



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

Registrar

No. NEPRA/R/DL/LAG-283/6) 7 91-96

April 2, 2015

Mr. Farhan Javed
General Manager
Etihad Power Generation Limited
91-F, Model Town,
Lahore

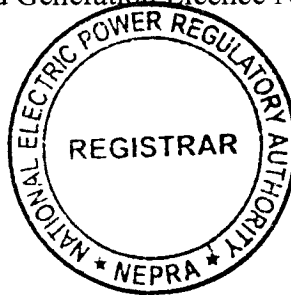
Subject: **Generation Licence No. IGSP/56/2015**
Licence Application No. LAG-283
Etihad Power Generation Limited

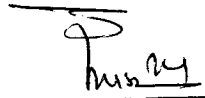
Reference: *Your letter No. nil, dated November 27, 2014.*

Enclosed please find herewith Determination of the Authority in the matter of Generation Licence Application of Etihad Power Generation Limited (EPGL) along with Generation Licence No. IGSP/56/2015 annexed to this determination granted by the National Electric Power Regulatory Authority to EPGL for its 74.40 MW Bagasse based co-generation facility located at Village Karamabad, Tehsil and District Rahim Yar Khan, 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/56/2015)




(Syed Safer Hussain)
02.04.15

Copy to:

1. Chief Executive Officer, Alternative Energy Development Board, 2nd Floor, OPF Building, G-5/2, Islamabad
2. Chief Executive Officer, NTDC, 414-WAPDA House, Lahore
3. Chief Operating Officer, CPPA, 107-WAPDA House, Lahore
4. Chief Executive Officer, Multan Electric Power Company, MEPCO Complex, WAPDA Colony, Khanewal Road, Multan
5. Director General, Environmental Protection Agency, Government of Punjab, National Hockey Stadium, Ferozpur Road, Lahore

National Electric Power Regulatory Authority
(NEPRA)

Determination of the Authority
in the Matter of Generation Licence Application of
Etihad Power Generation Limited

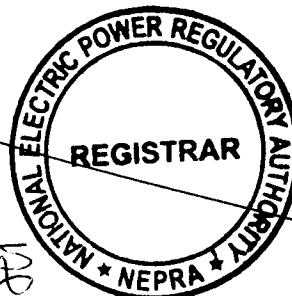
March 30, 2015
Case No. LAG-283

(A). Background

(i). Government of Pakistan (GoP) has set up the Alternative Energy Development Board (AEDB) for development of Renewable Energy (RE) resources in the Country. AEDB formulated "the Policy for Development of Renewable Energy for Power Generation 2006" (hereafter the RE Policy) for harnessing the available RE Potential.

(ii). Initially the scope of the RE Policy included development of small Hydro, Wind and Solar Technologies. Later on, the GoP amended the scope of the Policy to include Power Projects based on Bagasse, Biomass, Waste-to-Energy and Bio-Energy, using High-Pressure (minimum 60 bar) Boiler Technology. Further, GoP also extended the applicability of the Policy to be continued for an additional five years w.e.f. March 06, 2013. Further, in order to facilitate the development of Bagasse based Power Generation in the country, the Authority announced an Up-Front Tariff through its Determination No. NEPRA/R/TRF-UTB-2013/5152-5154, dated May 29, 2013 (the Up-Front Tariff). In view of the said, AEDB has issued Letter of Intent (LoI) to different Entrepreneurs/Developers.

(i). AEDB also granted Etihad Power Generation Limited (EPGL) a LoI for setting up a Co-Generation Power Plant/Generation Facility at village Karamabad, Tehsil and District Rahimyar Khan, in the Province of Punjab on Fast Track Basis. In accordance with the terms and conditions of the LoI, the sponsor company decided to approach the Authority for the grant of Generation Licence.



(B). Filing of Generation Licence Application

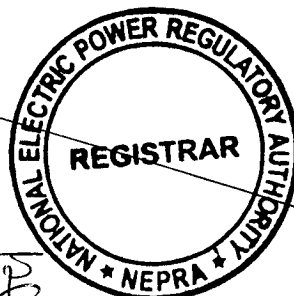
(i). In accordance with Section-15 of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the NEPRA Act), EPGL submitted an application on December 01, 2014 requesting for the grant of Generation Licence.

(ii). The Registrar examined the submitted application to confirm its compliance with the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "Regulations"). It was observed that some of required information/documentation was missing. Accordingly, Registrar directed EPGL for submitting the missing information/documentation. EPGL completed the missing information/documentation on December 08, 2014. Accordingly, the Authority admitted the application under Regulation-7 of the Regulations on January 01, 2015 for consideration of grant of a Generation Licence and approved the advertisement about the Notice of Admission (NoA) to be published in daily newspapers, seeking comments of the general public as stipulated in Regulation-8 of the Regulations. The Authority also approved the list of interested/affected parties for inviting comments or otherwise assisting the Authority in the matter as stipulated in Regulation-9 of the Regulations.

(iii). Accordingly, NoA was published in one Urdu and one English National Newspaper on January 03, 2015. Further, separate letters were also sent to Individual Experts, Government Ministries, attached Department and Representative Organizations etc. on January 06, 2015 for submitting their views/comments in the matter for the assistance of the Authority to arrive at an informed decision.

(C). Comments of Stakeholders

(i). In reply to the above, the Authority received comments from three (03) stakeholders. These included Central Power Purchasing Agency (CPPA) of National Transmission and Despatch Company Limited (NTDC), Ministry of

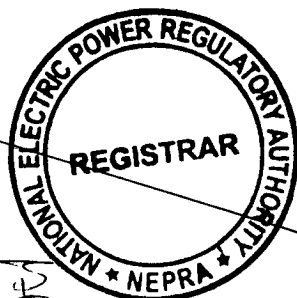


Petroleum & Natural Resources (MoP&NR) and Ministry of Water & Power (MoW&P).

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

- (a). CPPA appreciated the efforts of EPGL for setting up the co-generation facility. Further, CPPA elaborated that the project would be based on indigenous fuel (Bagasse) and would be generating power during non-gas and non-hydel periods. Therefore, the project would be beneficial to the consumers and the society. CPPA confirmed that it had no reservation for grant of Generation Licence to EPGL subject to meeting of all the conditions laid down in the NEPRA Licensing (Generation) Rules-2000 (the Rules);
- (b). MoP&NR remarked that EPGL intends to install Bagasse Fired Thermal Power Plant for which no gas is required. Therefore, this Ministry has no objections/comments for the grant of Generation Licence to EPGL; and
- (c). MoW&P commented that the Authority may process the request as per provisions of NEPRA Act and GoP guidelines while ensuring environment protection.

