National Electric Power Regulatory Authority

Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad.
Ph: 9206500, 9207200 Fax : 9210215
E-mail: office@nepra.org.pk

Registrar

No. NEPRA/R/LAG-103/5413-14

January 02, 2008

Malik Ahmad Khan
Director
Intergen (Pvt.) Limited
No. 64, Ground Floor,
Beverly Centre, Blue Area,
Islamabad

Subject: **Generation Licence No. IGSPL/16/2008**
Licence Application No. LAG-103
Intergen (Pvt.) Limited (IPL)

Please refer to your letter no. IGL-HO(001)/07/PD, dated October 03, 2007 to NEPRA for a Generation Licence.

2. Enclosed here is Generation Licence No. IGSPL/16/2008 granted by the Authority to Intergen (Pvt.) Limited (IPL). The Licence is granted to you pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

3. Please quote above mentioned Generation Licence No. for your future correspondence with the Authority.

Enclosure: **As above**

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(Mahjoob Ahmad Mirza)

Copy for information to Director General, Pakistan Environmental Protection Agency, House No. 311, Main Margalla Road, F-11/3, Islamabad.

National Electric Power Regulatory Authority
(NEPRA)
Islamabad – Pakistan

GENERATION LICENCE

No. IGSPL/16/2008

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 (XL of 1997), the Authority hereby grants a Generation Licence to:

INTERGEN (PRIVATE) LIMITED
Incorporated under the Companies Ordinance, 1984
Under Certificate of Incorporation

No. 00000004503/20050601, Dated June 22, 2005

For its Plant located near Lachi, District Kohat, NWFP
(Installed Capacity: 165.285 MW Gross ISO)

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

Given under my hand this 1st day of JANUARY, Two Thousand & Eight, and expires on 29th day of June, Two Thousand & Thirty Six.

Registrar

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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Article-1
Definitions

1.1 In this Licence

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

(b) "Authority" means the National Electric Power Regulatory Authority constituted under section 3 of the Act;

(c) "Licensee" means Intergen (Private) Limited;

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

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 functional specifications and other details specific to the power generation facilities of the Licensee are set out in Schedule-I to this Licence.

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

3.3 The Licensee shall provide the final arrangement, technical and financial specifications and other details specific to generation facilities before commissioning of the generation facilities.

Article-4
Term of Licence

4.1 The Licence is granted for a term of twenty five (25) years after the Commercial Operation Date.

4.2 Unless revoked earlier, the Licensee may ninety days (90) days prior to the expiry of the term of the Licence, apply for renewal of the Licence under the Licensing (Application and Modification Procedures) Regulation, 1999

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 National Electric Power Regulatory Authority (Fees & Fine) Rules, 2002.

Article-6
Tariff

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

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Article-7
Competitive Trading Arrangement

7.1 The Licensee shall participate in such measures 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 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 conform to the relevant NEPRA rules on Performance Standards as may be prescribed by the Authority from time to time.

Article-10
Compliance with Environmental Standards

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

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Article-11
Provision of Information

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

11.2 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.

