fuel based thermal power plants. Bagasse is an indigenous and renewable energy source. Fossil energy resources primarily consist of natural gas and furnace oil. In this regard, it is pertinent to note that domestic oil supply is considered negligible in Pakistan and natural gas resources are also becoming scarce. On the other hand, while substantial coal deposits are available in the country, the cost of mining is very high. Additionally, import of fossil fuels leads to depletion of foreign exchange reserves. In light of the foregoing, the comparisons that AKLA has attempted to draw between bagasse based power projects and other fossil fuel based thermal power plants are unjustified and incorrect. In fact, AKLA has completely ignored the fact that bagasse based projects are foreign currency neutral and all fuel for such projects is locally generated and is readily

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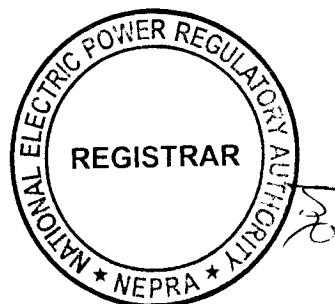
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available for use by power plants. In view of the above, IEL requested the Authority to disregard the comments which are completely irrelevant and have no specific implication on the Project.

(vi). The Authority has considered the comments of the stakeholders, the reply of IEL and observes that AKLA have raised certain observations regarding the project. The Authority observes that AKLA while submitting its comments has referred to its previous correspondences made on different issues including (a). surplus capacity; (b). capacity payment without supplying electricity; (c). addition of high cost renewable plants; (d). underutilization of power plants; and (e). induction of new power plants on "Take or Pay" basis and others. In this regard, the Authority observes that it has duly addressed the aforementioned objections/comments and sent a comprehensive reply to AKLA through letter no. NEPRA/SAT-I/TRF-100/17060, dated December 27, 2016. The Authority reiterates its earlier findings and observations given in the aforementioned letter and is of the considered opinion that there is considerable supply demand gap resulting in load-shedding and load management. It is substantiated by the fact that the proposed generation facility of IEL is included in the future expansion plan of Multan Electric Power Company Limited (MEPCO) for which it has already given a consent to Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) which acts an agent for the utilities. Further, CPPA-G has also filed a power acquisition request for purchasing power from IEL. Regarding the observations of AKLA that RE projects should have "Take and Pay" tariff, the Authority hereby clarifies that it had already determined an upfront tariff which is on unit delivered basis which means that a power producer/generation company is paid only for the energy it delivers. In view of foregoing, the Authority considers that the observations of AKLA stand suitably addressed.

(vii). In consideration of the above and having addressed the comments/objections, the Authority considered it appropriate to proceed further in the matter of application of IEL for the consideration of grant of generation licence as stipulated in the Licensing Regulations and NEPRA Licensing (Generation) Rules 2000 (the "Generation Rules").

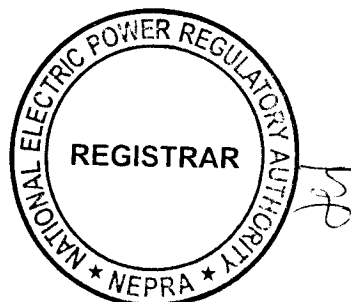


(D). Evaluation/Findings

(i). The Authority has examined the submissions of IEL including the information provided in its application for the grant of generation licence. The Authority has also considered the feasibility study of the project, interconnection & dispersal arrangement studies, provisions of the RE Policy, the relevant rules & regulations.

(ii). The Authority has observed that Indus Sugar Mills Limited (ISML) is the main sponsor of the project, set up back in the year 1992 and is located on Main Indus Highway, at Kot Bahadur, in the Tehsil and District of Rajanpur, in the Province of Punjab. Initially the sugar mill had a cane crushing capacity of 4000 Ton per day (TCD) which was gradually increased and currently stands at 10000 TCD. As part of the said facility, ISML owns, operates and maintains a generation facility/Captive Power Plant (CPP) with an installed capacity of 11.00 MW for which the Authority granted a generation licence (No. SGC/42/2008, dated September 25, 2008) for the above mentioned generation facility. ISML has been supplying 4.00 MW electric power to MEPCO from the said generation facility through a Power Purchase Agreement (PPA) dated April 08, 2008 and continuing the same as of today. According to the provided information, the sponsors have a total assets of Rs. 3.90 billion. In consideration of the above, the Authority is of the considered opinion that the sponsor has reasonable financial and technical capability to develop small and medium sized generation facilities.

(iii). The Authority has observed that based on the financial strength and other evaluation parameters, AEDB issued Lol for setting up a 30.00 MW bagasse based generation facility/co-generation facility/power plant within ISML at the above mentioned location. In order to implement the project, the sponsors incorporated a Special Purpose Vehicle (SPV) in the name of IEL under Section-32 of the Companies Ordinance 1984 (XLVII of 1984) having Corporate Universal Identification No. 0096891, dated December 28, 2015. The memorandum of association of SPV/project company includes *inter alia* power generation and its sale as one of its business objects. The Authority has observed that SPV/IEL

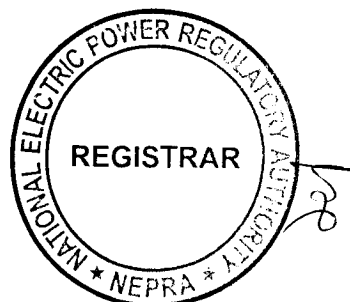


carried out a feasibility study of the project including inter alia, proposed equipment for generation facility/co-generation facility/power plant, soil tests reports, technical details pertaining to selection of steam turbine generator and other allied equipment, electrical studies, environmental study and project financing etc. According to the feasibility study, the project company/IEL will be setting up a 31.00 MW bagasse based generation facility/co-generation facility/power plant. In this regard, the sponsors have submitted necessary documents confirming that the proposed site of the project is in their name and possession.

(iv). In consideration of the above, IEL has confirmed that the proposed generation facility/co-generation facility/power plant will be consisting of 1 x 31.00 MW of steam turbine (extraction cum condensing type) with high pressure (110 bar, 540°C) travelling grate boiler. According to the submitted information, the net efficiency of the proposed generation facility/co-generation facility/power plant will be at least 24.50%. The proposed generation facility/co-generation facility/power plant will be utilizing bagasse for firing the boiler.

(v). The Authority has observed that the proposed generation facility/co-generation facility/power plant will utilize the bagasse generated from ISML. In this regard, IEL has confirmed that the bagasse generated from ISML will be sufficient to operate the proposed generation facility/co-generation facility/power plant to meet with the required plant factor and plant availability as stipulated in the determination of the Authority No. NEPRA/R/TRF-UTB-2013/5152-54, dated May 29, 2013 for the upfront tariff for bagasse based projects. IEL has also confirmed that if there is shortage of bagasse in the area due to change in pattern of crop of sugarcane, either the bagasse will be purchased from the market or some other bio-mass (including cane trash, cotton stick, mustard straw and rice husk etc.) will be utilized for the operation of the generation facility/co-generation facility/power plant. In view of the above, the Authority is satisfied that the project will have the required fuel for the operation of the proposed generation facility/co-generation facility/power plant.

(vi). The Authority has noted that IEL carried out the required interconnection and system stability study for dispersal of electric power from the

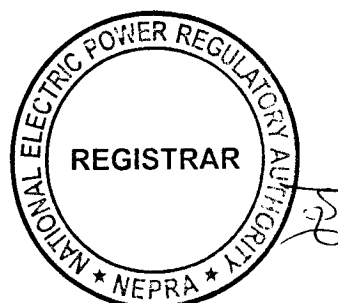


proposed generation facility/co-generation facility/power plant. According to the said study, the dispersal of electric power will be made at 132 kV voltage level. The dispersal/interconnection arrangement will be consisting of a 132 kV Double Circuit (D/C) transmission line (on ACSR LYNX Conductor) measuring about six (06) km (in length) for making an In-Out of existing 132 kV Single Circuit (S/C) Rojhan-Rajanpur transmission line connecting the generation facility/co-generation facility/power plant of IEL with the network of MEPCO. The Authority is satisfied that MEPCO has reviewed the proposal for interconnection study and accorded approval of the same. Further, NTDC has also endorsed the proposed arrangement for interconnection.

(vii). The Authority is encouraged that the proposed project of IEL will be utilizing bagasse which is RE source. However, the Authority has observed that the proposed generation facility/co-generation facility/power plant will be working as a conventional thermal power plant using steam turbine for generation of electric power/energy that may cause environmental concerns. In this regard, the Authority has observed that IEL carried out the Initial Environment Examination Study and Environment Protection Department, Government of the Punjab (EPDGoPb) has issued a No Objection Certificate (NOC) for the construction of the project.