(iii). In view of the above mentioned favorable comments of stakeholders and confirmation of EPGL that necessary No Objection Certificate (NOC) had already been obtained from EPA, Govt. of Punjab (EPA Punjab), the Authority considered it appropriate to process the Generation Licence application of EPGL expeditiously as stipulated in the Regulations and Rules.

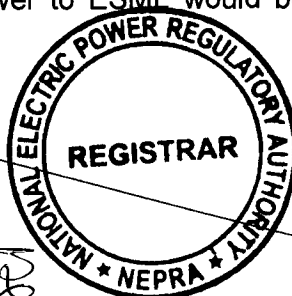


(D). Grant of Generation Licence

(i). Energy is fundamental input to economic activity, and thus to human welfare and progress. The importance of electricity in the development of the economy of any country is beyond any doubt. The Economic Growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of electricity.

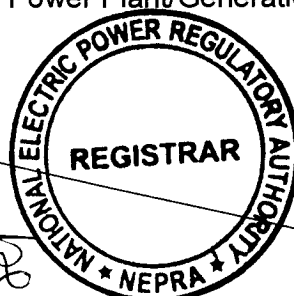
(ii). In view of the above, the Authority is of the considered opinion that for sustainable development all indigenous power generation resources including Coal, Hydel, Wind, Solar and other RE resources must be developed on priority basis in the public and private sector. The existing energy mix of the country is heavily skewed towards the costlier thermal power plants, mainly operating on imported furnace oil. The import of furnace oil for electric power generation not only causes depletion of 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.

(iii). The Energy Security Action Plan 2005 (ESAP) of GoP, also recognizes this very aspect of power generation through RE and envisages that at least 5% of total national power generation capacity to be met through RE resources by 2030. The Authority considers that the proposed project of EPGL is consistent with the provisions of ESAP. 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 furnace oil but will also help in reduction of carbon emission by generating clean electricity, thus improving the environment. EPGL is setting up a Co-Generation Power Plant/ Generation Facility at Mouza Karamabad, Tehsil & District Rahim Yar Khan, in the Province of Punjab. The said facility would be utilizing Bagasse/Biomass as the main fuel during the cane crushing season or till the time Bagasse/Biomass lasts. According to the provided information, EPGL would supply to Etihad Sugar Mills Limited (ESML) around 16.25 MW in the Crushing Season. Whereas, in the Off-Season the supply of electric power to ESML would be restricted to 1.00 MW.



Accordingly, EPGL during the Crushing Season would be supplying to NTDC around 50.775 MW whereas in the non-Crushing Season it would be providing around 66.55 MW. It is clarified that pursuant to provisions of Section-21 of the NEPRA Act, a Generation Company (like the instant case of EPGL) can make sale of electric power to Bulk Power Consumer (BPC) within the Exclusive Service Territory of a Distribution Company. Whereas, BPC is a consumer which purchases or receives electric power at one premise in an amount of 1.00 MW or more. As explained above, the load level for ESML is above the Minimum Level (1.00 MW), therefore for the purpose of supply of electric power, the Authority has considered ESML as a BPC of EPGL as stipulated in the NEPRA Act. As per Section 2(v) of the NEPRA Act, where the 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 is not included in the definition of "distribution". The distribution facilities [i.e. two (02) Underground XLPE 11-KV cables, measuring about 400 meters] to be used for delivery of electric power to ESML are located on private property (without involving any public property or any third party) will be owned, operated, managed and controlled by ESML. Therefore, the supply of electric power to ESML by EPGL does not constitute a distribution activity under the NEPRA Act and a Distribution Licence will not be required by ESML.

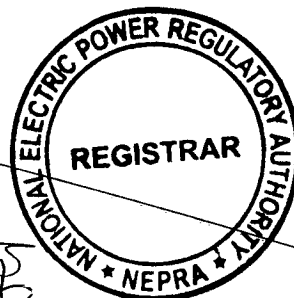
(iv). Under the Rule-5 (1) of the Rules, the Term of a Generation Licence is to be commensurate with the maximum expected useful life of the units comprised in a generating facility. According to the information provided by EPGL, the proposed Generation Facility would have a useful life of more than thirty (30) years from its Commercial Operation Date (COD). In this regard, EPGL has requested the Authority 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 CPPA. The Authority considers that information provided by EPGL about the useful life of the Steam Turbine and the subsequent request of EPGL to fix the term of the Generation Licence is rational. Therefore, the Authority sets the term of the Generation Licence to thirty (30) years from COD of the Co-Generation Power Plant/Generation Facility.



(v). Regarding the Tariff, it is clarified that in terms of Rule-6 of the Rules, for the provision of electric power, the Licensee is allowed to charge only such tariff as may be determined, approved or specified by the Authority. EPGL has confirmed that for supplying to the Power Purchaser it plans to accept the Up-front Tariff. However, pending the grant/approval of the Up-Front Tariff, the Authority directs EPGL to charge only such tariff as may be determined, approved or specified by the Authority, in terms of Rule 6 of the Rules without any exception. Regarding the matter of rates, charges, terms and conditions of tariff between EPGL and its BPC (i.e. ESML), the same will not affect any other consumer or third party. Therefore for the purpose of tariff for BPC, the Authority considers it appropriate directing EPGL and ESML agreeing to a bilateral agreement and submitting the same to it for approval and record. Accordingly, EPGL will then be allowed to charge the agreed tariff subsequent to the grant of the Generation Licence, in accordance with Rule-6(1)(b) of the Rules.

(vi). The proposed Co-Generation Power Plant/Generation Facility of EPGL would be using RE resource for Generation of Electric Power. Therefore, the project may qualify for the Carbon Credit under the Koyoto Protocol (for RE projects coming into operation upto 2020). In view of the said, the Authority directs EPGL to initiate the process in this regard at the earliest so that proceeds for the Carbon Credits are materialized. EPGL shall be required to share the proceeds of the Carbon Credits with the Power Purchaser as stipulated in Article-13 of its Generation Licence.