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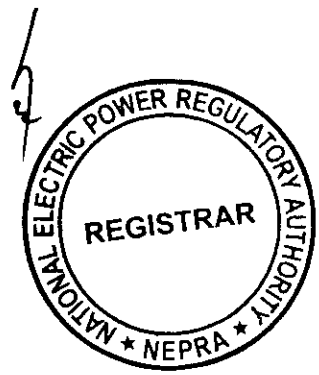
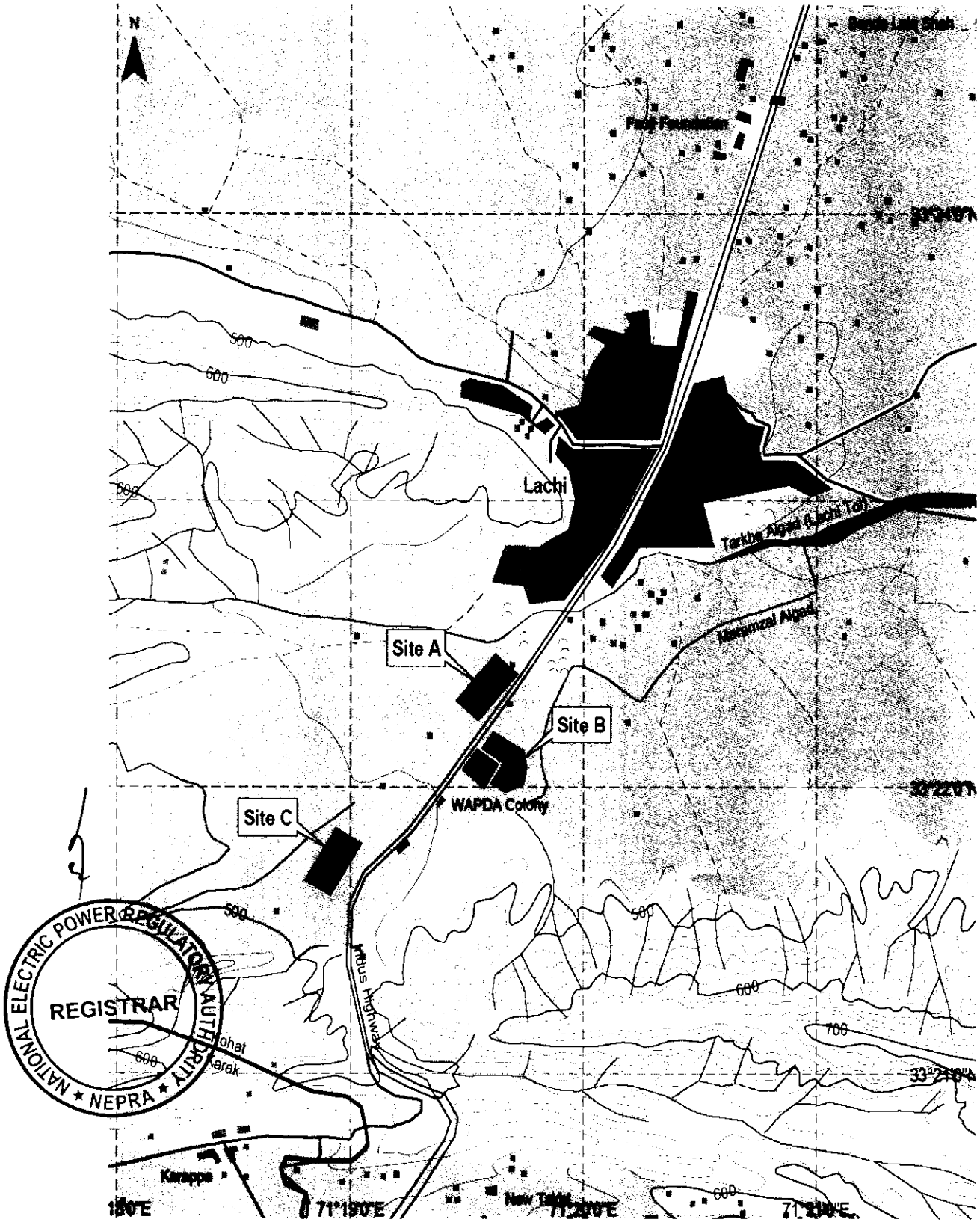
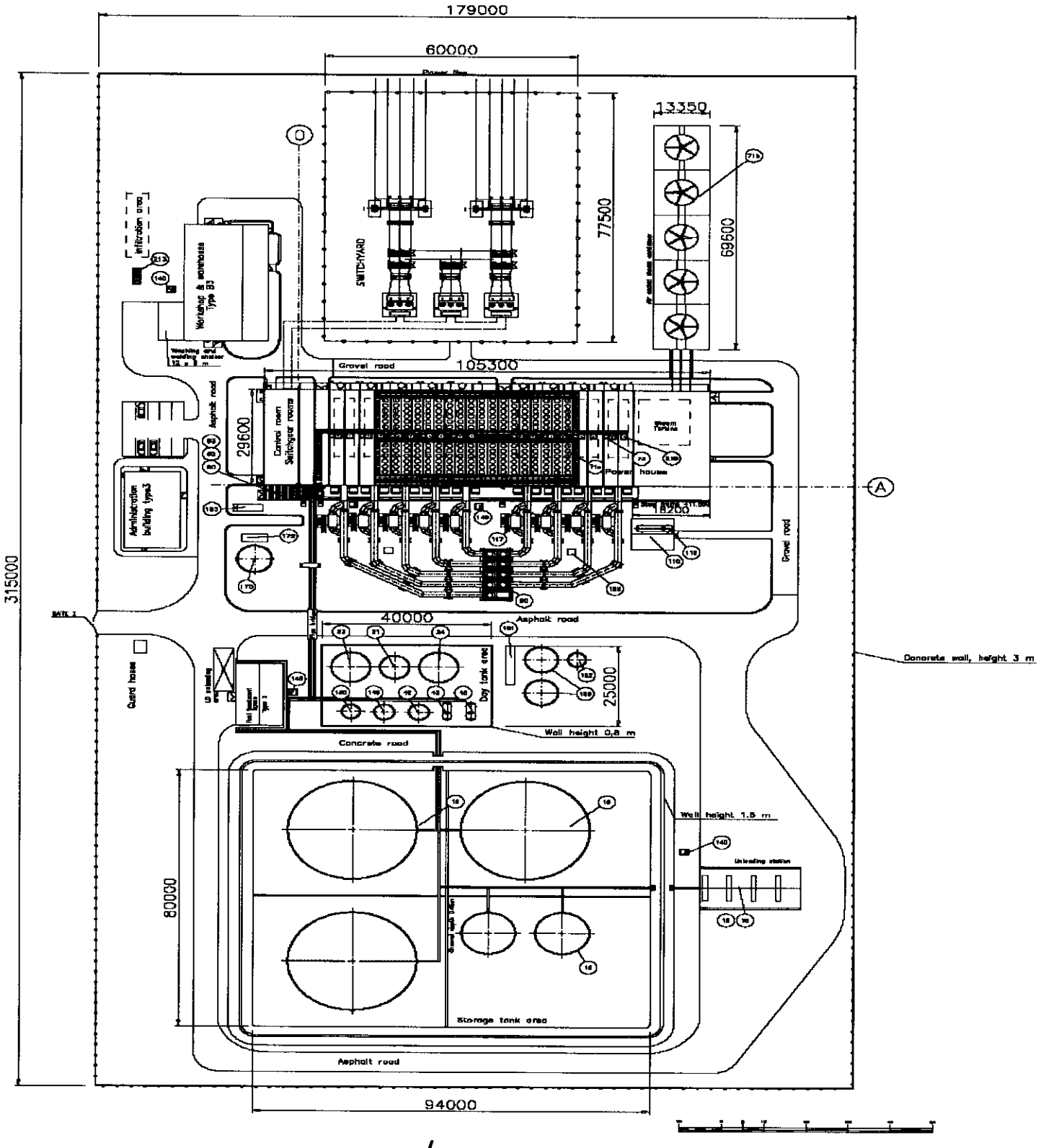
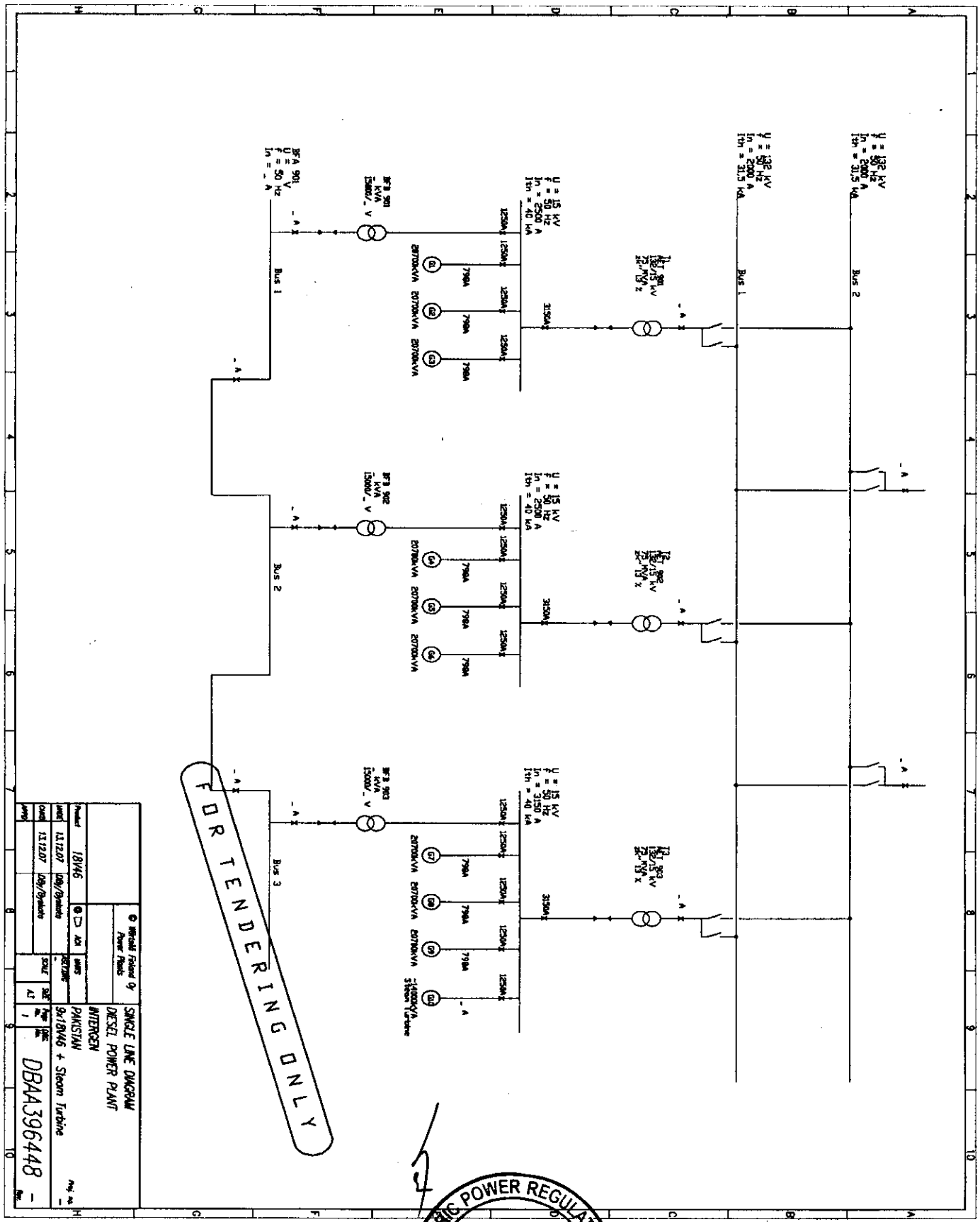
SCHEDULE-I