(viii). In terms of Rule-3 of the Generation Rules, the Authority may grant a generation licence to any person to engage in the generation business. In the particular case under consideration, the Authority has observed that IEL has provided details of location, technology, size, net capacity/energy yield, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facilities stratifying provisions of Rule-3(2) and Rule-3(3).

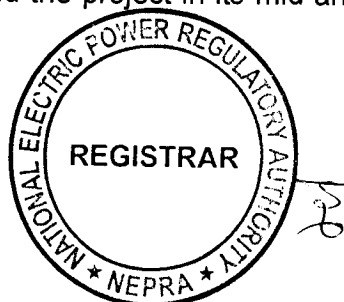
(ix). Regarding the Rule-3(5) of the Generation Rules which stipulates that the Authority may refuse to issue a generation licence where the site, technology, design, fuel, tariff or other relevant matters pertaining to the generation facility/co-generation facility/power plant proposed in an application for a generation licence are either not suitable on environmental grounds or do not satisfy the least cost



option criteria. In this regard, the Rule-3(5) of the Generation Rules stipulates the conditions pertaining to Least Cost Option Criteria which includes (a). sustainable development or optimum utilization of the RE or non-RE resources proposed for generation of electric power; (b). the availability of indigenous fuel and other resources; (c). the comparative costs of the construction, operation and maintenance of the proposed generation facility/co-generation facility/power plant against the preferences indicated by the Authority; (d). the cost and right-of-way considerations related to the provision of transmission and interconnection facilities; (e). the constraints on the transmission system likely to result from the proposed generation facility/co-generation facility/power plant and the costs of the transmission system expansion required to remove such constraints; (f). the short-term and the long-term forecasts for additional capacity requirements; (g). the tariff resulting or likely to result from the construction or operation of the proposed generation facility/co-generation facility/power plant; and (h). the optimum utilization of various sites in the context of both the short-term and the long-term requirements of the electric power industry as a whole.

(x). In consideration of the above, the Authority considers that the proposed project will result in optimum utilization of the RE which was earlier untapped, resulting in pollution free electric power. The Authority is of the considered opinion that bagasse is an indigenous fuel and such fuels should have a preference for the energy security. The Authority through its determination No. NEPRA/R/TRF-UTB-2013/5152-54, dated May 29, 2013 announced an upfront levelized tariff for the future bagasse projects which works out to be Pak. Rs. 10.4078/kWh which is very competitive considering the fact that not only cheap electric power will be generated but it will utilize the bagasse and other bio-mass which is otherwise burnt causing air and soil pollution.

(xi). As explained at Para-D(vi) above, the sponsors of the project carried out the grid interconnection study which concludes that the project will not face any constraints in transmission system. Further, being located at reasonable distance from the thick population, the project will not result in cost and right-of-way issue for the provision of transmission and interconnection facilities. The Authority has observed that MEPCO has included the project in its mid and long-term forecasts



for additional capacity requirements. In view of the said, the Authority is of the considered view that the project of IEL fulfills the eligibility criteria for grant of generation licence as stipulated in the NEPRA Act, rules and regulations and other applicable documents.

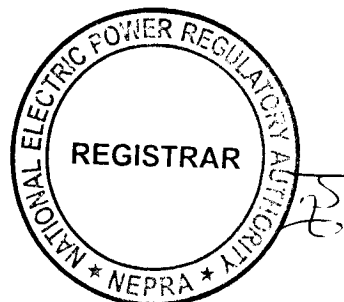
(E). Grant of Generation Licence

(i). The sustainable and affordable energy/electricity is a key prerequisite for socio-economic development of any country. In fact, the economic growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of energy/electricity. In view of the said reasons, the Authority is of the considered opinion that for sustainable development, all indigenous power generation resources including RE must be developed on priority basis.

(ii). The existing energy mix of the country is heavily skewed towards the thermal power plants, mainly operating on imported fossil fuel. The continuous import of fossil fuel not only creates pressure on the precious foreign exchange reserves of the country but is also an environmental concern. Therefore, in order to achieve sustainable development it is imperative that indigenous RE resources are given priority for power generation and their development is encouraged. The Energy Security Action Plan 2005 approved by the GoP, duly recognizes this very aspect of power generation through RE and envisages that at least 5% of total national power generation capacity (i.e. 9700 MW) to be met through RE resources by 2030.

(iii). The Authority considers that the proposed project of IEL is consistent with the provisions of Energy Security Action Plan 2005. The project will help in diversifying the energy portfolio of the country. Further, it will not only enhance the energy security of the country by reducing the dependence on imported fuel but will also help in reducing the carbon emission by generating clean electricity, thus improving the environment.

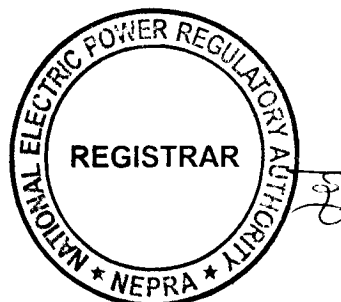
(iv). As explained at Para-D(viii) above, IEL has provided the details of location, technology, size, net capacity/energy yield, interconnection arrangements, technical details and other related information for the proposed



generation facility/co-generation facility/power plant. In this regard, the Authority has observed that sponsors of the project have acquired approximately twenty (20) acres of land for setting up the generation facility/co-generation facility/power plant. The said details have been incorporated in Schedule-I of the proposed generation licence. In this regard, the Authority directs IEL to utilize the said mentioned land for the exclusive purpose of setting up of the proposed generation facility/co-generation/power plant and not to change its use except with its prior approval.

(v). The term of a generation licence under Rule-5(1) of the Generation Rules is required to match with the maximum expected useful life of the units comprised in a generating facility. According to the information provided by IEL, the COD of the proposed generation facility/co-generation facility/power plant will be November 30, 2018 and it will have a useful life of more than thirty (30) years from its COD. In this regard, IEL has requested that the term of the proposed generation licence may be fixed to thirty (30) years in consistent with the term of the proposed Energy Purchase Agreement (EPA) to be signed with the power purchaser. The Authority considers that said submission of IEL about the useful life of the generation facility/co-generation facility/power plant and the subsequent request of IEL to fix the term of the generation licence is consistent with international benchmarks therefore, the Authority fixes the term of the generation licence to thirty (30) years from COD of the project.

(vi). Regarding the tariff, it is hereby clarified that under Section-7(3)(a) of the NEPRA Act, determining tariff, rate and charges etc. is the sole prerogative of the Authority. As explained at Para-D(v) above, the project is being developed in terms of the upfront tariff for bagasse based projects, announced vide determination of the Authority No. NEPRA/R/TRF-UTB-2013/5152-54, dated May 29, 2013. In this regard, IEL has already submitted an application for acceptance of the said upfront tariff. The Authority admitted the said application and through its determination No. NEPRA/TRF-387/IEL-2017/5819-5821, dated April 26, 2017 granted the upfront tariff to IEL. Notwithstanding the said, the Authority directs IEL to charge the power purchaser only such tariff which has been determined, approved or specified by it. In this regard, the Authority decides to include Article-6

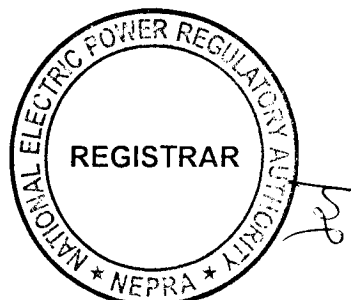


in the proposed generation licence and directs IEL to adhere to the provision of the said article of the generation licence in letter and spirit without any exception.

(vii). Regarding compliance with the environmental standards, as stated at Para-D(vii) above, IEL has provided the NOC from EPDGoPb and has confirmed that project will comply with the required standards during the term of the generation licence. In view of the importance of the issue, the Authority has decided to include a separate article (i.e. Article-10) in the generation licence along with other terms and conditions making it obligatory for IEL to comply with relevant environmental standards at all times. Further, the Authority directs IEL to submit a report on a bi-annual basis, confirming that operation of its generation facility/co-generation facility/power plant is in compliance with the required environmental standards as prescribed by the concerned environmental protection agency.