(vii). The proposed Co-Generation Power Plant/Generation Facility of EPGL for which Licence has been sought, is a Conventional Steam Turbine Power Plant using Bagasse/Biomass as fuel to be burned in the High Pressure Boiler(s). Bagasse is a RE source which does not cause any pollution. However, the operation of the Co-Generation Power Plant/Generation Facility may cause some other type of pollution including Soil Pollution, Water Pollution and Noise Pollution. The Authority has considered these aspects and has made EPGL obligatory to comply with the required rules and regulation on environment. Further, the Authority directs EPGL to submit a Quarterly/Bi-Annually report

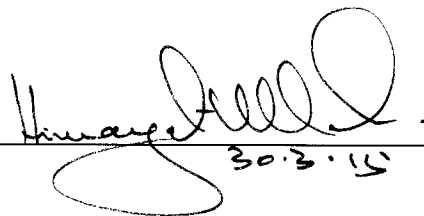


confirming that its operation is compliant with required Environmental Standards of the EPA Punjab.

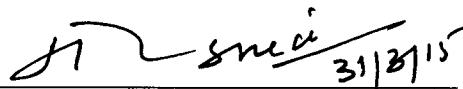
(viii). In view of the above, the Authority hereby decides to approve the grant of Generation Licence to EPGL on the terms set out in the Generation Licence annexed to this determination. The grant of Generation Licence will be subject to the provisions contained in the NEPRA Act, relevant rules and regulations framed there under including the Grid Code.

Authority

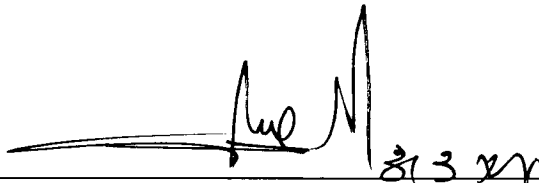
Himayat Ullah Khan
Member


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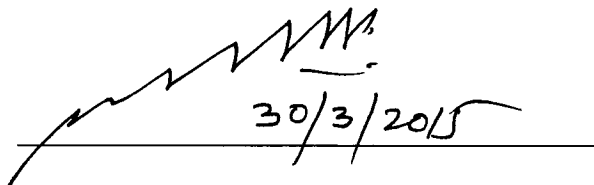
Maj. (R) Haroon Rashid
Member


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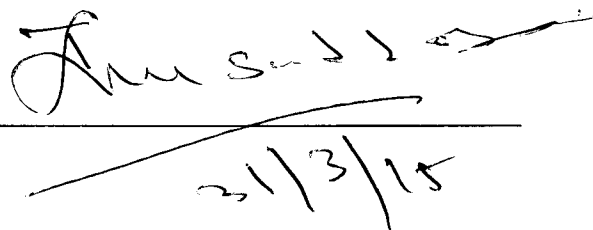
Khawaja Muhammad Naeem
Member

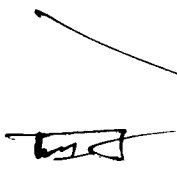

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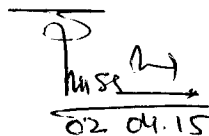
Habibullah Khilji
Member/Vice Chairman


30/3/2015

Brig. (R) Tariq Saddozai
Chairman


31/3/15




02.04.15



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

GENERATION LICENCE

No. IGSP/L/56/2015

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:

ETIHAD POWER GENERATION LIMITED

Incorporated under the Companies Ordinance, 1984
Under Corporate Universal Identification No. 0087957, dated April 21, 2014

**for its Bagasse based Co-Generation Power Plant/Generation Facility Located
at Village Karamabad, Tehsil and District Rahim Yar Khan
in the Province of Punjab**

(Installed Capacity: 74.40 MW Gross)

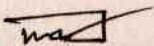
to engage in generation business subject to and in accordance with the Articles of this Licence.

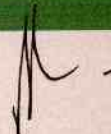
Given under my hand on this 02nd day of April Two Thousand & Fifteen and expires on 14th day of January Two Thousand & Forty Seven.



Registrar



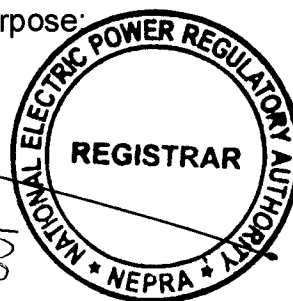




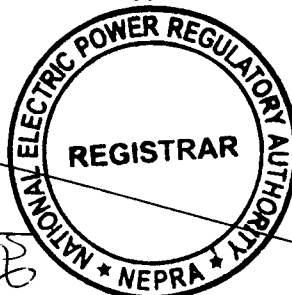
Article-1
Definitions

1.1 In this Licence

- (a). "Act" means "the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997";
- (b). "Authority" means "the National Electric Power Regulatory Authority constituted under Section-3 of the Act";
- (c). "Bulk Power Consumer" means a consumer who purchases or receives electric power at one premises, in an amount of one megawatt or more;
- (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). "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 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, which are available or can be obtained in relation to the generation facility after the COD;
- (f). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility of the Licensee is Commissioned;
- (g). "CPPA" means the Central Power Purchasing Agency of NTDC or any other entity created for the like purpose;



- (h). "Energy Purchase Agreement" 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, as may be amended by the parties thereto from time to time;
- (i). "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 any necessary approval by the Authority;
- (j). "IEC" means "the International Electro-technical Commission and its successors or permitted assigns;
- (k). "IEEE" means the Institute of Electrical and Electronics Engineers and its successors or permitted assigns;
- (l). "Licensee" means **Etihad Power Generation Limited** and its successors or permitted assigns;
- (m). "MEPCO" means Multan Electric Power Company Limited and its successors or permitted assigns;
- (n). "NTDC" means National Transmission and Despatch Company Limited and its successors or permitted assigns;
- (o). "Policy" means "the Policy for Development of Renewable Energy for Power Generation, 2006" of Government of Pakistan as amended from time to time;
- (p). "Power Purchaser" means NTDC (through CPPA) on behalf of XW-DISCOs or any XW-DISCO which purchases electricity from the Licensee, pursuant to an Energy Purchase Agreement for procurement of electricity;



- (q). "Power Purchase Agreement" means the power purchase agreement, entered or to be entered into by and between the BPC and the Licensee, for the sale and purchase of electric power generated by the generation facility of the Licensee, as may be amended by the parties thereto from time to time
- (r). "Rules" mean "the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000";
- (s). "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 in the Rules.

