



**National Electric Power Regulatory Authority**  
**Islamic Republic of Pakistan**

**Registrar**

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad  
Ph: +92-51-9206500, Fax: +92-51-2600026  
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/R/DL/LAG-289/ 8997-9002

June 10, 2015

Mr. Su Guanglei  
Authorized Representative  
CMEC Power (Pvt.) Limited  
House No. 8, Street No. 41,  
Sector F-7/1, Islamabad

Subject: **Generation Licence No. IGSPL/59/2015**  
**Licence Application No. LAG-289**  
**CMEC Power (Pvt.) Limited**

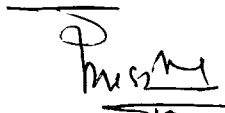
Reference: *Your letter No. PDKPP-3, dated January 26, 2015.*

Enclosed please find herewith Determination of the Authority in the matter of Generation Licence Application of CMEC Power (Pvt.) Limited (CMECPPL) along with Generation Licence No. IGSPL/59/2015 annexed to this determination granted by the National Electric Power Regulatory Authority to CMECPPL for its 330.00 MW indigenous coal based thermal generation facility located at Salt Range, Pind Dadan Khan, District Jhelum, 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**  
**(IGSPL/59/2015)**



  
10.06.15  
(Syed Safer Hussain)

Copy to:

1. Managing Director, Private Power & Infrastructure Board, 50-Nazimduddin Road, F-7/4, Islamabad
2. Chief Executive Officer, NTDC, 414-WAPDA House, Lahore
3. Chief Executive Officer, CPPA-G, 6<sup>th</sup> Floor, Shaheed-e-Millat Secretariat, Jinnah Avenue, Blue Area, Islamabad
4. Chief Executive Officer, Islamabad Electric Supply Company, Street No. 40, Sector G-7/4, Islamabad
5. Director General, Environmental Protection Department, National Hockey Stadium, Ferozpur Road, Lahore

**National Electric Power Regulatory Authority**  
**(NEPRA)**

**Determination of the Authority** *CS*  
**in the Matter of Application of CMEC Power (Private) Limited**  
**for the Grant of Generation Licence**

**June 09, 2015**  
**Case No. LAG-289**

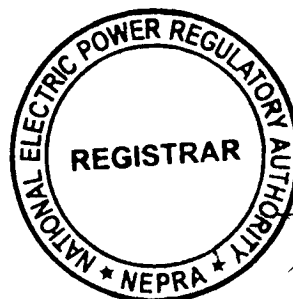
**(A). Background**

(i). In order to attract private investment in the Power Sector of the country, the Government of Pakistan (GoP) has set up Private Power Infrastructure Board (PPIB) as one window facilitator for the interested entrepreneurs.

(ii). In order to meet the future electricity/energy needs of the country and to improve the energy mix, the GoP has decided to install huge Generation Facilities/Thermal Power Plants operating on either imported or indigenous Coal. In this regard, PPIB on the recommendations of the Govt. of Punjab (GoPb) issued a Letter of Intent (LoI) to China Machinery Engineering Corporation (CMEC) for setting up 300.00 MW Mine Mouth Generation Facility/Coal Power Plant/the Project using indigenous Coal of the Salt Range at Pind Dadan Khan, District Jhelum, in the Province of Punjab. In order to set up the Generation Facility/Coal Power Plant, the sponsors decided incorporating a Special Purpose Vehicle (SPV) in the name of CMEC Power (Private) Limited (CMECPPL).

*CS*

(iii). In accordance with terms and conditions as stipulated in the LoI, the sponsors of the Project decided to approach the Authority for the grant of the Generation Licence and determination of its Tariff.

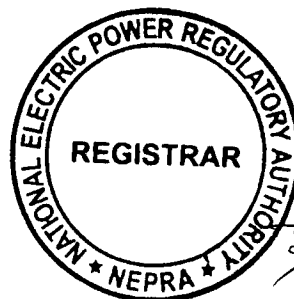


**(B). Filing of Generation Licence Application**

(i). In accordance with Section-15 of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the NEPRA Act), CMEC submitted an application on January 27, 2015 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"). The Registrar observed that the application lacked some of required information/documentation. Accordingly, CMEC was directed for submitting the missing information/documentation. CMEC completed the missing information/documentation on February 06, 2015. The Authority considered the matter in its Regulatory Meeting (RM-15-163), held on February 26, 2015 and found the form and content of the application in substantial compliance with Regulation-3 of the Regulations. Accordingly, the Authority admitted the application for consideration of the grant of the Generation Licence as stipulated in Regulation-7 of the Regulations.

(iii). The Authority observed that the SPV for the Project for which the Generation Licence was being requested was still in the process of incorporation with Securities and Exchange Commission of Pakistan (SECP) and the sponsors had not provided its certificate of incorporation in this regard. Further, the Authority noted that the Project is being implemented as a priority initiative under the Agreement on the China-Pakistan Economic Corridor Energy Project Cooperation between the Government of People's Republic of China and the Islamic Republic of Pakistan.



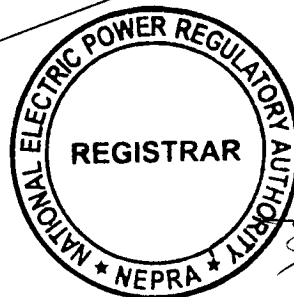
(iv). In consideration of the above and to save the processing time, the Authority decided to proceed further in the matter directing the sponsors for submitting the Certificate of Incorporation of the SPV during the processing of the application. The Authority approved the advertisement [containing (a). the prospectus; and (b). a notice to the general public about the admission of the application of CMEC/CMECPPL], inviting the general public for submitting their comments in the matter as stipulated in Regulation-8 of the Regulations. The Authority also approved the list of relevant stakeholders for providing their comments or otherwise to assist the Authority in the consideration of the above mentioned application of CMEC. Accordingly, the advertisement was published in one Urdu and one English National Newspaper on March 03-04, 2015.