The location, size (capacity in MW) technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to the Generation Facilities of the Licensee.









INTERCONNECTION SCHEME FOR THE POWER DISPERSAL OF THE PLANT*

The Power of the Power Plant shall be dispersed to system directly within PESCO load center at 132 KV voltage level as follows:-

- A new 132 KV D/C Transmission Line measuring about 2.0 KM in length on ACSR LYNX Conductor will be constructed for making double In-Out of the existing 132 KV D/C Transmission Line from Kohat-Lachi/Gurguri at Intergen (Private) Limited.

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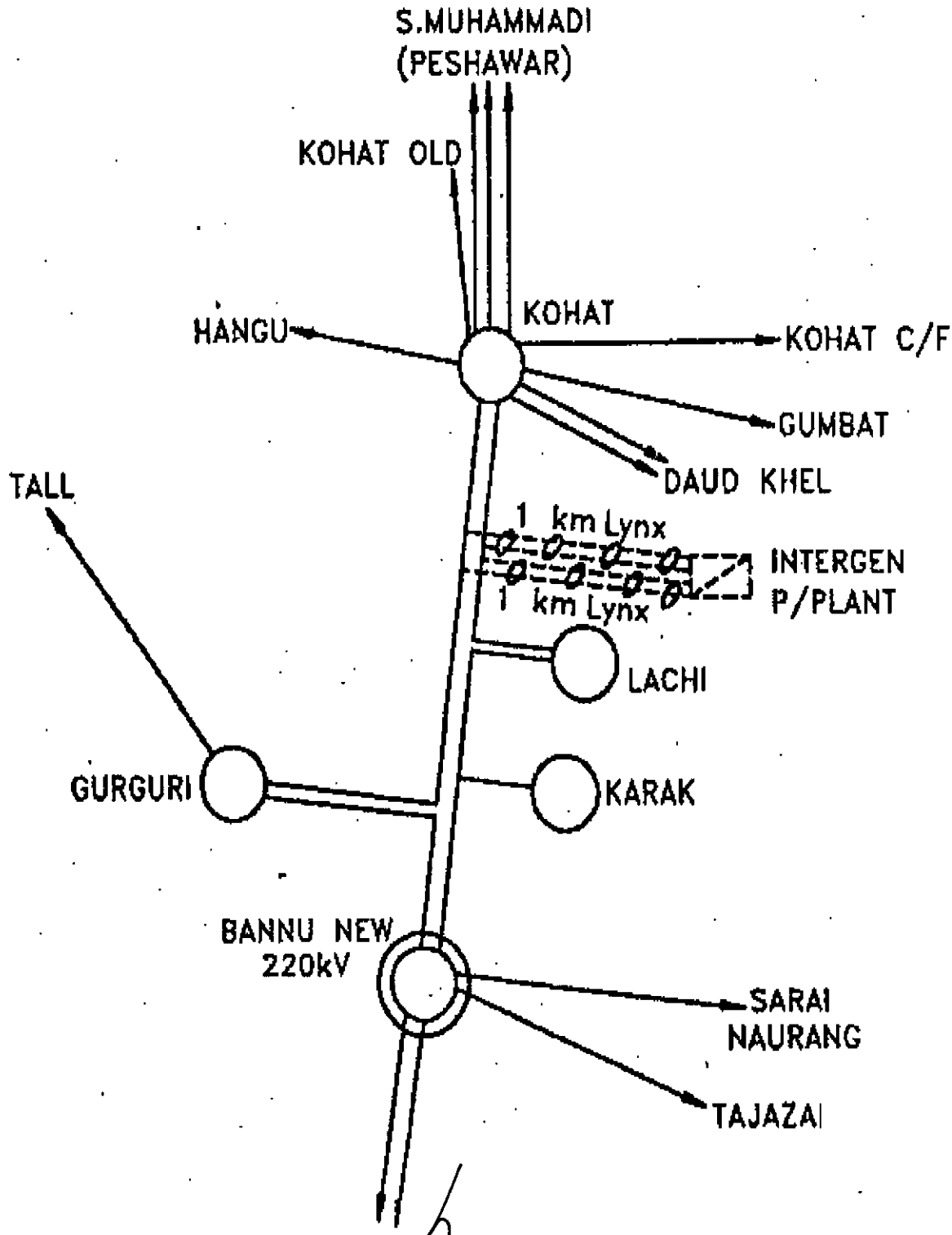
* As provided in the Interconnection Study provided by Intergen (Private) Limited.