Article-2
Application of Rules

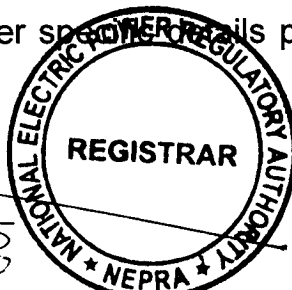
This Licence is issued subject to the provisions of the Rules, as amended from time to time.

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.

4.2 Unless suspended or revoked earlier, the Licensee may apply for renewal of this Licence under the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999 (as amended or replaced from time to time), within ninety days (90) days prior to the expiry of the term of this Licence.

Article-5
Licence fee

After the grant of the Generation Licence, the Licensee shall pay to the Authority the Licence fee, in the amount, 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 in terms of Rule-6 of the Rules.

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 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

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

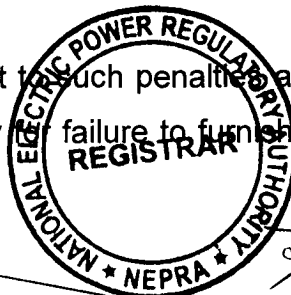
Article-11
Power off take Point and Voltage

The Licensee shall deliver electric power to the Power Purchaser at the outgoing Bus Bar of its generation facility. The up-gradation (step up) of generation voltage up to 132 KV will be the responsibility of the Licensee.

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



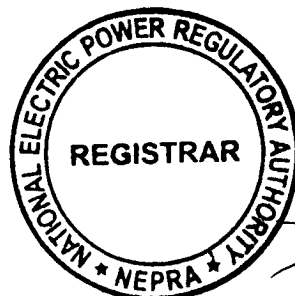
be required from time to time by the Authority and which is or ought to be or has been in the control or possession of the Licensee.

Article-13
Carbon Credits

The Licensee shall process and obtain Carbon Credits expeditiously and credit the proceeds of the same with the Power Purchaser and the BPC as stipulated in the Policy.

Article-14
Design & Manufacturing Standards

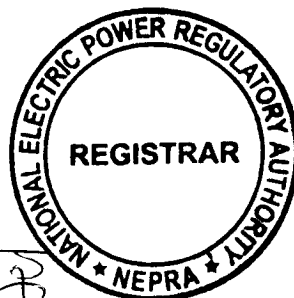
The generation facilities of the Licensee shall be designed, manufactured and tested according to the latest IEC standards or other equivalent standards. All plant and equipment shall be un-used/brand new and of relevant IEC/IEEE standard.