(v). Apart from the above, separate letters were also sent to Government Ministries, their Attached Departments, Representative Organizations and Individual Experts etc. on March 04, 2015. The said stakeholders were directed to submit their views/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 Pakistan Mineral Development Corporation (Pvt.) Limited (PMDCPL), Ministry of Petroleum and Natural Resources (MoP&NR) and Punjab Mineral Development Corporation (PbMDC). The salient points of the comments offered by the above stakeholders are summarized in the following paragraphs: -

(a). PMDCPL appreciated the proposal of CMEC as this will help to overcome the energy crisis in the country;



(b). MoP&NR expressed that the project does not require any allocation of Natural Gas therefore, it has no objection to grant of Generation Licence;

(c). PbMDC expressed no objection to the request of CMEC for the grant of Generation Licence.

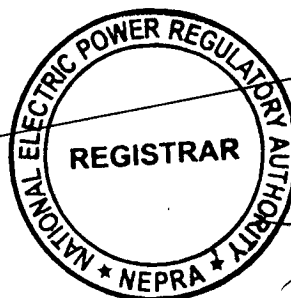
(ii). The Authority considered the above comments of the stakeholders and found the same in favor of the grant of Generation Licence. In view of the said, the Authority considered it appropriate to process the application of CMEC for the consideration of the grant of Generation Licence as stipulated in the Regulations and NEPRA Licensing (Generation) Rules, 2000 (the Rules).

(iii). In the meantime, the sponsors also provided the Certificate of Incorporation of the project company i.e. CMECPPL (Incorporated under Section-32 of the Companies Ordinance 1984 issued by SECP). With the said, the sponsors completed the requirement of Section-24 of the NEPRA Act thereby paving the way for the grant of Generation Licence subject to fulfillment of other requirement as stipulated in the relevant rules and regulations.

**(D). Grant of Generation Licence**

(i). Electricity is a key infrastructural element for economic growth. The electricity consumption per capita has a strong correlation to the Social Development indices (Human Development Index, life expectancy at birth, infant mortality rate and maternal mortality) and Economic Indices (such as GDP per capita).

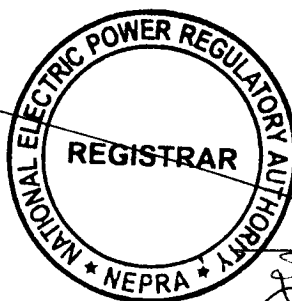
(ii). The increasing electricity consumption per capita can directly stimulate faster economic growth and indirectly achieve enhanced social development. In short, the Economic Growth of any country is directly linked with



the availability of safe, secure, reliable and cheaper supply of electricity. In view of the said, the Authority is of the considered opinion that for sustainable development all types of indigenous power generation resources including Coal, Hydel, Wind, Solar and other Renewable Energy (RE) resources must be tapped and developed on priority basis both in Public and Private Sectors.

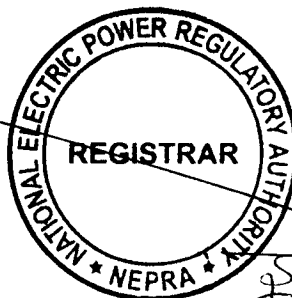
(iii). The existing energy mix of the country is heavily skewed towards the costlier thermal Generation Facilities/Power Plants, operating on Imported Furnace Oil. The Import of Furnace Oil not only creates a pressure on the precious foreign exchange reserves of the country but also causes an increase in the consumer end tariff. The increase in the consumer end tariff not only results in higher inflation but it also affects the competitiveness of the local Industry with its foreign peers. In order to address the said issues, the Authority considers it imperative that efforts must be made to change the energy mix towards relatively cheaper fuels. With the depleting Natural Gas Reserves in the country and relatively longer lead time for the construction of Hydro Electric Power Projects, the Coal Power Plants are considered the best option in the Short and Medium Term Planning. Therefore, to reduce the Demand-Supply gap and to achieve sustainable development, it is vital that Indigenous as well as Imported Coal Projects are given priority for power generation and their development is encouraged. In view of the said, the Council of Common Interests (CCI) approved the Power Policy 2013 which envisages rationalizing the energy mix and reducing the demand-supply gap through Imported and Indigenous coal based power generation projects. In consideration of the said, the Authority is of the view that the proposed project of CMEC/CMECPPL is consistent with the provisions of Power Policy 2013.

(iv). The Authority has examined the details submitted by the sponsors about the proposed Generation Facility/Coal Power Plant with reference to its location, size, type of technology being deployed, interconnection arrangements for dispersal of electric power and other specific details. The Project will be located at about 2-KM Northwest of Salt Range, in the Kallar Kahar and Pind Dadan Khan



regions with Latitude of 32° 36' 3.08" and Longitude of 73° 0' 21.43"), District Jhelum, in the Province of Punjab. The proposed Generation Facility/Coal Power Plant of CMECPPL with an Installed Capacity of 330.00 MW will be the first initiative which will be utilizing the Indigenous Coal (i.e. Bituminous, Lignite or Blended) available in the Salt Range of the Province of Punjab. In order to mine the available coal, an area over 56463.182 Acres has been designated for exploration of coal for proposed Generation Facility/Coal Power Plant of CMECPPL. The Authority has observed that the proposed Generation Facility/Coal Power Plant will be consisting of One (01) unit of 330.00 MW. The unit will have a Sub-Critical Pulverized Coal (PC) Boiler, Steam Turbine and Generator. The Authority considers that the proposed Sub-Critical Technology is very mature with many units in operation worldwide for many years with good track records. CMECPPL has confirmed that the Net Efficiency of the proposed Generation Facility/Coal Power Plant will be around 37.00% which is in line with the benchmark determined/set by the Authority in the Up-Front Tariff for the Thar Coal based Projects.