(viii). The proposed generation facility/co-generation facility/power plant of IEL will be using RE resource for generation of electric power. Therefore, the project may qualify for the carbon credits under the Kyoto Protocol. Under the said protocol, projects coming into operation up to the year 2020 can qualify for the carbon credits. IEL has informed that the project will achieve COD by November 30, 2018 which is within the deadline of the Kyoto Protocol. In view of the said, an article (i.e. Article-12) for carbon credits and its sharing with the power purchaser has been included in the generation licence. Foregoing in view, the Authority directs IEL to initiate the process in this regard at the earliest so that proceeds for the carbon credits are materialized. IEL will be required to share the proceeds of the carbon credits with the Power Purchaser as stipulated in Article-12 of the generation licence.

(ix). The Authority has observed that proposed generation facility/co-generation facility/power plant of IEL will be supplying to the power purchaser approximately 19.50 MW and 27.00 MW of clean electric power during crushing and off season respectively. In addition to supplying the national grid, IEL also plan to supply to ISML to the tune of 8.00 MW and 0.50 MW during crushing season and off season respectively. According to Section-2(ii) of the NEPRA Act, a Bulk Power Consumer (BPC) is consumer which purchases or receives electric power

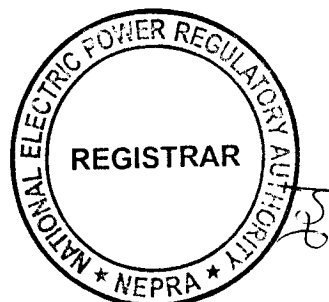


at one premises, in an amount of one megawatt or more or in such amount and voltage level and with such characteristics as the Authority may determine. In view of said, ISML qualifies as BPC under the NEPRA Act and accordingly the Authority declares ISML a BPC of IEL.

(x). Regarding supply to ISML, the Authority observes that both ISML and IEL are located within the same premises. Further, ISML will be supplied through two (02) underground cables/feeders of 11 KV voltage (measuring about 400-500 meters) not involving any public or third party property. Pursuant to proviso to Section-21 of the NEPRA Act, the Authority is empowered to allow a generation company to sell electric power to a BPC located in the service territory of a distribution company. In view of the said, the Authority allows the proposed arrangement to sell electricity to ISML. Further, under Section-2(v) of the NEPRA Act, ownership, operation, management and control of distribution facilities located on private property and used solely to move or deliver electric power to the person owning, operating, managing and controlling those facilities or to tenants thereof has not been included in the definition of "distribution". Based on the said considerations that the proposed BPC in the name of ISML is located within the same premises and no public area is involved, the supply of power to ISML by IEL does not constitute a distribution activity under the NEPRA Act, and IEL will not require a distribution licence for supplying to ISML.

~~to~~ (xi). Regarding the rates, charges and terms and conditions of tariff (between IEL and ISML), it is reiterated that under Section-7(3)(a) of the NEPRA Act, determining tariff, rate and charges etc. is the sole prerogative of the Authority. However, the Authority observes that tariff between IEL and its BPC (i.e. ISML), does not affect any other consumer or third party. Therefore for the purpose of tariff, the Authority considers it appropriate directing IEL and ISML to agree on a bilateral agreement and accordingly IEL will be allowed to charge the agreed tariff subsequent to the grant of the generation licence.

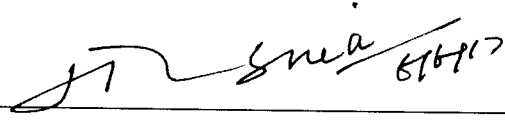
~~to~~ (xii). In view of the above, the Authority hereby approves the grant of generation licence to IEL on the terms and conditions set out in the generation licence annexed to this determination. The grant of generation licence will be



subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed thereunder and other applicable documents.

Authority:

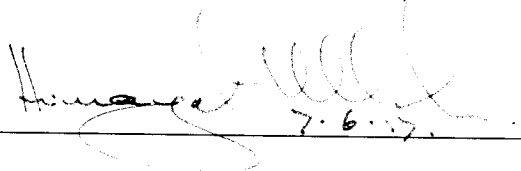
Maj. (R) Haroon Rashid
(Member)



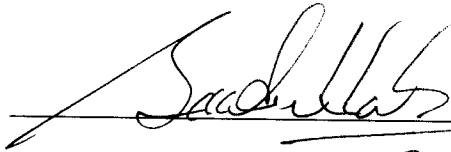
Syed Masood-ul-Hassan Naqvi
(Member)



Himayat Ullah Khan
(Member)



Saif Ullah Chattha
(Member/Vice Chairman)

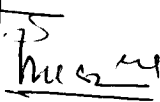


9.6.2017

Tariq Saddozai
(Chairman)

ON TOUR




13.06.17

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

GENERATION LICENCE

No. IGSP/86/2017

In exercise of the Powers conferred upon under Section-15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, the Authority hereby grants the Generation Licence to:

INDUS ENERGY LIMITED

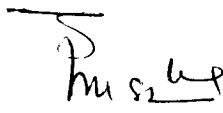
Incorporated Under Section-32 of the Companies Ordinance 1984 (XLVII of 1984) Having Corporate Universal Identification No. 0096891, dated December 28, 2015

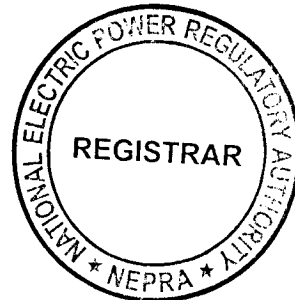
for its Bagasse based Generation Facility/Co-Generation Power Plant Located at Main Indus Highway, Kot Bahadur, Tehsil & District Rajan Pur, in the Province of Punjab

(Total Installed Capacity: 31.00 MW Gross ISO)

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

Given under my hand this on 13th day of June Two Thousand & Seventeen and expires on 29th day of November Two Thousand & Forty Eight.


13 06 17
Registrar





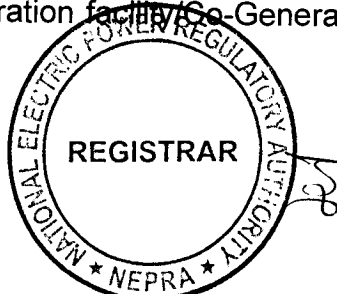
Article-1
Definitions

1.1 In this licence

- (a). "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 as amended or replaced from time to time;
- (b). "AEDB" means the Alternative Energy Development Board or any other entity created for the like purpose established by the GoP to facilitate, promote and encourage development of renewable energy in the country;
- (c). "Applicable Documents" mean the Act, the rules and regulations framed by the Authority under the Act, any documents or instruments issued or determinations made by the Authority under any of the foregoing or pursuant to the exercise of its powers under the Act, the Grid Code, the applicable Distribution Code, if any, or the documents or instruments made by the Licensee pursuant to its generation licence, in each case of a binding nature applicable to the Licensee or, where applicable, to its affiliates and to which the Licensee or any of its affiliates may be subject;
- (d). "Applicable Law" means the Act, relevant rules and regulations made there under and all the Applicable Documents;
- (e). "Authority" means the National Electric Power Regulatory Authority constituted under Section-3 of the Act;
- (f). "Bulk Power Consumer (BPC)" means a consumer which purchases or receives electric power, at one premises, in an amount of one (01) megawatt or more or in such other amount and voltage level and with such other characteristics as the Authority may determine and the Authority may determine different amounts and voltage levels and with such other characteristics for different areas;

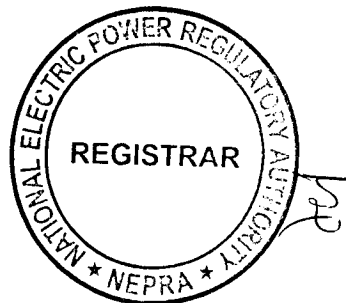


- (g). "Bus Bar" means a system of conductors in the generation facility/Co-Generation Facility/Power Plant of the Licensee on which the electric power from all the generators is collected for supplying to the Power Purchaser or BPC;
- (h). "Carbon Credits" mean the amount of Carbon Dioxide (CO₂) and other greenhouse gases not produced as a result of generation of energy by the generation facility/Co-Generation Facility/Power Plant and other environmental air quality credits and related emissions reduction credits or benefits (economic or otherwise) related to the generation of energy by the generation facility/Co-Generation Facility/Power Plant, which are available or can be obtained in relation to the generation facility/Co-Generation Facility/Power Plant after the COD;
- (i). "Co-Generation Facility/Power Plant" means the generation facility for simultaneous production of both electric power and heat or steam for industrial processes from a common fuel source;
- (j). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility/Co-Generation Facility/Power Plant of the Licensee is commissioned;
- (k). "CPPA-G" means Central Power Purchasing Agency (Guarantee) Limited or any other entity created for the like purpose;
- (l). "Distribution Code" means the distribution code prepared by the concerned XW-DISCO and approved by the Authority, as it may be revised from time to time with necessary approval of the Authority;
- (m). "Energy Purchase Agreement (EPA)" means the energy 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/Co-Generation Facility/Power Plant,



as may be amended by the parties thereto from time to time;