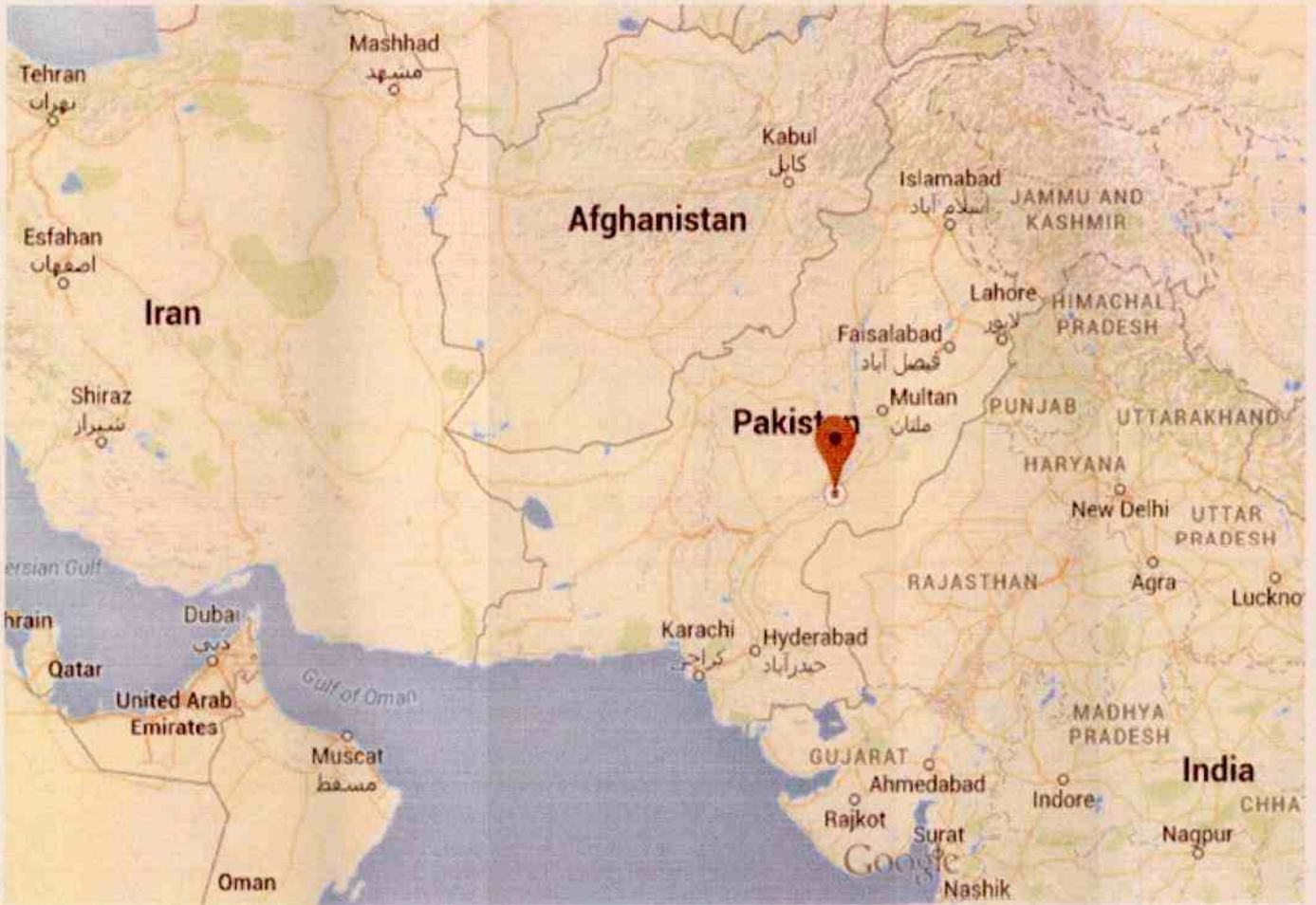


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SCHEDULE-I

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





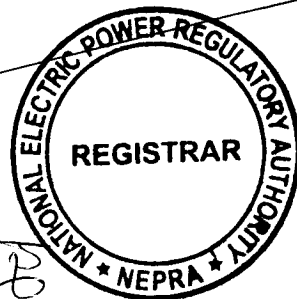
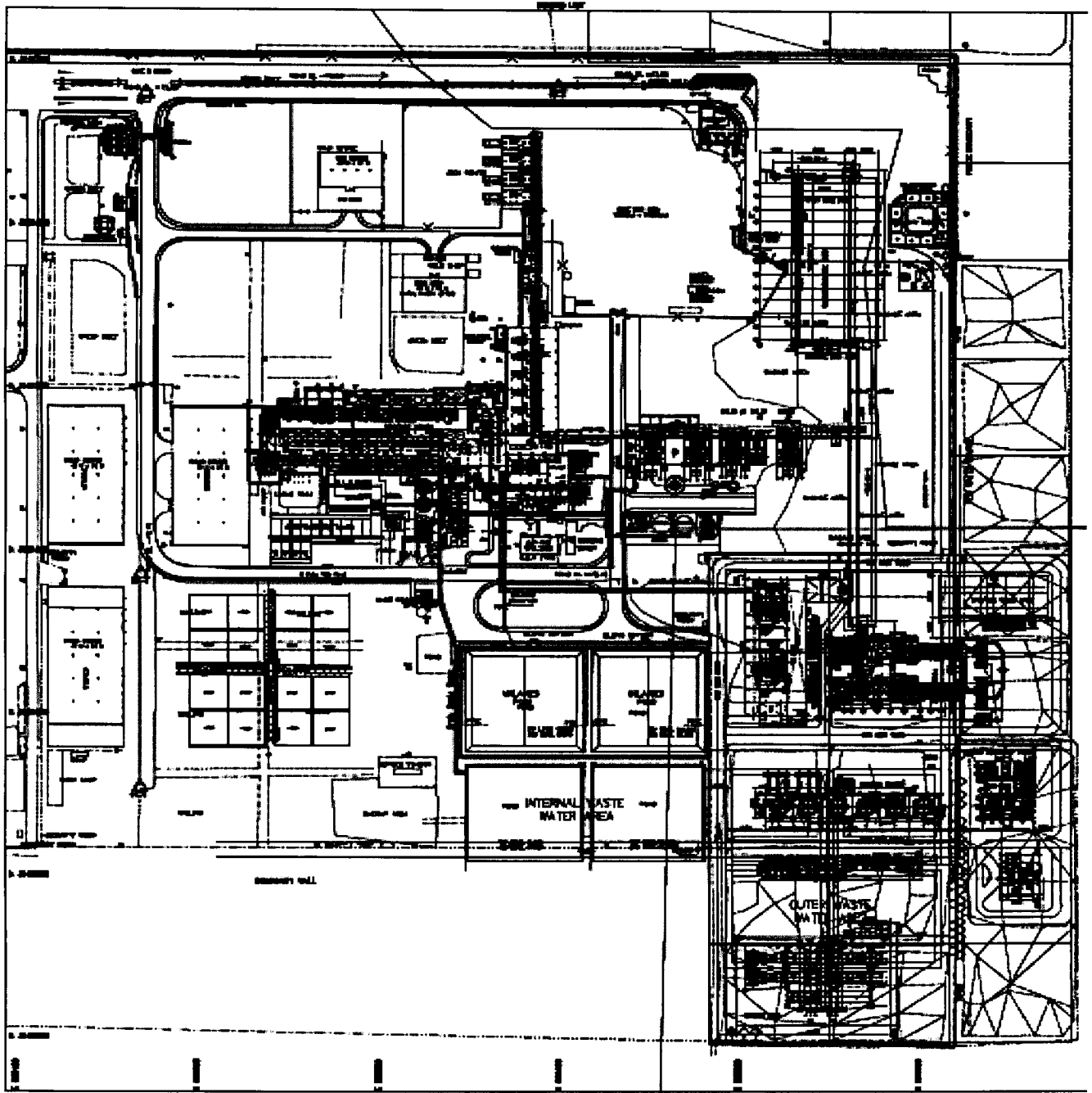
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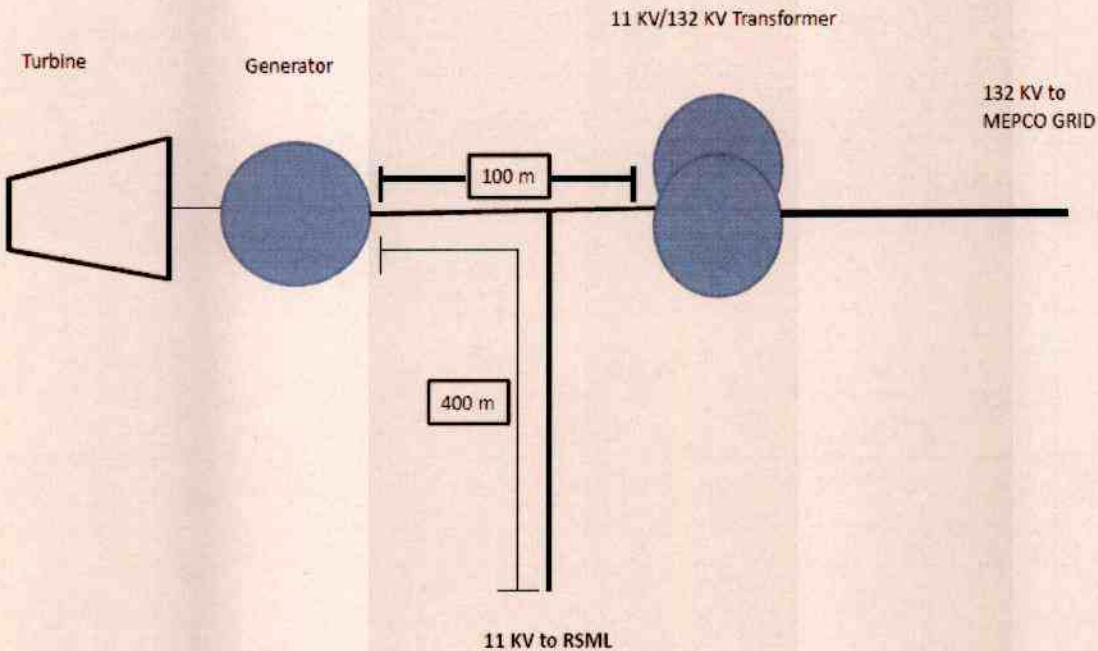