INTERCONNECTION & TRASNMISSION ARRANGEMENT FOR DISPERSAL OF POWER



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Plant Details†

1. General Information

i.	Name of Applicant	Intergen (Private) Ltd
ii.	Registered/Business Office	No.64, Ground Floor, Beverly Centre, Blue Area, Islamabad.
iii.	Plant Location	Lachi, District Kohat, NWFP
iv.	Type of Generation Facility	Thermal Generation (Combined Cycle)

2. Plant Configuration

i.	Plant Size Installed Capacity (Gross ISO)	165.285 MW
ii.	Type of Technology	Reciprocating Engines
iii.	Number of Units/Size (MW)	Reciprocating Engines : 9 x 17.076 MW Steam Turbine : 1x 11.60 MW
iv.	Unit Make & Model	Reciprocating Engines – Wartsila 18V46 Steam Turbine – Dresser/Rand Nadrowski/ Fincantieri/ Cantieri Navali Italiani/ GE/MAN/Peter Brotherhood/Siemens/Sojizt Europe (Shinko)/Triveni Engineering & Industries
v.	De-rated Capacity at Mean Site Conditions	160.64 MW
vi.	Auxiliary Consumption	4.6 MW
vii.	Commissioning and Commercial Operation date	June 30, 2011
viii.	Expected Life of the Facility from Commercial Operation Date	25 years

† As provided by the Applicant

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3. Fuel Details

i.	Primary Fuel	High Sulphur Fuel Oil (HSFO)	
ii.	Back-up Fuel (emergency/Start Up Only)	High Speed Diesel (HSD)	
iii.	Fuel Source (Imported/Indigenous)	Indigenous or imported	
iv.	Fuel Supplier	PSO/PARCO/Attock Refinery Limited/OOTCL	
v.	Supply Arrangement	Through bowzers to the site.	
vi.	No of Storage Tanks	Primary Fuel (HSFO)	Back-up Fuel (HSD)
		3	2
vii.	Storage Capacity of each Tank	Primary Fuel (HSFO)	Back-up Fuel (HSD)
		10,000 m^3	1500 m^3
viii.	Gross Storage	Primary Fuel (HSFO)	Back-up Fuel (HSD)
		30,000 m^3	3000 m^3

4. Emission Values

i.	SO_x	Primary Fuel (HSFO)	Back-up Fuel (HSD)
		54.43 tons/day	To be provided later by
ii.	NO_x	2000 mg/Nm^3	-Do-
iii.	CO	125 mg/Nm^3	-Do-
iv.	PM_{10}	110 mg/Nm^3	-Do-

5. Cooling System

i.	Cooling Water Source/Cycle	Air cooling; water requirement with air cooling equipment is only 68 m^3 /day which will be fulfilled by boring deep wells at the site.