(v). The Authority is extremely satisfied that the proposed Power Project is included in the Least Cost Expansion Plan of the Power Purchaser (i.e. CPPA-G/NTDC). Further, NTDC has confirmed about carrying out of the required studies pertaining to the dispersal of electric power from the proposed Generation Facility/Coal Power Plant. NTDC has also confirmed that the electric power from the Indigenous Coal based Generation Facility/Coal Power Plant of CMECPPL will be evacuated at 132 KV Voltage Level. The proposed interconnection scheme will consist of (a). A 132kV Double Circuit (D/C) Transmission Line (approx. 35km long on ACSR Rail conductor) from the Generation Facility/Coal Power Plant of CMECPPL to Choa Saidan Shah Grid Station; (b). A 132kV D/C Transmission Line (approx. 35km long on ACSR Rail conductor) from the Generation Facility/Coal Power Plant to Head Faqirian Grid Station and (c). A 132kV Single Circuit (S/C) Transmission Line (approx. 10km long on ACSR Rail conductor) from the Generation Facility/Coal Power Plant to Dandot Grid Station. NTDC has confirmed

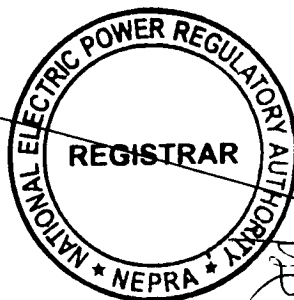


that chosen parameters of the Generation Facility/Coal Power Plant are in line with its requirement pertaining to system operation and reliability.

(vi). The term of a Generation Licence under the Rule-5 (1) of the Rules, is to commensurate with the maximum expected useful life of the units comprised in a generating facility. The proposed Generation Facility/Coal Power Plant of CMECPPL will be consisting of One (01) Steam Turbine Unit of 330.00 MW. According to the International benchmarks available, the useful life of a Steam Turbine is normally considered as least thirty (30) years from its Commercial Operation Date (COD). Further, CMECPPL has also confirmed that it will be negotiating a Power Purchase Agreement (PPA) with Power Purchaser for a term of thirty (30) years. In view of the said, the Authority fixes the term of the proposed Generation Licence of CMECPPL to be thirty (30) years from its COD.

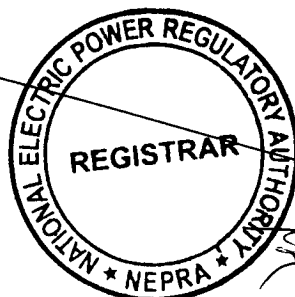
(vii). Regarding the Tariff that the generation company (i.e. CMECPPL) will charge from its Power Purchaser, it is clarified that CMECPPL has filed a Tariff Petition in the matter. The Authority has already admitted the Petition and the same is in advance stage of processing. Pending the decision of the Petition, the Authority directs CMECPPL to charge only such tariff as determined, approved or specified by the Authority in accordance with Article-6 of its proposed Generation Licence.

(viii). As explained above, the proposed Generation Facility/Coal Power Plant of CMECPPL, for which Generation Licence has been sought is based on Indigenous Coal of Slat Range Area. The Coal based Generation Facilities may be harmful to environment because of emission of SO<sub>x</sub>, NO<sub>x</sub>, Particulate Matters, Green House Gases-GHG, production of ash and other effluents. In this regard, CMECPPL has confirmed that Environmental Impact Assessment (EIA) has already been carried out for the Generation Facility/Coal Power Plant. The study has confirmed that the project will comply with the required International and Local Standards on environment without any exception. The sponsors have reconfirmed





that proposed Generation Facility/Coal Power Plant would have Air Emission Control equipment including Electro Static Precipitator-ESP and Flue Gas Desulfurization (FGD) to reduce the SO<sub>x</sub> emissions upto NEQS acceptable levels. Further, the boiler will be of low NO<sub>x</sub> technology to restrict the NO<sub>x</sub> emission level. It will also be ensured that NO<sub>x</sub> emission complies with National and Global standards. Waste water would be treated and utilized in-plant, with a small quantity of effluent discharged after further treatment to meet environmental standards. Conventional solid wastes (Bottom and Fly Ash) would be disposed at the ash yard, while hazardous waste would be collected and treated in-plant. Periodic monitoring of groundwater would be done to prevent water contamination. Efforts would be made to maximize use of fly ash and gypsum to reduce waste disposal. Water would be constantly sprayed in the coal yard to reduce coal dust. Sound attenuation material would be applied on machinery generating high noise levels. Pollution monitoring system inside and around the station would be set up to constantly monitor the environmental conditions. For the Coal based Power Plant, a lot of ash is produced during its operation. In order to handle the situation, a dry ash handling system will be employed consisting of a dry ash yard. In the vicinity of the proposed Generation Facility/Coal Power Plant, four cement plants are located which gives the project favorable conditions for comprehensive utilization of the generated ash. The EIA has proposed that the capacity of ash yard should be sufficient to meet the requirement for ash and slag storage for five (05) years. All the solid wastes shall be transported to the ash yard for dumping if there is no alternative way for their reuse. In short, CMECPPL has assured compliance of the Environmental Standards. CMECPPL has also confirmed that EIA has already been submitted to Environmental Protection Agency Govt. of Punjab (EPAGoPb) and it expected that a No Objection Certificate (NOC) will be issued soon. In view of the said, the Authority directs CMECPPL to pursue its case for approval of the EIA and issuance of NOC on priority basis and submit a copy of the same for its record. In order to ensure that the Generation Facility/Coal Power Plant conforms to the environmental standards during the term of the Generation Licence, the Authority has decided including a separate article for compliance of environmental



standards along with other terms and conditions. The said Article binds the Licensee/CMECPPL to comply with relevant environmental standards. Further, the Authority also directs CMECPPL to submit a report on bi-annual basis confirming that operation of its proposed Generation Facility/Coal Power Plant is compliant with required Environmental Standards as prescribed by EPAGoPb.

(ix). In view of the above, the Authority hereby decides to approve the grant of Generation Licence to CMECPPL on the terms and conditions as 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 there under and the other applicable documents.