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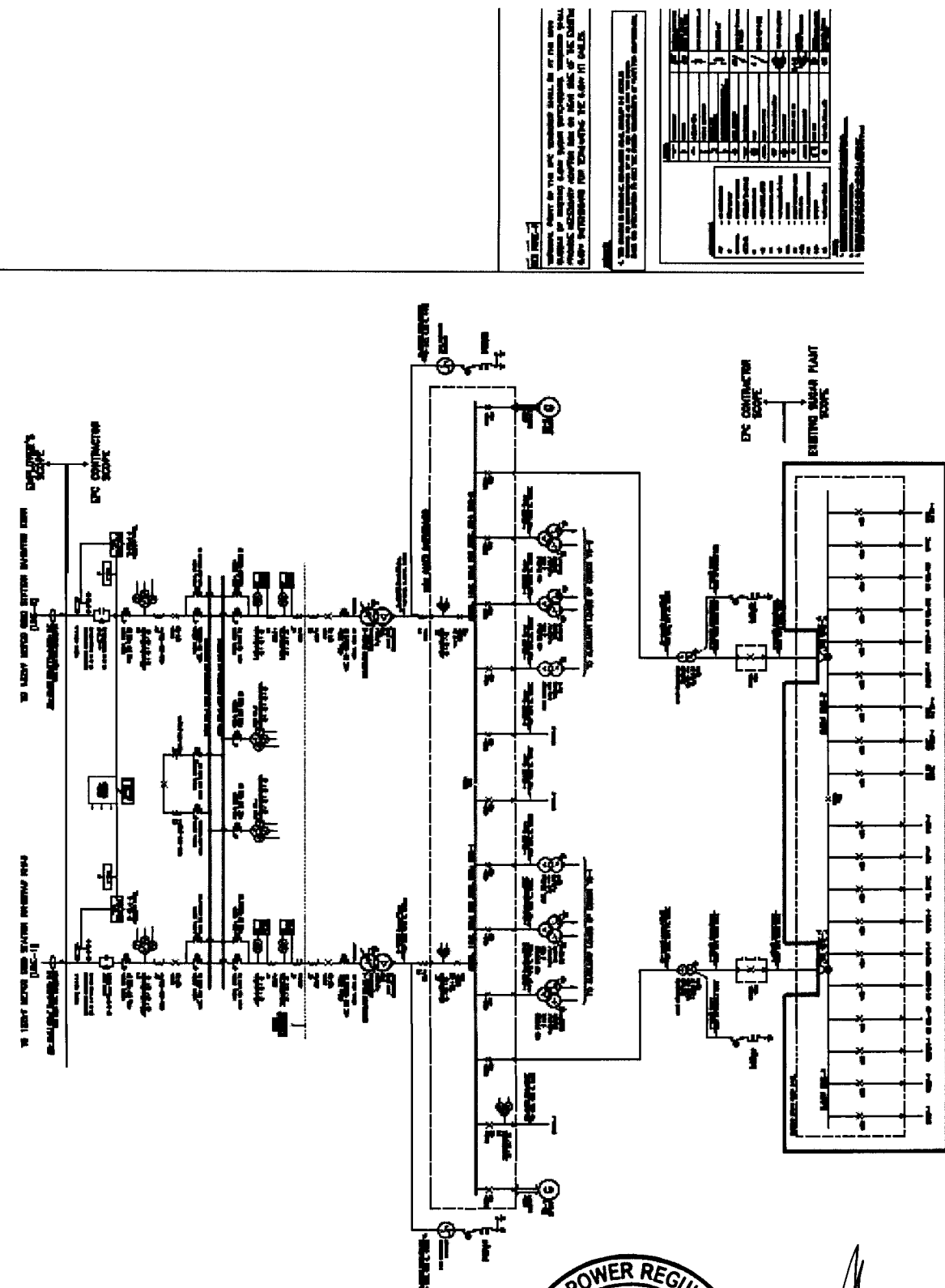


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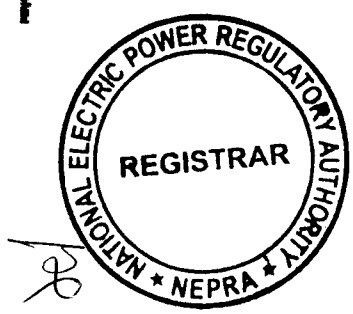


TO BE COMPLETED BY THE EPC CONTRACTOR

TO BE COMPLETED BY THE EPC CONTRACTOR

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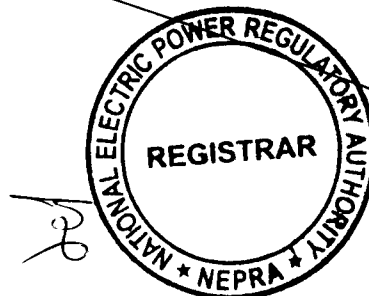
**Interconnection Facilities/
Transmission Arrangements for Dispersal of Power from
the Generation Facility/Co-Generation
Power Plant**