- (n). "Generation Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 as amended or replaced from time to time;
- (o). "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 by the Authority;
- (p). "GoP" means the Government of Pakistan acting through the AEDB which has issued or will be issuing to the Licensee a LoS for the design, engineering, construction, insuring, commissioning, operation and maintenance of the generation facility/Co-Generation Facility/Power Plant and has signed or will be signing an IA with the Licensee;
- (q). "IEC" means the International Electrotechnical Commission or its successors or permitted assigns;
- (r). "IEEE" means the Institute of Electrical and Electronics Engineers or its successors or permitted assigns;
- (s). "Implementation Agreement (IA)" means the implementation agreement signed or to be signed between the GoP and the Licensee in relation to this particular generation facility/Co-Generation Facility/Power Plant, as may be amended from time to time;
- (t). "Letter of Support (LoS)" means the letter of support issued or to be issued by the GoP through the AEDB to the Licensee;
- (u). "Licensee" means **Indus Energy Limited** or its successors or permitted assigns;

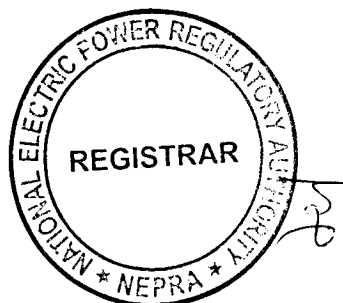


- (v). "Licensing Regulations" mean the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999 as amended or replaced from time to time;
- (w). "MEPCO" means Multan Electric Power Company Limited or its successors or permitted assigns;
- (x). "NTDC" means National Transmission and Despatch Company Limited or its successors or permitted assigns;
- (y). "Policy" means the Policy for Development of Renewable Energy for Power Generation, 2006 of GoP as amended from time to time;
- (z). "Power Purchaser" means CPPA-G which will be purchasing electric power from the Licensee either on behalf of all XW-DISCOs or any single XW-DISCO, pursuant to the EPA for procurement of electric power;
- (aa). "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 Applicable 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 functional specifications and other details specific to the generation facility/Co-Generation Facility/Power Plant of the Licensee are set out in Schedule-I of this licence.

3.2 The net capacity of the generation facility/Co-Generation Facility/Power Plant of the Licensee is set out in Schedule-II hereto. The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility/Co-Generation Facility/Power Plant before its COD.

Article-4
Term of Licence

4.1 This licence shall become effective from the date of its issuance and will have a term of thirty (30) years from the COD of the generation facility/Co-Generation Facility/Power Plant of the Licensee.

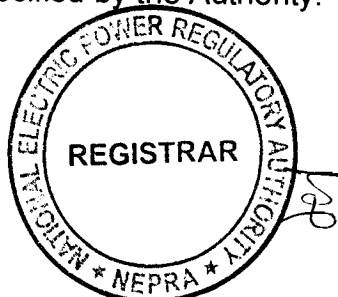
4.2 Unless suspended or revoked earlier, the Licensee may apply for renewal of this licence ninety (90) days prior to the expiry of the above term, as stipulated in the Licensing Regulations.

Article-5
Licence fee

The Licensee shall pay to the Authority the Licence fee as stipulated in the National Electric Power Regulatory Authority (Fees) Rules, 2002 as amended or replaced from time to time.

Article-6
Tariff

The Licensee shall charge the Power Purchaser 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.

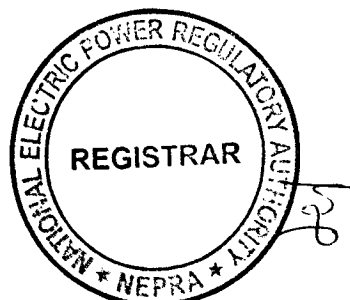
7.2 Any variation or modification in the above-mentioned contracts for allowing the parties thereto to participate wholly or partially in the Competitive Trading Arrangement shall be subject to mutual agreement of the parties thereto and such terms and conditions as may be approved by the Authority.

Article-8
Maintenance of Records

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

10.1 The generation facility/Co-Generation Facility/Power Plant of the Licensee shall comply with the environmental and safety standards as may be prescribed by the relevant competent authority 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/Co-Generation Facility/Power Plant is in conformity with required environmental standards as prescribed by the relevant competent authority.

Article-11
Provision of Information

In accordance with provisions of Section-44 of the Act, the Licensee shall be obligated to provide the required information in any form as desired by the Authority without any exception.

Article-12
Emissions Trading/Carbon Credits

The Licensee shall process and obtain expeditiously the Carbon Credits admissible to the generation facility/Co-Generation Facility/Power Plant. The Licensee shall share the said proceeds with the Power Purchaser as per the Policy.

Article-13
Power off take Point and Voltage

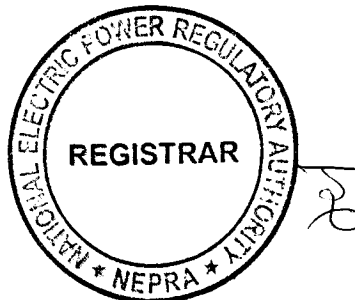
The Licensee shall deliver the electric power to the Power Purchaser at the outgoing Bus Bar of its generation facility/Co-Generation Facility/Power Plant. The Licensee shall be responsible for the up-gradation (step up) of generation voltage up to the required dispersal voltage level.



Article-14
Design & Manufacturing Standards

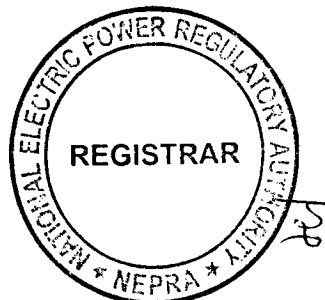
The generation facility/Co-Generation Facility/Power Plant of the Licensee shall be designed, manufactured and tested according to the latest IEC, IEEE or other equivalent standards. All the plant and equipment of the generation facility/Co-Generation Facility/Power Plant shall be unused and brand new.

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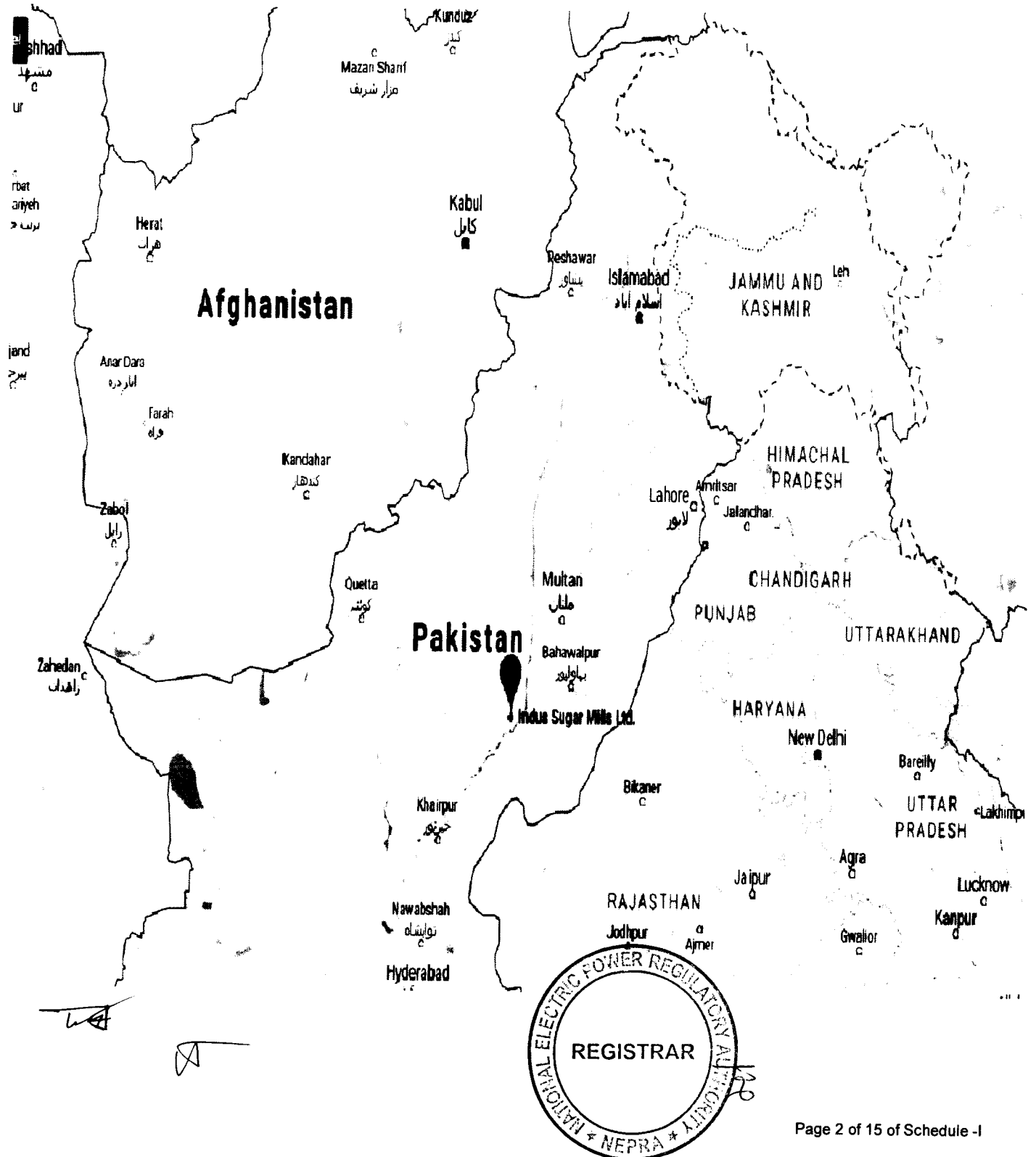