**Authority**


Syed Masood-ul-Hassan Naqvi  
(Member)

 9/6/15

Himayat Ullah Khan  
(Member)

 10.6.15

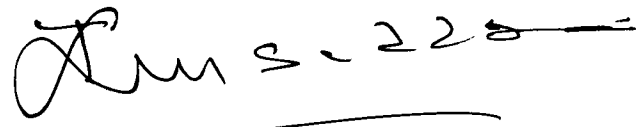
Khawaja Muhammad Naeem  
(Member)

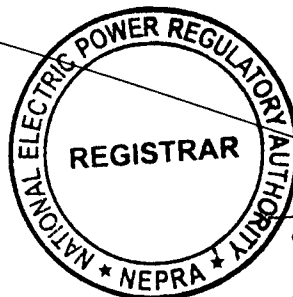
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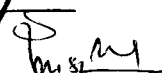
Maj. (R) Haroon Rashid  
(Member)/(Vice Chairman)

 10/6/15

Brig. (R) Tariq Saddozai  
(Chairman)

 10/6/15



  
10.06.15

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

**GENERATION LICENCE**

**No. IGSP/59/2015**

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:



**CMEC Power (PRIVATE) Limited**

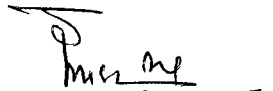
Incorporated under the Companies Ordinance, 1984  
Under Corporate Universal Identification No. 0093730, Dated June 01, 2015

**for its Indigenous Coal Based Generation Facility/Thermal Power Plant  
Located at Salt Range, Pind Dadan Khan, District Jhelum  
in the Province of Punjab**

(Installed Capacity: 330.00 MW Gross ISO)

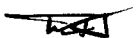
to engage in generation business subject to and in accordance with the Articles of this Licence.

Given under my hand on this 10<sup>th</sup> day of June Two Thousand & Fifteen and expires on 30<sup>th</sup> day of March Two Thousand & Forty Nine.

  
\_\_\_\_\_  
Registrar



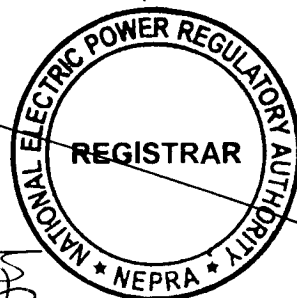




**Article-1**  
**Definitions**

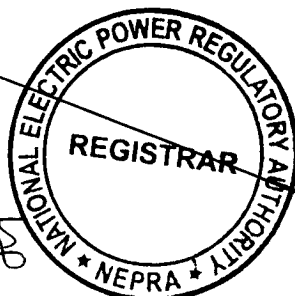
1.1 In this Licence

- (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). "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;
- (d). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility of the Licensee is commissioned;
- (e). "CPPA-G" means "the Central Power Purchasing Agency (Guarantee) Limited or any other entity created for the like purpose;
- (f). "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;
- (g). "IEC" means International Electrotechnical Commission or any other entity created for the like purpose and its successors or permitted assigns;
- (h). "IEEE" means the Institute of Electrical and Electronics Engineers and its successors or permitted assigns;



- (i). "IESCO" means "Islamabad Electric Supply Company Limited and its successors or permitted assigns;
- (j). "Licensee" means "CMEC Power (Pvt.) Limited" and its successors or permitted assigns;
- (k). "NTDC" means National Transmission and Despatch Company Limited and its successors or permitted assigns;
- (l). "Power Purchase Agreement" means the power purchase agreement, entered or to be entered into by and between the Power Purchaser and the Licensee, for the purchase and sale of electric energy generated by the generation facility, as may be amended by the parties thereto from time to time;
- (m). "Power Purchaser" means the CPPA-G purchasing power on behalf of XW-DISCOs;
- (n). "Regulation" means "the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999" as amended or replaced from time to time;
- (o). "Rules" mean "the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000";
- (p). "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 to this Licence.

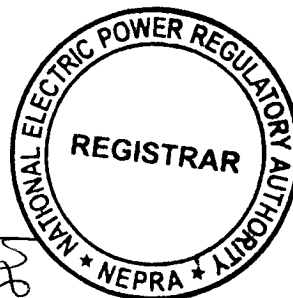
3.2 The net capacity of the generation facility of the Licensee is set out in Schedule-II hereto.

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 the Licence within ninety (90) days prior to the expiry of the term of the Licence, as stipulated in the Regulations.



**Article-5**  
**Licence fee**

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

**Article-6**  
**Tariff**

The Licensee shall charge only such tariff which has been determined, approved or specified by the Authority in terms of Rule-6 of the Rules.

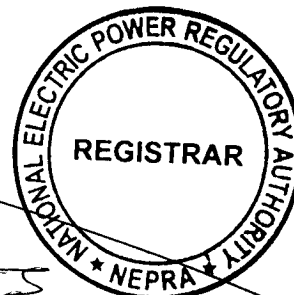
**Article-7**  
**Competitive Trading Arrangement**

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**

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

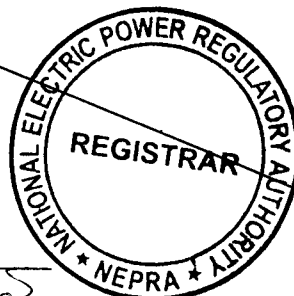
10.2 The Licensee shall provide a certificate on bi-annual basis, confirming that the operation of its generation facility is in line with environmental standards as prescribed by the relevant competent authority.

**Article-11**  
**Power off take Point and Voltage**

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

**Article-12**  
**Provision of Information**

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

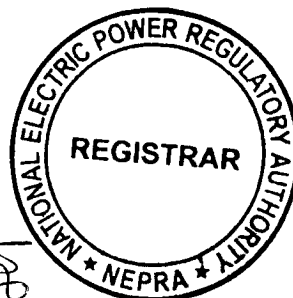




12.2 The Licensee shall be subject to such penalties as may be specified in the relevant rules made by the Authority for failure to furnish such information as may be required from time to time by the Authority and which is or ought to be or has been in the control or possession of the Licensee.

**Article-13**  
**Design & Manufacturing Standards**

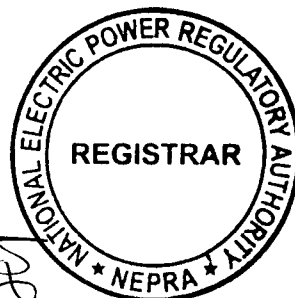
All the components of the generation facility/power plant shall be designed, manufactured and tested according to the latest IEC, IEEE or any other equivalent standards. All plant and equipment shall be unused and brand new.