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

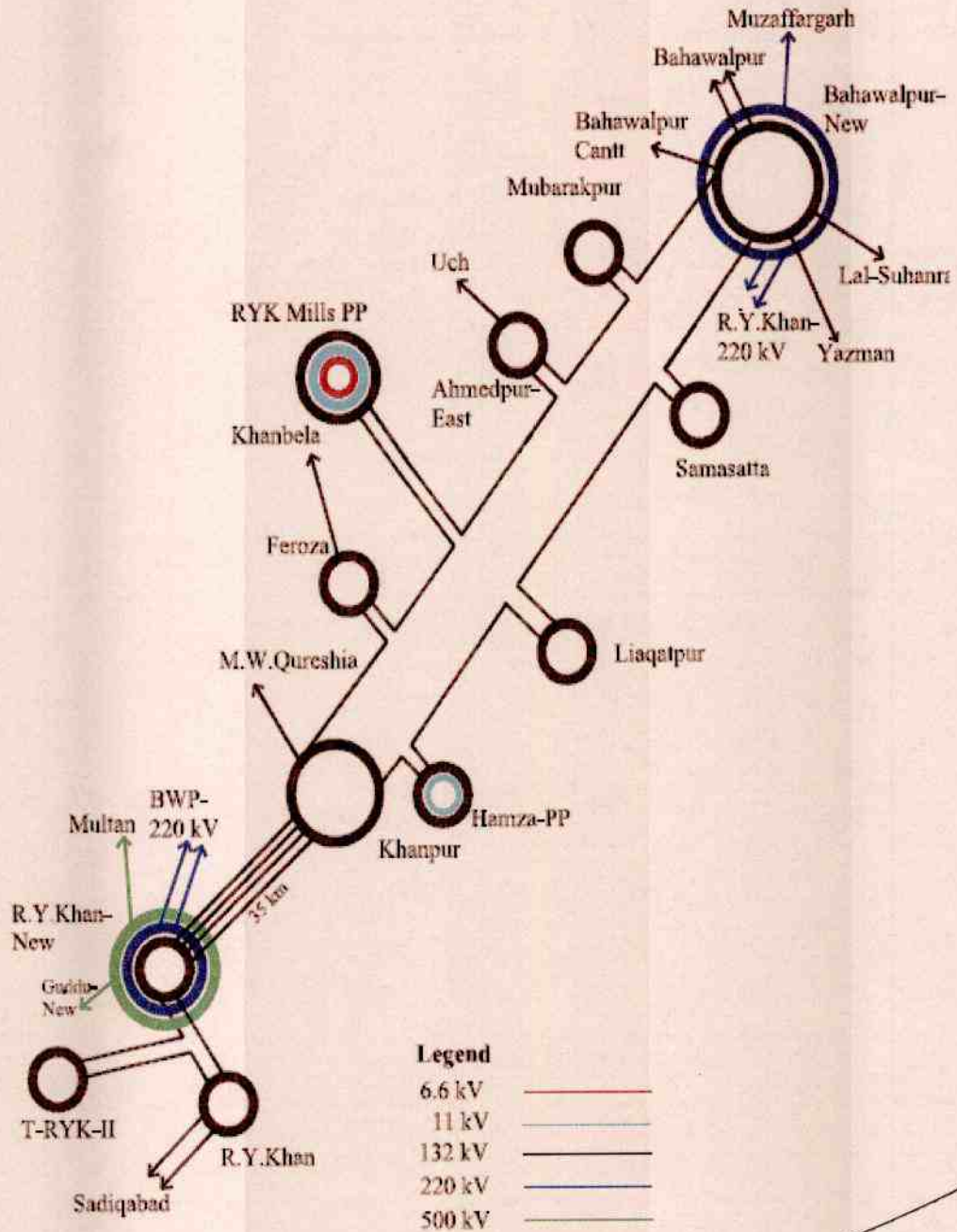
(2). The Interconnection Facilities (IF)/Transmission Arrangements (TA) for supplying to MEPCO from the above mentioned generation facility shall be at 132 kV level. The IF/TF will be consisting of a 132 KV Double Circuit (D/C) Transmission Line (on ACSR Rail Conductor) measuring about fifteen (15) Kilo Meter for making an In-Out of one Circuit of 132 KV Khanpur-New Rahim Yar Khan Transmission line connecting the Generation Facility/Co-Generation Power Plant.

(3). Any change in the above mentioned IF/TA for dispersal of electric power as agreed by the Licensee and the Power Purchaser shall be communicated to the Authority in due course of time.

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



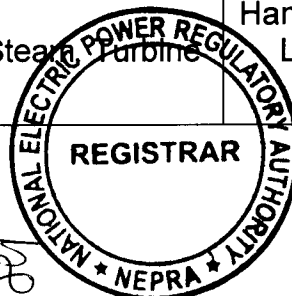
Detail of
Generation Facility/Co-Generation
Power Plant

(A). General Information

(i).	Name of the Company/Licensee	Etihad Power Generation Limited
(ii).	Head Office /Business Office	4-Bawa Park, Upper Mall , Lahore 91-F, Model Town, Lahore
(iii).	Location of the Generation Facility/Co-Generation Power Plant	Village Karamabad, Tehsil & District Rahim yar Khanin the Province of Punjab.
(iv).	Type of the Generation Facility/Co-Generation Power Plant	Bagasse based, High-Pressure Co-Generation Thermal Power Plant.

(B). Configuration of the Generation Facility

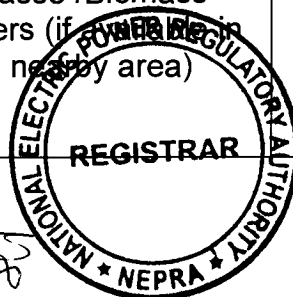
(i).	Size Installed Capacity of the Generation Facility/Co-Generation Power Plant	74.40 MW.	
(ii).	Type of Technology	Conventional Steam Turbine based Power Plant (with Extraction cum condensing Steam Turbine with 110 bar (kg/cm ²) boiler.	
(iii).	Number of Units/Size (MW)	Steam Turbine	2 x 37.20 MW
(iv).	Unit Make/Model/Type & Year of Manufacture Etc.	Steam Turbine	Hangzhou Steam Turbine Co. Limited (Model – EHNK 50/71)



		Boiler	Travelling grate type of Wuxi, China Boiler of 190 TPH Capacity and 110 Bar (kg/cm ²) pressure/Wuxi Huaguang Electric Power Engineering Co. Ltd
(v).	Expected/ Anticipated COD of the Generation Facility/Co-Generation Power Plant	January 15, 2017	
(vi).	Expected Useful Life of the Generation Facility/Co-Generation Power Plant from COD	30 Years (Minimum)	