SCHEDULE-I

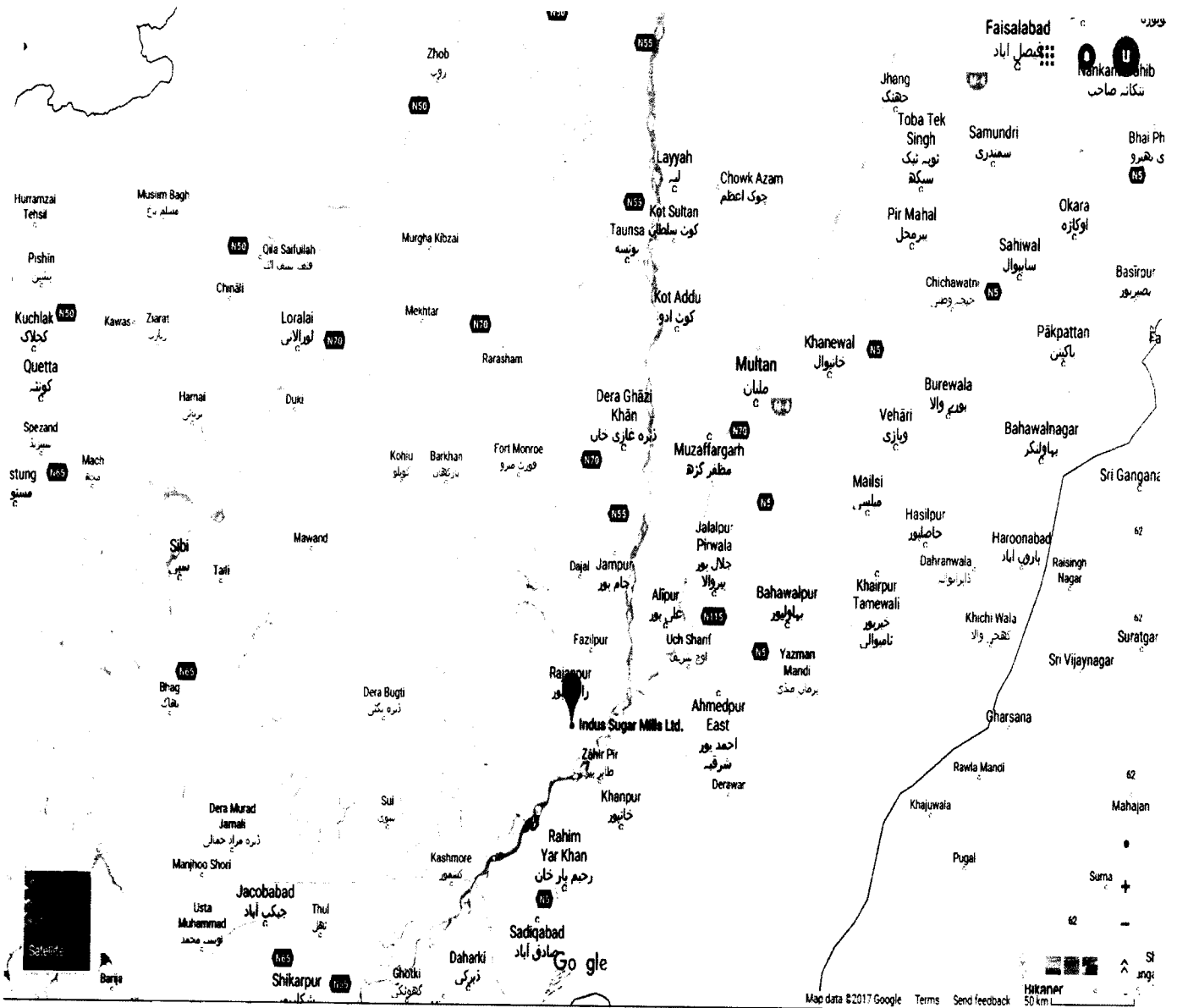
The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule.



**Location of the
Generation Facility/Co-Generation Facility/Power Plant
of the Licensee on Map of Pakistan**



**Location of the
Generation Facility/Co-Generation Facility/Power Plant
of the Licensee on Map of the Province of Punjab**



Land Coordinates
of the Co-Generation Facility/Thermal Power Plant of the
Company/Licensee

Latitude: 29.0186309
Longitude: 70.33332010000004

Rajanpur Tehsil, Pakistan

Get GPS Coordinates

DD (decimal degrees)*

Latitude

29.0186309

Longitude

70.33332010000004

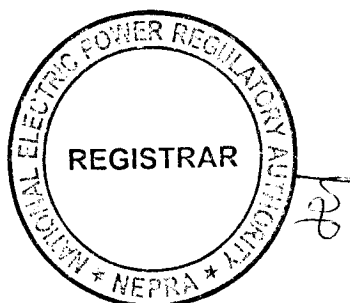
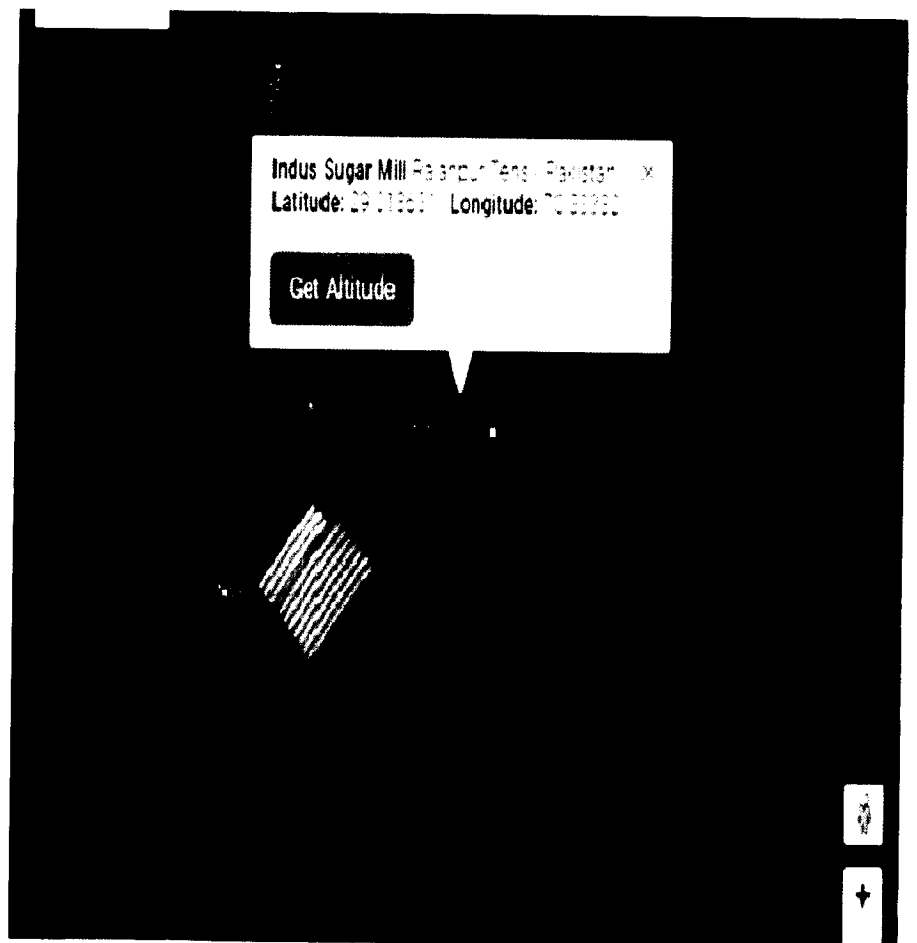
Get Address