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6. Plant Characteristics

i.	Generation Voltage	15 kV
ii.	Frequency	50 Hz
iii.	Power Factor	0.8
iv.	Automatic Generation Control	Yes
v.	Ramping Rate	0.9 MW/minute for DG sets. For Complex output it is 5% of complex load/minute
vi.	Time required to Synchronize to Grid and loading the complex to full load.	To be provided later

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SCHEDULE-II

The net capacity of the Licensee's Generation Facilities

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SCHEDULE-II*

1.	Installed Capacity Gross ISO	165.285 MW
2.	De-rated Capacity at Mean Site Conditions	160.64 MW
3.	Auxiliary Consumption	4.6 MW
4.	Net Capacity of the Plant at Site Conditions	156.04 MW

Note

All the above figures are indicative as provided by the Licensee. The Net Capacity available to NTDC for dispatch and other purchasers will be determined through procedures contained in the Agreements or Grid Code.

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* As provided by the applicant

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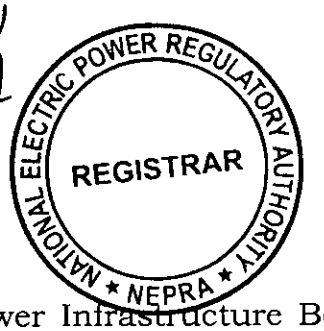
Determination in the Matter of Grant of Generation Licence to Intergen (Private) Limited



January 1, 2008
Application No. LAG-103

Background

The Private Power Infrastructure Board (PPIB) on a request from Interconstruct (Private) Limited (ICPL) issued a Letter of Interest (LOI) in July 2004 to ICPL, for the setting up a 100-150 MW power plant in the North West Frontier Province (NWFP). According to the "Policy for Power Generation Projects year 2002" (the Policy), the sponsor was required to carry out a feasibility study (FS) to be approved by Panel of Experts (POE) appointed by PPIB. ICPL hired the services of Elektowatt Ekono, Finland in September 2004 for the preparation of the required FS. In order to carry out the project implementation, ICPL incorporated a separate company in the name of Intergen (Private) Limited (IPL) in June 2005.

2. POE approved the FS in January 2006. In April 2006, Government of Pakistan issued a new fuel policy taking into consideration the non-availability of gas in the country. As a result, several under development IPPs have to be switched from Natural Gas to High Sulphur Fuel Oil (HSFO), as the main fuel for operation. IPL after receiving instructions of PPIB in May 2006 changed the project from Natural Gas to HSFO. IPL prepared a supplement to the already approved FS. PPIB advised IPL to approach NEPRA for the grant of Generation Licence.

Filing of Application

3. IPL in accordance with Section 15 of Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997), filed an

application on October 5, 2007 with NEPRA, requesting the grant of a Generation Licence. Authority admitted the application of IPL for consideration of a Generation Licence on November 12, 2007.

4. Pursuant to Regulation-8 of the NEPRA Licensing (Application and Modification Procedure) Regulation-1999, a brief of Prospectus and Notices of Admission were published in daily newspapers of November 15, 2007 for seeking comments from the interested/affected parties and general public. In response to the public notice in the media, NEPRA received comments from the following five (05) interested persons/stakeholders including Ministry of Industries, Production and Special Initiatives, Environmental Protection Agency, NWFP, The Federation of Pakistan Chambers of Commerce and Industry (FPCCI), Islamabad, Private Power Infrastructure Board (PPIB) and Central Power Purchasing Agency (CPPA).

5. After considering the received comments, the Authority decided to hold a hearing/conference on December 6, 2007, which was attended by the representatives of the applicant and other organizations including PPIB, NTDC and Wartsila (Pakistan).

Proceedings of Hearing

6. During the hearing, IPL presented salient features of the project and explained that the proposed plant would consist of Nine (09) Reciprocating Engines, Nine (09) Heat Recovery Steam Generator (HRSG) and one (01) Steam Turbine to be installed and operated in a Combined Cycle mode.

7. IPL explained that the electricity generated from the proposed power plant would be acquired by CPPA on behalf of the Ex-WAPDA DISCOs. It was also informed that CPPA vide its letter No. COO/CPPA/CE-II/4346-47, dated April 26, 2006 requested for

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procurement of power from IPL and Authority vide its decision of May 11, 2006 granted the same.