(C). Fuel/Raw Material Details

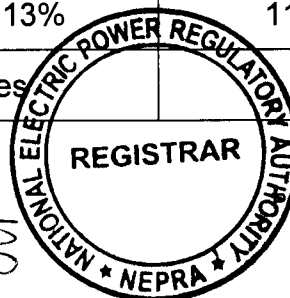
(i).	Primary Fuel	Bagasse	
(ii).	Alternate Fuel	Biomass (i.e. Corn Cobs and Cane Trash)	
(iii).	Fuel Source (Imported/ Indigenous)	Primary Fuel	Alternate Fuel
		Indigenous	Indigenous
(iv).	Fuel Supplier	Primary Fuel	Alternate Fuel
		Etihad Sugar Mills Limited- ESML(primary)/Other Bagasse /Biomass suppliers (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 ESML	of	12,500 Tons Crushing Per Day (Existing)/15,000 Ton Crushing Per Day (after extension in pipeline)		
(vii).	Bagasse Generation Capacity ESML	of	3875 Tons Per Day (as per Existing Capacity)/4650 Ton Per Day (after extension in pipeline)		
(viii).	Fuel Storage facilities	Primary Fuel		Alternate Fuel	
		Bulk Storage		Bulk Storage	
(ix).	Capacity of Storage facilities	Primary Fuel		Alternate Fuel	
		46,500 Metric Tons bulk storage		Included as part of the Primary Fuel Storage	
(x).	Gross Storage Capacity	Primary Fuel		Alternate Fuel	
		46,500 Metric Tons Bulk Storage		Included as part of the Primary Fuel Storage	

(D). **Emission Values**

		Primary Fuel	Alternative Fuel
(i).	SO _x	361.9 kg/hour	361.9 kg/hour
(ii).	NO _x	<80 p.p.m.	<80 p.p.m.
(iii).	CO ₂	11% to 13%	11% to 13%
(iv).	CO	Traces	Traces



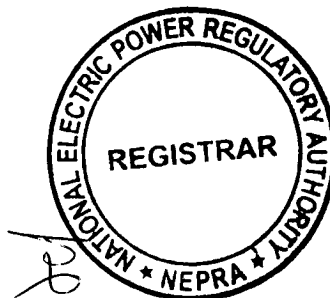
(v).	PM ₁₀	50 mg /n.cu.m	50 mg /n.cu.m
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(E). Cooling System

(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

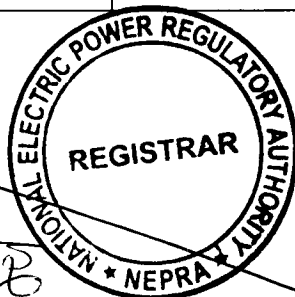
(i).	Generation Voltage	11.00 KV		
(ii).	Frequency	50 Hz		
(iii).	Power Factor	0.80 lagging - 0.95 leading		
(iv).	Automatic Generation Control (AGC)	Yes		
(v).	Ramping Rate	To be Provided Later		
(vi).	Time required to Synchronize to Grid	370 Minutes	260 Minutes	90 Minutes
		During cold start (i.e. when plant is started later than 72 hours after shutdown)	During warm start (i.e. when plant is started at less 36 hours after shutdown)	During Hot start (i.e. when plant is started at less than 12 hours after shutdown)



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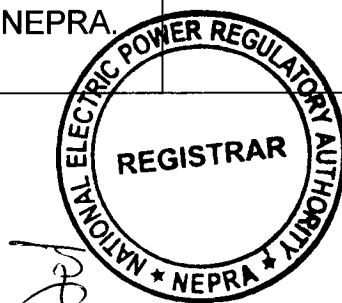
**Information Regarding
Distribution Network for Supply of Power to Bulk Power Consumer-BPC
[in the Name of Etihad Sugar Mills Limited/ESML of the Licensee (i.e. Etihad
Power Generation Limited-EPGL)]**

(i).	No. of Feeders	02 (Two)
(ii).	Length of Each Feeder (Meter)	400 Meter (each)
(iii).	Length of Each Feeder to each Consumer	400 Meter (both Feeder to ESML)
(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 cable supplying power to ESML is located on private property owned by ESML, without crossing of any Public or third party Private Property etc.
(v).	Whether owned by EPGL, Consumer or MEPCO-(deal with each Feeder Separately)	
	(a). If owned by MEPCO, please furnish particulars of contractual arrangement	N/A
	(b). Operation and maintenance responsibility for each feeder	The Operation and Maintenance is the responsibility of ESML.
(vi).	Whether connection with network of MEPCO exists (whether active or not)- If yes, provide details of connection arrangements (both technical and contractual)	Yes/ESML is B-2(b) Consumer of MEPCO
(vii).	Any other network information deemed relevant for disclosure to or consideration by NEPRA.	N/A



Information Pertaining to the Bulk Power Consumer -BPC
[in the name ESML of the Licensee (i.e. EPGL)]

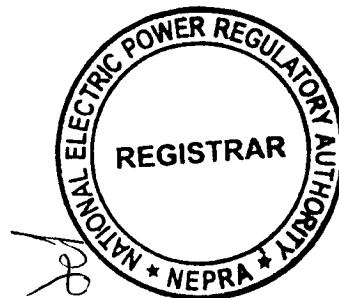
(i).	No. of Consumers	One (01)	
(ii).	Location of consumers (distance and/or identity of premises)	Village Karamabad, Tehsil & District Rahim Yar Khan in the Province of Punjab	
(iii).	Contracted Capacity and Load Factor for consumer	During Crushing Season	During Off Crushing Season
		16.250 MW	01.00 MW
(iv).	Specify Whether		
	(i)	The consumer is an Associate undertaking of the EPGL-If yes, specify percentage ownership of equity;	ESML and EPGL are group companies of the Etihad Group
	(ii)	There are common directorships:	No
	(iii)	Either can exercise influence or control over the other.	No
(v).	Specify nature of contractual Relationship		
	(i)	Between Consumer and EPGL.	ESML and EPGL are group companies of the Etihad Group/ Supply of Electricity on Continuous basis
	(ii)	Between Consumer and MEPCO.	ESML is B-2(b) Consumer of MEPCO
(vi)	Any other network information deemed relevant for disclosure to or consideration by NEPRA.	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 is given in this Schedule







SCHEDULE-II

		<u>During Crushing Season Operation</u>	<u>During Off Crushing Season Operation</u>
(1).	Total Gross Installed Capacity of the Generation Facility	74.40 MW	74.40 MW
(2).	De-rated Capacity of Generation Facility at Reference Site Conditions	74.0 MW	74.40 MW
(3).	Auxiliary Consumption of the Generation Facility	6.975 MW	6.850 MW
(4).	Total Installed Net Capacity of Generation Facility at Reference Site Condition	67.025 MW	67.55 MW

Note

All the above figures are indicative as provided by the Licensee. The Net Energy/Capacity available to Power Purchaser or Bulk Power Consumer for dispatch will be determined through procedure(s) contained in the Energy/Power Purchase Agreement(s), any Bi-lateral Agreement(s) or any other applicable document(s).