Lat,Long

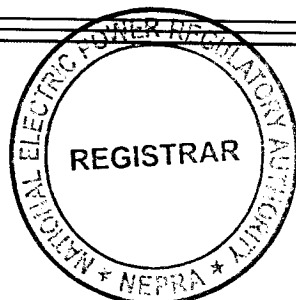
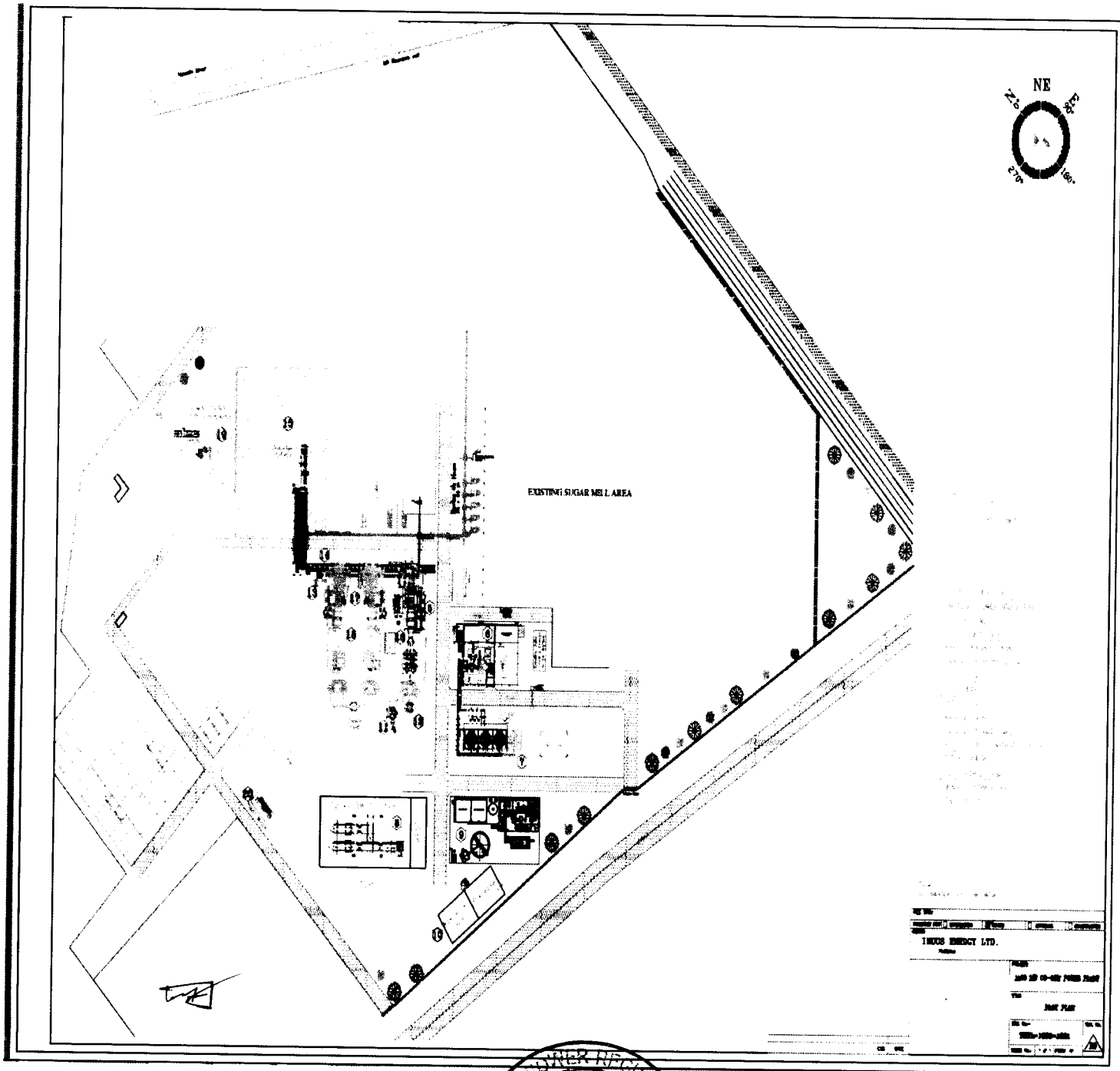
29.0186309,70.33332010000004

DMS (degrees, minutes, secondes)*

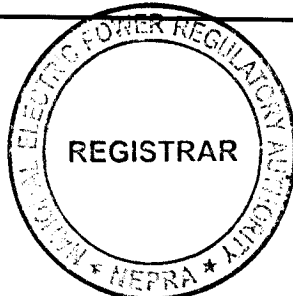
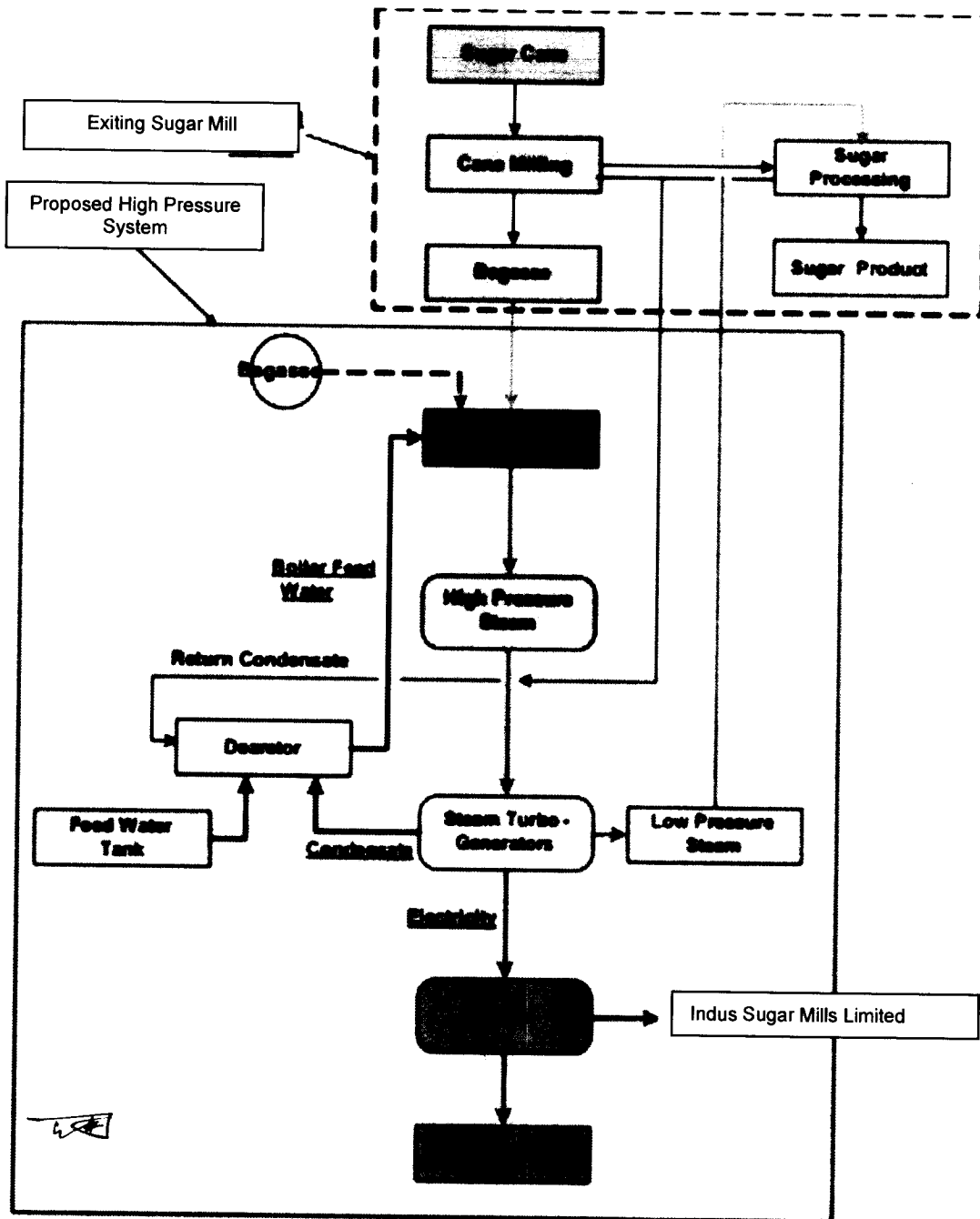
Latitude



Lay-out of the
Generation Facility/Co-Generation Facility/Power Plant
of the Licensee



**Process Diagram of the
 Generation Facility/Co-Generation Facility/Power Plant
 of the Licensee**



**Interconnection Arrangement for
Dispersal of Electric Energy/Power from the Generation
Facility/Co-Generation Facility/Power Plant**

The electric power from the Bagasse based Co-Generation Facility/Co-Generation Power Plant of Licensee will not only be supplied to a Bulk Power Consumer-BPC* (i.e. Indus Sugar Mills Limited-ISML as enumerated in this Schedule-I) but also to the load center of MEPCO.