## SCHEDULE-I

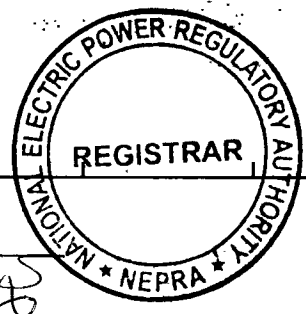
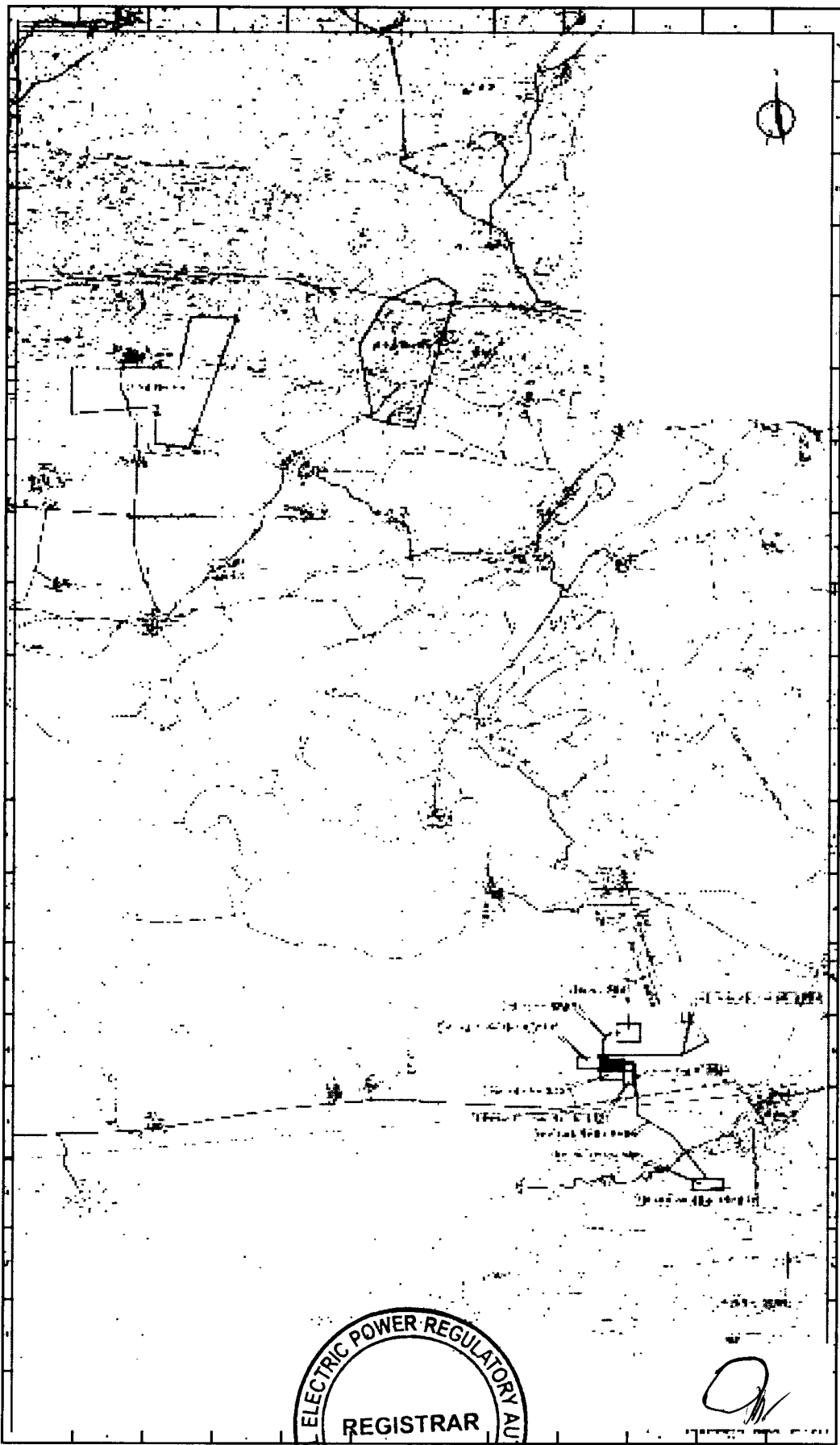
The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule

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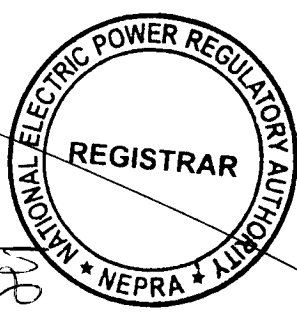
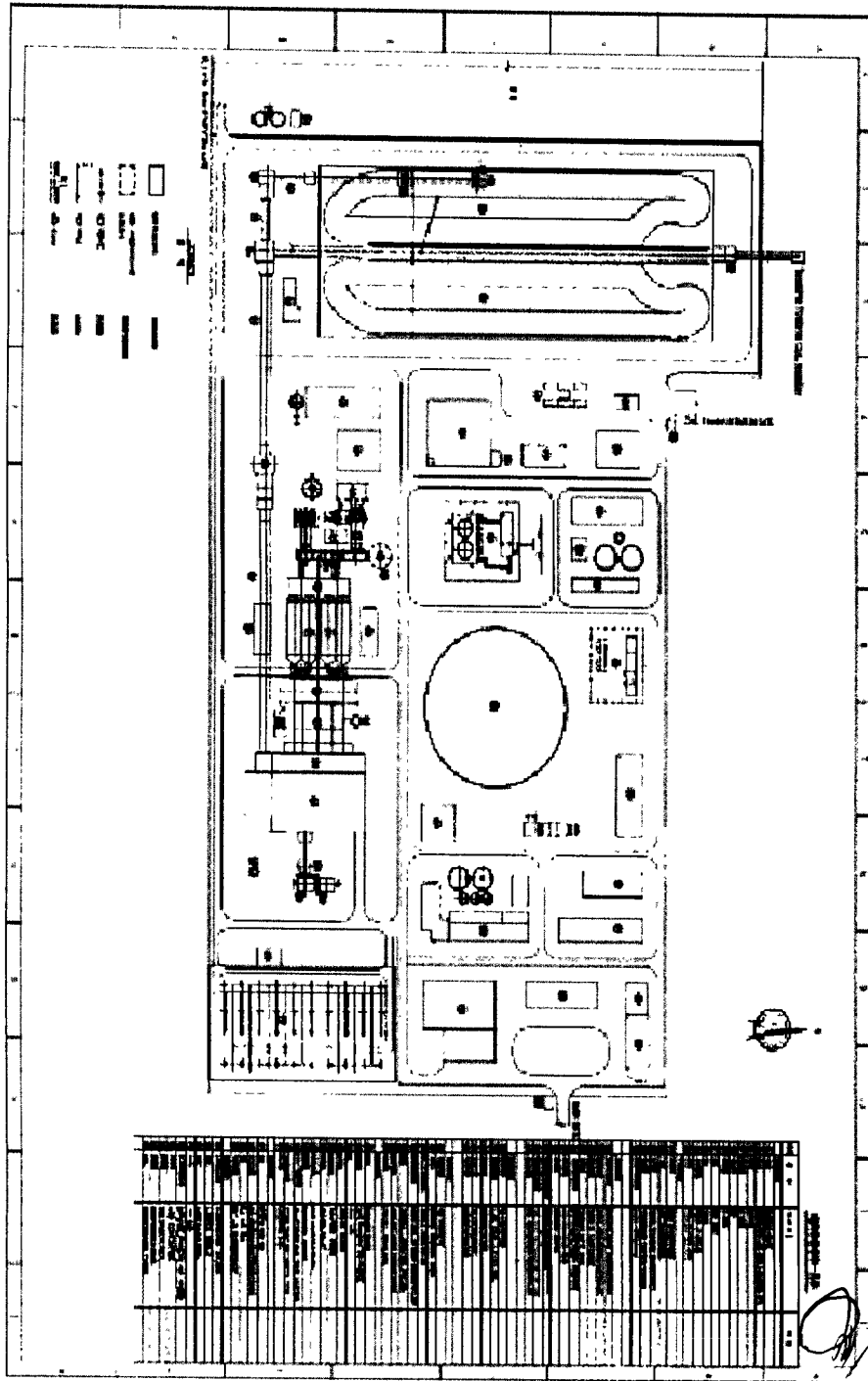