8. The applicant presented its case and other participants/interested persons were also heard during the hearing. The participants proffered their comments and submitted arguments supporting their stance. The following relevant salient points were discussed during the hearing and commented on by other participants:-

- Exact Site Location, Land Availability/Procurement for the proposed Power Plant still not final.
- Preference of reciprocating engines instead of Gas Turbines for the proposed Power Plant.
- Option to install duel fuel engines (Gas/Oil).
- Commitment/Agreement of Wartsila to supply engines.
- Authorized Capital of the Company and the equity requirements of the project.
- Inconsistency of the COD of the project as given in the Generation Expansion Plan of NTDC and that given the Generation Licence application.
- Installed, De-rated, Net Capacity, Availability, Reliability of power plant as given in the Generation Licence Application.
- Useful Life of the Power Plant Equipment and Term of the Licence.

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- Interconnection and Transmission arrangement for dispersal of power from the power plant. The load flow studies emphasize that proposed power plant would be kept energized even if the plant was on shut down/on maintenance work. Would the power plant agree to this limitation?

- Confirmation of the Fuel Supplier to make available the Main and Back up fuel and status of the Fuel Supply Agreement (FSA).

- Ensuring Availability of Water for the Power Plant.

- Compliance with Environmental Standards.

9. IPL informed that the proposed site of the project was located in the vicinity of Lachi town, about 20 km North-East of Kohat city on the Main Indus Highway. It was also explained that the proposed location was adjacent to the existing 132 kV grid station of Lachi. It was elaborated that the negotiations for procurement of land were in advance stage and it was expected that the purchase and final transfer of land would be completed within the next few months.

10. Regarding the preference of the reciprocating engines, IPL clarified that during the course of the FS of the project, the consultant carried out in depth analysis of various technologies. However, considering the Net efficiency, Average Availability, Reliability, equipment availability and the shortest construction period, the option of reciprocating engines in combination with Steam turbine in the Combined Cycle mode was preferred. About the selection of the Wartsila technology for the proposed power plant, IPL stressed that Wartsila was one of the leading suppliers of power plants having presence in the power market of Pakistan. Almost all of the existing IPPs with reciprocating technology operating in country

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were based on Wartsila engines. In view of the above, IPL decided to select the Wartsila engines for the proposed power project.

11. Regarding the option of installing the duel fuel reciprocating engines, it was explained that option to install the duel fuel engines were considered during the FS of the project however due to non-availability of the gas, this option was not considered economical and was excluded in the supplement to the FS of the project. IPL stressed if at any stage the Gas was made available for the power plant, IPL with the prior permission of NEPRA, would convert the plant for operation on duel fuel operation. IPL further elaborated that the proposed Wartsila 18V46 engines could be converted to a dual fuel (Gas and HSFO) by adding the required equipment at relatively lower cost and time.

12. About the confirmation of the Wartsila to supply the required engines, IPL stated that it had already received a firm quotation from Wartsila. Once the process of the Generation Licence and Tariff were finalized, it was expected an EPC contract for the supply of the plant equipment would signed before the end of February 2008.

13. Regarding the authorized capital of the company and the equity requirements of the project, IPL informed that the initial authorized capital was kept to a token amount. However, the capital amount would be increased whenever required to cope with the project funding requirements.

14. Regarding the inconsistency of the COD of the plant, IPL informed that initially the project was envisaged to achieve the COD during 2008-09. However, critical factors especially the fuel availability changed the whole scenario of the project implementation. IPL confirmed that it was cognizant of the impact of any unnecessary delay and assured of its best effort to expedite the project development and all efforts were being made to achieving the Commercial Operation Date (COD) by June 30, 2011.

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15. IPL informed that the project would consist of nine (09) Wartsila 18V46 engines (each having a capacity of 17.076 MW), Nine (09) Heat Recovery Steam Generators (HRSG) and One (01) Steam turbine (1 x 11.60 MW). The total installed capacity of the complex at the ISO conditions would be 165.285 MW which would be De-Rated to 160.64 MW in accordance with the Mean Site Conditions. The net output of the complex would be 156.04 MW after allowing an auxiliary consumption of 4.60 MW. It was clarified that the minimum Annual Availability of the complex would be 88% based on reciprocating engines running on HSFO fuel.

16. Regarding the useful Life of the Power Plant Equipment, IPL explained that according to the information provided by the manufacturer, the power plant and the associated equipment would have a useful life of 25 years. IPL stressed that in order to safeguard its investment, it would request the term of the proposed Generation Licence to be for a period of 25 years, in line with the useful life of the power plant.