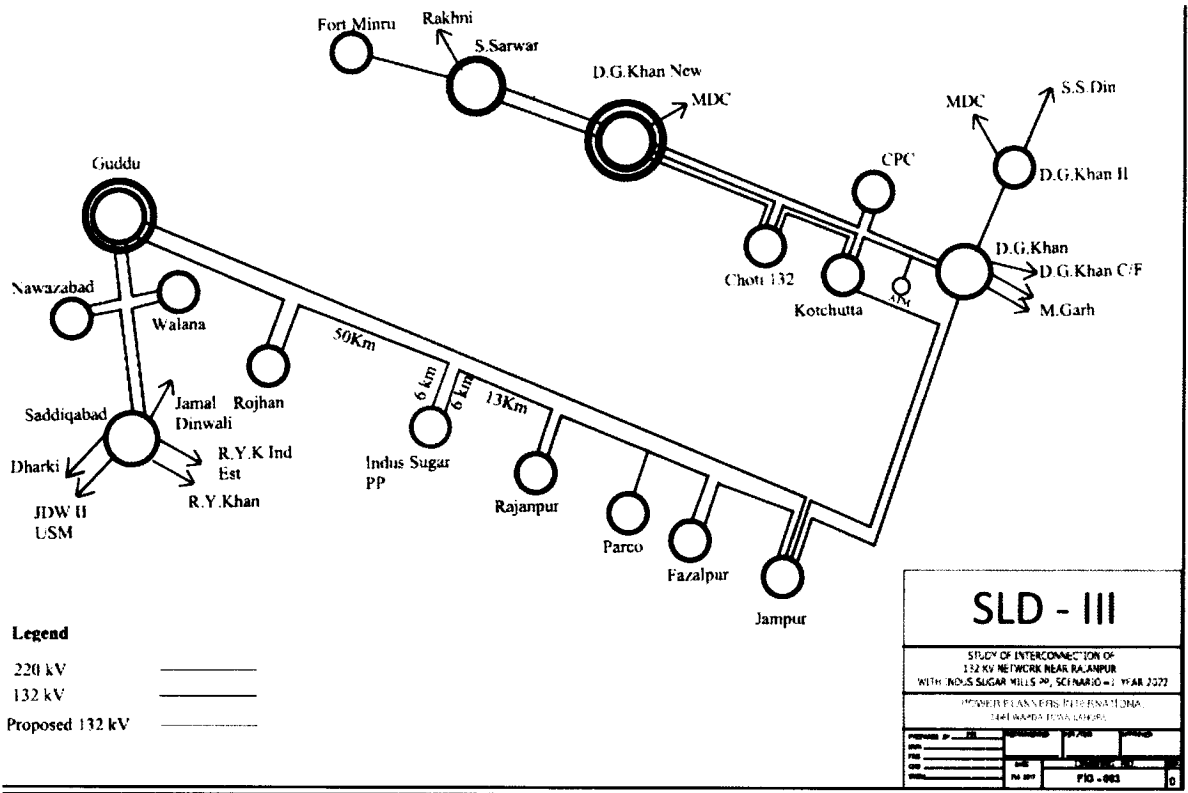
(2). The Interconnection Facilities (IF)/Transmission Arrangements (TA) for supplying to MEPCO from the above mentioned generation facility shall be at 132 KV level. The dispersal/interconnection arrangement will be consisting of a 132 KV Double Circuit (D/C) Transmission Line (on ACSR LYNX Conductor) measuring about six (6.00) Kilo-Meter for making an In-Out of the existing 132 KV Single Circuit-S/C Rojhan-Rajanpur Transmission Line connecting the generation facility/Co-Generation Facility/Power Plant with the network of MEPCO.

(3). The above IF/TA is based on the approval of MEPCO regarding the Grid Interconnection Study. Any change in the above mentioned IF/TA for dispersal of electric power as agreed by the Licensee, MEPCO or the Power Purchaser shall be communicated to the Authority in due course of time.



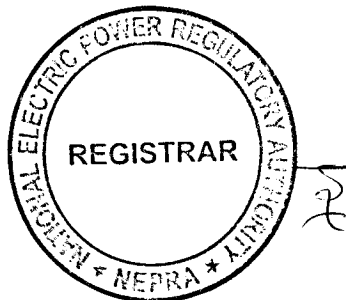
* The details of the pertaining to BPC, supply arrangement and other relating information is provided in the subsequent description of this Schedule-I.

Schematic Diagram for Dispersal of Electric Energy/Power from the Generation Facility/Co-Generation Facility/Power Plant



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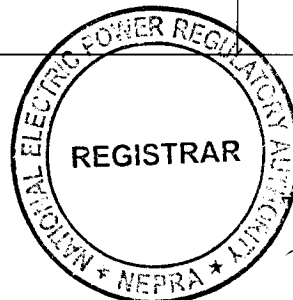
**Details of
 Generation Facility/Co-Generation Facility/
 Power Plant**

(A). General Information

(i).	Name of the Company/Licensee	Indus Energy Limited
(ii).	Registered Office of the Company	17- Tipu Block, New Garden Town, Lahore
(iii).	Business Address/ Office of the Company	-Do-
(iv).	Location of the Generation Facility	Main Indus Highway, Kot Bahadur, Tehsil & District Rajan Pur in the Province of Punjab
(v).	Type of the Generation Facility	Bagasse based, high-pressure generation facility/Co-Generation Facility/Thermal Power Plant.

(B). Configuration of Generation Facility

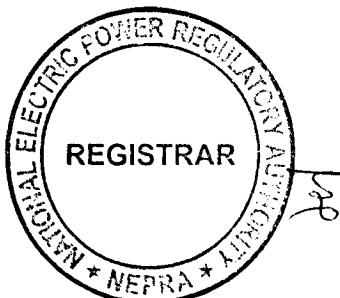
(i).	Installed Capacity/Size of the Generation Facility	31.00 MW	
(ii).	Type of the Technology of the Generation Facility	Conventional Steam Turbine based Power Plant [1 x 31.00 MW extraction cum condensing Steam Turbine and One (01) Travelling grate bagasse fired boiler Operating at 110 bar (kg/cm ²) and Producing 160-165 Tons of Steam Per Hour-TPH].	
(iii).	Number of Units & Size of Each Unit of the Generation Facility	Steam Turbine	1 x 31.00 MW



(iv).	Make/Model/Type/ Year of Manufacture Etc. of each Unit of the Generation Facility	Steam Turbine	Hangzhou Steam Turbine Co. Limited-HTC/ SKODA, SIEMENS or equivalent etc.
		Boiler	Travelling grate type Boiler 160-165 TPH Capacity and 110 bar(kg/cm ²) Wuxi Huaguang Boiler Co.,Ltd China. China Western Power Co. Ltd. China or equivalent etc
(v).	Expected/ Anticipated COD of the Generation Facility	November 30, 2018	
(vi).	Expected Useful Life of the Generation Facility from COD	30 Years (Minimum)	

(C). Fuel/Raw Material Details

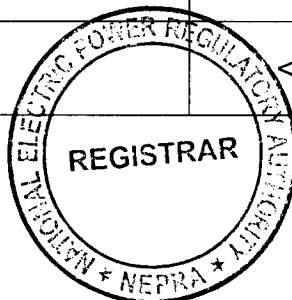
(i).	Primary Fuel	Bagasse	
(ii).	Alternate Fuel	Biomass (Rice Husk, Wheat Straw and Cotton Stalk etc.)	
(iii).	Fuel Source (Imported/Indigenous)	Primary Fuel	Alternate Fuel
		Indigenous	Indigenous
(iv).	Fuel Supplier	Primary Fuel	Alternate Fuel
		Indus Sugar Mills Limited- ISML(primary)/other Bagasse/Biomass suppliers (if available in the nearby area)	Biomass suppliers (if available in the nearby area of the Generation Facility)