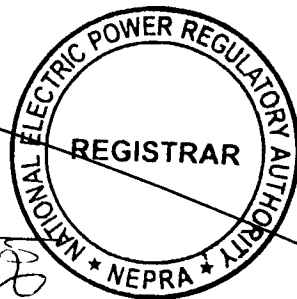
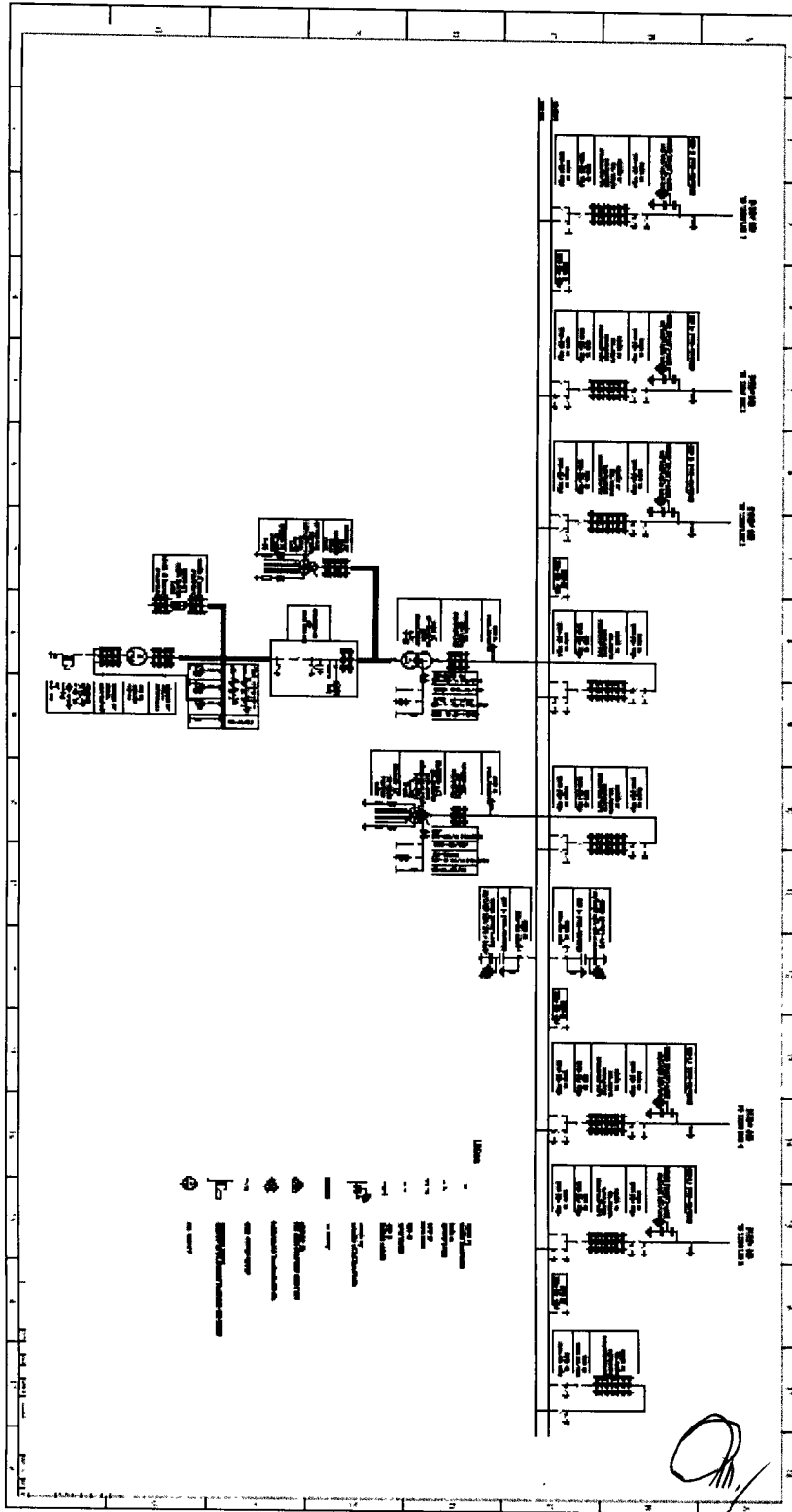
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Generation Licence  
CMEC Power (Pvt.) Limited  
Salt Range, PindDadan Khan  
District Jhelum,  
in the Province of Punjab



*[Handwritten signature]*





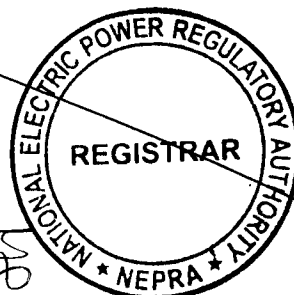
**Interconnection Facilities/  
Transmission Arrangements for Dispersal of Power from  
the Generation Facility/Thermal Power Plant**

The electric power from the Indigenous Coal based generation facility/thermal power plant of the Licensee/CMEC Power (Pvt.) Limited will be dispersed to the National Grid.