17. NTDC confirmed that the power generated by the proposed power plant would be disbursed within the load center of PESCO by constructing a new 132 KV D/C Transmission Line measuring nearly 2.0 KM in length by making a double In-Out of the existing 132 KV D/C Transmission Line from Kohat-Lachi/Gurguri at the site of IPL. IPL further clarified that the proposed Interconnection and Transmission facilities would be constructed and maintained by NTDC as per Policy Guideline of the Government of Pakistan. IPL also confirmed that the switchyard for the IPL would have a double bus-bar configuration and it would allow the switchyard to be energized even when the power plant was out of service to allow continuity of the supply of 132 KV D/C Transmission Line from Kohat to Lachi/Gurguri passing through the proposed switchyard of IPL.

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18. IPL elaborated that although no fuel supply agreement was in place at present. However, IPL was in contact with different oil marketing companies including Pakistan State Oil (PSO), PARCO, Attock Refinery Limited (ARL) and Oversees Oil Trading Corporation Limited (OOTCL), for ensuring the availability of the Main (HSFO) and Back up fuel (HSD) for the plant operation. It was expected that a long term Fuel Supply Agreement (FSA) would be reached soon.

19. IPL explained that considering the water constraints in the area, IPL power plant would be based on Air Cooling equipment. The water requirement of the proposed Air Cooling equipment was only 68 m3/day, which would be fulfilled by boring deep wells at the site. The Hydrological investigation carried out at site had indicated the availability of the required quality of the water at the proposed site location.

20. IPL informed that the services of Hagler Bailly Pakistan were engaged to carry out the required Initial Environmental Impact Assessment (EIA) for the project. The EIA had indicated the emissions of the plants would be clearly below the limits set forth by the National Environmental Standards (NEQS) in Pakistan and would also comply with the World Bank Guidelines for Thermal Power Plants. The power plant would be equipped with modern Continuous Emission Monitoring System (CEMS) for recording and reporting of air pollutants. Noise emissions would be mitigated by taking appropriate measures.

Comments of Applicant on Draft Gen. Licence.

21. Draft Generation Licence proposed to be granted to IPL was circulated to all stakeholders including the applicant (i.e. IPL). No objections were received earlier or proffered during the hearing with respect to the Terms and Conditions of the proposed Draft Generation Licence by any of the stakeholders. The grant of Generation Licence was supported by all the stakeholders who provided comments.

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Grant of Generation Licence.

22. Although the current Power Policy in vogue in the country envisages development of power projects based on indigenous resources including Hydel, Gas and Coal. However, the non-availability of gas for the future power projects and delay in the implementation of the indigenous Hydel and Coal based projects in the country, has forced the PPIB to include RFO/HSFO based Reciprocating Engine technology in the basket of procurement to meet the growing electricity demand of the country. The instant case had been referred by PPIB vide its communication of 1(102) PPIB-1006/06/PRJ, dated March 29, 2006.

23. In view of the prevailing situation of non-availability of natural gas for any of new power projects, the imminent shortage of Generating Capacity with respect to Peak Demand, lesser construction/ commissioning lead time of reciprocating engines compared to other technologies, the reluctance of sponsors to employ Gas Turbine for burning RFO/HSFO fuel mainly due to operational problems, the Authority considers the proposed project as acceptable under the given circumstances. It would be in the interest of the consumers as well as the general public to install RFO/HSFO based plants in the country to cater the needs of the electricity in the country.

24. The Authority considers that the overall power system reliability of the area will be greatly improved with the addition of the proposed thermal power plant in the system generally served by a fluctuating hydel generation. The quality of the power is also expected to be improved through increased reactive support and generation near load requirement.

25. The Authority considers that the induction of the IPL will not only result in reduction in the over-loading of the 500 KV Shiekh Muhammadi Grid station and the 220 KV New Grid station of Bannu being experienced now. Further being located close to the existing grid station

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of Lachi it will also result in reduction in transmission losses and better voltage control. Further IPL will result in improvement in the overall system reliability and especially for PESCO and TESCO load centers.

26. In view of the above the Authority hereby decides to approve the grant of Generation Licence to Intergen Private Limited (IPL), in the terms set out in the attached Licence as annexed to this determination. The grant of such a licence would be subject to the provisions contained in the NEPRA Act and relevant rules framed there under.

Authority

Nasiruddin Ahmed
Member

Maqbool Ahmad Khawaja
Member

Abdul Rahim Khan
Member

Zafar Ali Khan
Member/Vice Chairman

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