(v).	Supply Arrangement	Primary Fuel	Alternate Fuel
		Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc.	Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc.
(vi).	Sugarcane Crushing Capacity	10,000 Ton per day	
(vii).	Bagasse Generation Capacity	2,900 Ton per day	
(viii).	Fuel Storage facilities	Primary Fuel	Alternate Fuel
		Bulk Storage	Bulk Storage
(ix).	Capacity of Storage facilities	Primary Fuel	Alternate Fuel
		100,000 Metric Tons bulk storage	Included as part of the Primary Fuel Storage
(x).	Gross Capacity Storage	Primary Fuel	Alternate Fuel
		100,000 Metric Tons bulk storage	Included as part of the Primary Fuel Storage

(D). Emission Values

		Primary Fuel	Alternate Fuel
(i).	SO _x	<264mg/Nm ³	<264mg/Nm ³
(ii).	NO _x	<100 mg/ Nm ³	<100 mg/ Nm ³
(iii).	CO ₂	11% -13%	11% -13%
(iv).	CO	<200mg/ Nm ³	<200mg/ Nm ³
(v).	PM ₁₀	<150mg/Nm ³	<150mg/Nm ³

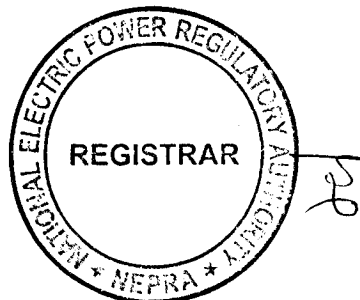


(E). Cooling System

(i).	Cooling Water Source/Cycle	RCC Cooling tower of induced draft counter flow type. Make up water will be drawn from the bore wells/Closed Loop.
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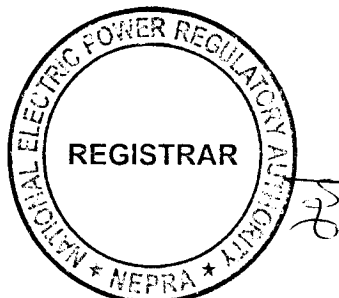
(F). Plant Characteristics

(i).	Generation Voltage	11.00 KV		
(ii).	Frequency	50 Hz		
(iii).	Power Factor	0.80 lagging - 0.95 leading		
(iv).	Automatic Generation Control (AGC)	Yes		
(v).	Ramping Rate	4 KW/Second		
(vi).	Time required to Synchronize to Grid	600 minutes	200 minutes	60 minutes
		During cold start (i.e. when plant is started later than 72 hours after shutdown)	During warm start (i.e. when plant is started at less than 36 hours after shutdown)	During Hot start (i.e. when plant is started at less than 12 hours after shutdown)



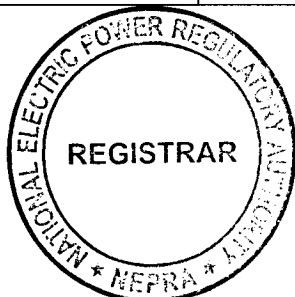
**Information Regarding
Distribution Network for Supply of Power to Bulk Power Consumer
[in the Name of Indus Sugar Mills Limited/ISML of the Licensee (i.e. Indus
Energy Limited-IEL)]**

(i).	No. of Feeders	02 (Two)	
(ii).	Length of Each Feeder (Meter)	400-500 Meter (Approximately)	
(iii).	Length of Each Feeder to each Consumer	400-500 Meter (Each Feeder to ISML)	
(iv).	In respect of all the Feeders, describe the property (streets, farms, Agri land, etc.) through, under or over which they pass right up to the premises of customer, whether they cross-over.	The 11 KV cables supplying power to ISML are located on private property owned by ISML, without crossing of any Public or third party Private Property etc.	
(v).	Whether owned by IEL, Consumer or MEPCO-(deal with each Feeder Separately)		
	(a).	If owned by MEPCO, particulars of contractual arrangement	N/A
	(b).	Operation and maintenance responsibility for each feeder	The Operation and Maintenance is the responsibility of ISML.
(vi).	Whether connection with network of MEPCO exists (whether active or not)- If yes, provide details of connection arrangements (both technical and contractual)	Yes/ISML is B-3 Consumer of MEPCO	
(vii).	Any other network information deemed relevant for disclosure to or consideration of the Authority.	N/A	



**Information Regarding
Distribution Network for Supply of Electric Power to Bulk Power Consumer-
BPC to be Supplied By the Licensee [(i.e. Indus Energy Limited-IEL)]**

(i).	No. of Consumers	One (01)	
(ii).	Location of consumers (distance and/or identity of premises)	Main Indus Highway, Kot Bahadur Tehsil & District Rajan Pur in the Province of Punjab	
(iii).	Contracted Capacity and Load Factor for consumer	During Crushing Season	During Off Crushing Season
		8.00 MW (Max)	0.50 MW (Max)
(iv).	Specify Whether		
	(a).	The consumer is an Associate undertaking of the IEL-If yes, specify percentage ownership of equity;	ISML and IEL associated companies of the same sponsors.
	(b).	There are common directorships:	Yes
	(c).	Either can exercise influence or control over the other.	Yes
(v).	Specify nature of contractual Relationship		
	(a).	Between each consumer and IEL.	ISML and IEL are companies of the same sponsors
	(b).	Consumer and MEPCO.	ISML is B-3 Consumer of MEPCO
(vi)	Any other network information deemed relevant for disclosure to or consideration of the Authority.	N/A	



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

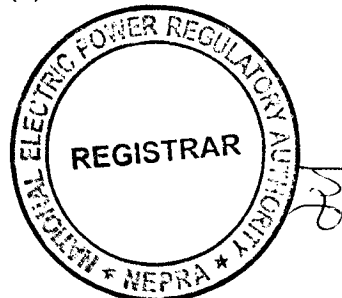


SCHEDULE-II

		<u>Season Operation</u>	<u>Off-Season Operation</u>
(1).	Total Gross Installed Capacity of the Generation Facility	31.00 MW	31.00 MW
(2).	De-rated Capacity of Generation Facility at Reference Site Conditions	31.00 MW	31.00 MW
(3).	Auxiliary Consumption of the Generation Facility	03.50 MW	03.50 MW
(4).	Average Electric Power Supplied to Bulk Power Consumer (i.e. Indus Sugar Mills Limited-ISML) from the Generation Facility at Reference Site Condition	08.00 MW	00.50 MW
(5).	Total Installed Net Capacity of Generation Facility at Reference Site Condition	19.50 MW	27.00 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 Energy Purchase Agreement/bi-lateral agreement or any other applicable document(s).



Authorization
by National Electric Power Regulatory Authority (NEPRA) to
Indus Energy Limited

Incorporated Under Section-32 of the Companies
Ordinance 1984 (XLVII of 1984) Having Corporate Universal Identification
No. 0096891, dated December 28, 2015

For
Sale to Bulk Power Consumer

Pursuant to Section-21 of the Act and Rule-7 of the NEPRA Licensing (Generation) Rules-2000, the Authority hereby authorize Indus Energy Limited-IEL (the Licensee) to engage in second-tier supply business, limited to the following consumers:-

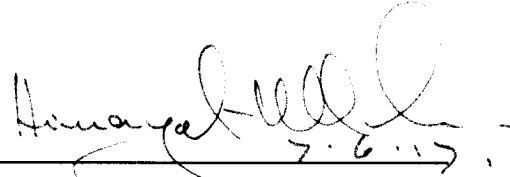
(a). Indus Sugar Mills Limited



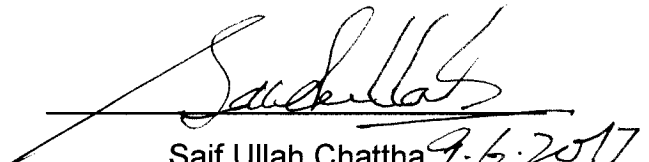
Maj. (R) Haroon Rashid
(Member)



Syed Masood Ul Hassan Naqvi
(Member)



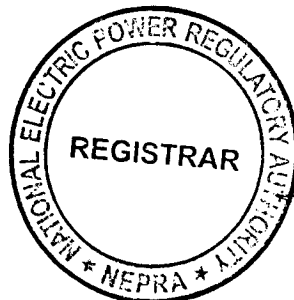
Himayat Ullah Khan
(Member)

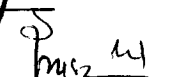

9.6.2017

Saif Ullah Chattha
(Member/Vice Chairman)

ON TOUR

Tariq Saddozai
(Chairman)




13.06.17