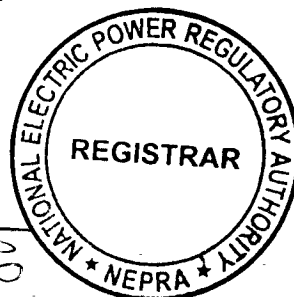
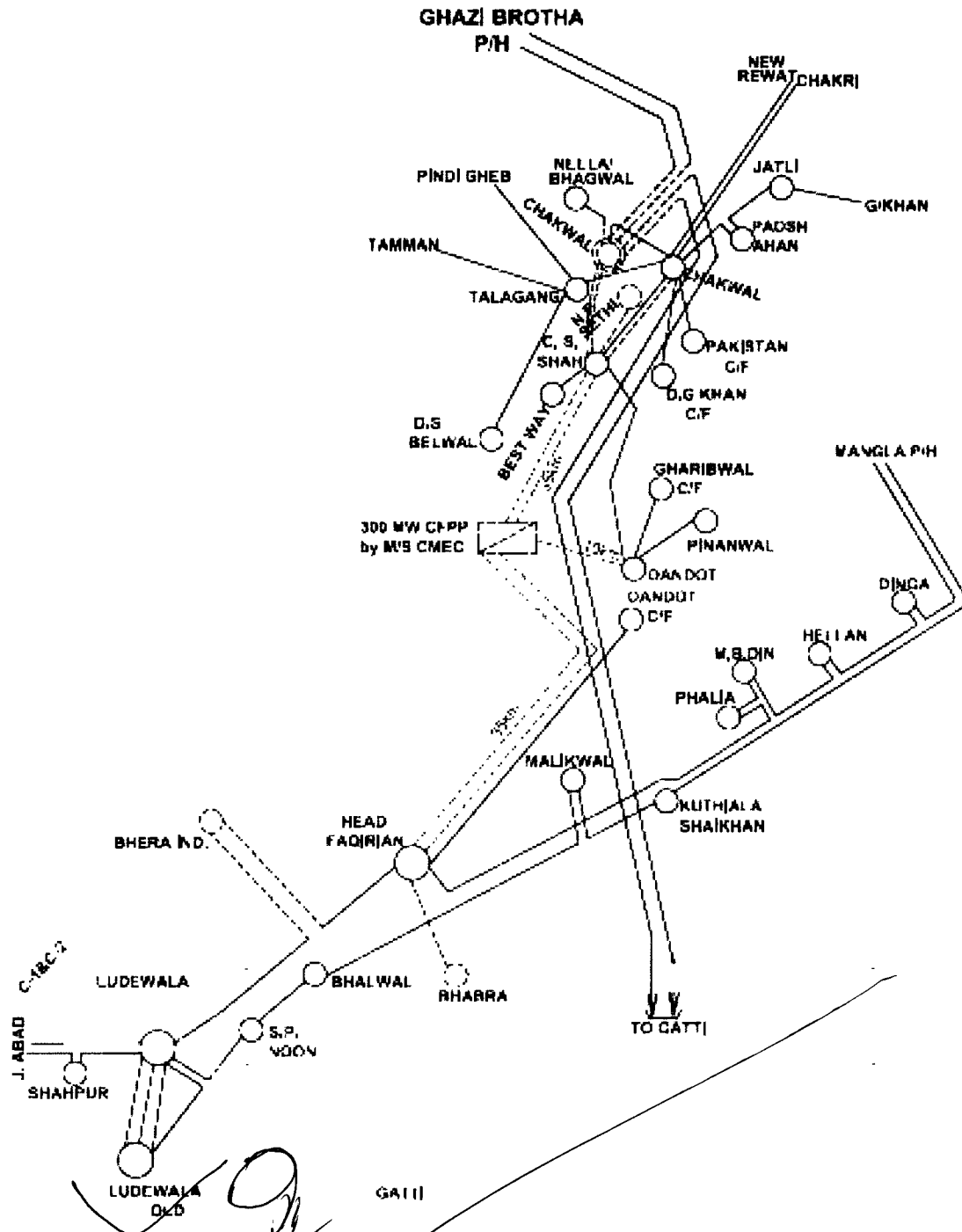
(2). The Interconnection Facilities (IF)/Transmission Arrangements (TA) for supplying to National Grid from the above mentioned generation facility/thermal power plant shall be at 132kV level. The IF/TA for supplying to National Grid will be consisting of the following:-

- (i). A 132kV Double Circuit (D/C) transmission line, approx. 35km long on ACSR Rail conductor, from the Generation Facility/Coal Power Plant to Choa Saidan Shah Grid Station;
- (ii). A 132kV D/C transmission line, approx. 35km long on ACSR Rail conductor, from the Generation Facility/Coal Power Plant to Head Faqirian Grid Station; and
- (iii). A 132kV Single Circuit (S/C) transmission line, approx. 10km long on Rail conductor, from the Generation Facility/Coal Power Plant to Dandot Grid Station.

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



**INTERCONNECTION SCHEME OF 300 MW COAL FIRED  
 POWER PLANT**



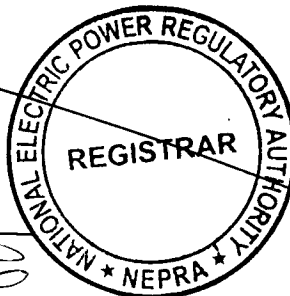
**Detail of  
 Generation Facility/  
 Power Plant**

**(A). General Information**

(i).	Name of Company/ Licensee	CMEC Power (Pvt.) Limited
(ii).	Registered/Business Office	House No. 03, Street No. 25, F-7/2, Islamabad.
(iii).	Location of the Generation Facility/ Power Plant	The Project site is located at 2 KM Northwest of Salt Range, KallarKahar, PindDadan Khan (Latitude: 32° 36' 3.08" and Longitude: 73°0' 21.43"), District Jhelum, in the Province of Punjab.
(iv).	Type of Generation Facility/ Power Plant	Subcritical Coal Fired Thermal Power Plant

**(B). Configuration of Generation Facility**

(i).	Installed Capacity/Size of the Generation Facility/ Power Plant	330.00 MW
(ii).	Type of Technology	Conventional Thermal Power Generation Facility with Sub-Critical Boiler and Steam Turbine
(iii).	Number of Units/Size (MW)	1 x 330 MW
(iv).	Unit Make/Model/Type & Year of Manufacture Etc.	Steam Turbine  Designed as per N336- 16.67/538/538 Single axis, subcritical, single reheat, multi cylinders; double flow exhaust, water cooling condenser Steam Turbine of Shanghai/DongFong/ Harbin or Equivalent

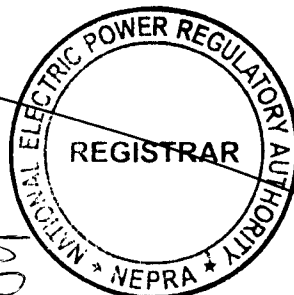




		Boiler	Sub-critical thermal power unit, variable pressure operation, once-through, single intermediate reheating of Harbin/DongFong/Shanghai or Equivalent
(v).	COD of the Generation Facility/ Power Plant (Anticipated)	March 31, 2019	
(vi).	Expected Useful Life of the Generation Facility/ Power Plant from COD	30 years	

**(C). Fuel/Raw Material Details**

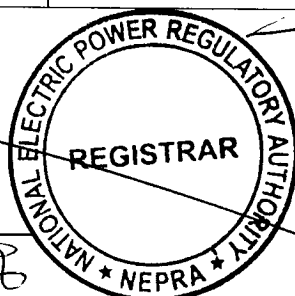
(i).	Primary Fuel	Indigenous Coal (Sub-Bituminous/Lignite) from Salt Range	
(ii).	Start-Up Fuel	Light Diesel Oil/LDO	
(iv).	Fuel Source for each of the above (i.e. Imported/Indigenous)	Primary Fuel	Start-Up Fuel
		Indigenous	Indigenous/Imported
(v).	Fuel Supplier for each of the above	Primary Fuel	Start-Up Fuel
		Fuel supply company of CMEC/Local Coal Miners involved in Mining of Salt Range Coal	Shell Pakistan/Pakistan State Oil/Any other OMC Company



(vi).	Supply Arrangement for each of the above Fuels	Primary Fuel		Start-Up Fuel
		Through Trucks, Conveyor Belts etc.		Through Oil Tankers
(vii).	No of Storage Bunkers/Tanks/ Open Yard	Primary Fuel		Start-Up Fuel
		Bunker	05 No.	Two (02) oil tanks
		Dry Coal Shed	1 No.	
		open coal storage yard	1 No.	
(viii).	Storage Capacity of each Bunkers/Tanks/ Open Yard	Primary Fuel		Start-Up Fuel
		Bunker	570m <sup>3</sup>	1000m <sup>3</sup>
		Dry Coal Shed	36,000 tons	
		open coal storage yard	162,000 ton	
(ix).	Gross Storage	Primary Fuel		Start-Up Fuel
		Bunker	2850 m <sup>3</sup>	2000m <sup>3</sup>
		Dry Coal Shed	36,000 tons	
		open coal storage yard	162,000 ton	

(D). Emission Values

		Primary Fuel	Start-Up Fuel
(i).	SO <sub>x</sub> (mg/Nm <sup>3</sup> )	900-1500	<200
(ii).	NO <sub>x</sub> (mg/Nm <sup>3</sup> )	510	<300



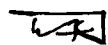
(iii).	CO <sub>2</sub> (%)	-	-
(iv).	PM <sub>10</sub> (mg/Nm <sup>3</sup> )	50	-

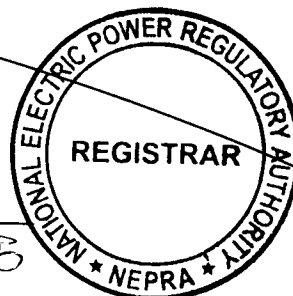
**(E). Cooling System**

(i).	Cooling Water Source/Cycle	Groundwater will be used as water source. Bore wells will be drilled near Jhelum river and water will be provided to power plant by piping form the said wells/Closed Loop
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**(F). Plant Characteristics**

(i).	Generation Voltage	20 KV			
(ii).	Frequency	50Hz			
(iii).	Power Factor	0.85 (lagging)			
(iv).	Automatic Generation Control (AGC) (MW control is the general practice)	AGC is provided in the plant, but the AGC parameter must be matched with the parameter of the power grid.			
(v).	Ramping Rate (MW/min)	≤33.6 MW/min			
(vi).	Time required to Synchronize to Grid (Hours./Minutes)	Cold Start	Warm Start	Hot Start	Very Hot Start
		150 Minutes	35 Minutes	25 Minutes	15 Minutes

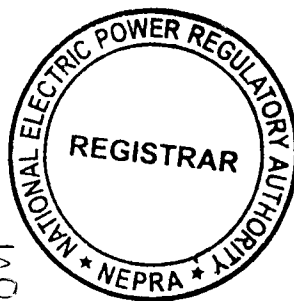




## SCHEDULE-II

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.

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## SCHEDULE-II

(1).	Total Gross Installed Capacity of the Generation Facility/Thermal Power Plant	330.00 MW
(2).	De-rated Capacity of Generation Facility/Thermal Power Plant at Reference Site Conditions	330.00 MW
(3).	Auxiliary Consumption of the Generation Facility/Thermal Power Plant	026.40 MW
(4).	Total Installed Net Capacity of Generation Facility/Power Plant at Reference Site Condition	303.60 MW

**Note**

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

