National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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

Registrar

No. NEPRA/R/LAG-204/6622-24

July 27, 2012

Mr. Ahmad Naveed Ismail
Chief Executive Officer
Lumen Energia (Private) Limited
House No. 254, Street No. 31,
Sector I-8/2, Islamabad

Subject: **Generation Licence No. IGSPL/33/2012**
Licence Application No. LAG-204
Lumen Energia (Private) Limited

Reference: *Your letter No. nil dated February 10, 2012.*

Enclosed please find herewith Generation Licence No. IGSPL/33/2012 granted by National Electric Power Regulatory Authority (NEPRA) to Lumen Energia (Pvt.) Limited, pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997). Further, the determination of the Authority in the subject matter is also attached.

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

Enclosure: **Generation Licence (IGSPL/33/2012)**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

(Syed Safeer Hussain)

Copy to:

1. Chief Executive Officer, Faisalabad Electric Supply Company (FESCO), Abdullahpur, Canal Bank Road, Faisalabad
2. 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/33/2012

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:

LUMEN ENERGIA (PRIVATE) LIMITED

Incorporated under the Companies Ordinance, 1984
Under Certificate of Incorporation
No. 0073087, dated July 13, 2010

for its Bio-Mass based Generation Facility Located at 3.3-KM Jhang-Chiniot Road, District Jhang in the Province of Punjab

(Installed Capacity: 12.00 MW Gross ISO)

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

Given under my hand this _____ day of July Two Thousand & Twelve and expires on day of 29th June Two Thousand & Forty Four.

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) "Grid Code" means the NTDC Grid Code;

(d) "Licensee" means Lumen Energia (Private) Limited;

(e) "NTDC" means National Transmission and Despatch Company Limited;

(f) "Policy" means the Policy for Development of Renewable Energy for Power Generation, 2006 of Government of Pakistan as amended from time to time;

(g) "Power Purchaser" means a Distribution Licensee which purchases electricity from the Licensee, pursuant to a power purchase agreement for procurement of electricity;

(h) "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.

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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.

3.2 The net capacity of the generation facilities 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 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 thirty (30) years after the Commercial Operation Date.

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

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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 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 approved, determined, adjusted or specified by the Authority.

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 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.

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Article-9
Compliance with Performance Standards

The Licensee shall comply with the relevant provisions of the National Electric Power Regulatory Authority Performance (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 power to the Power Purchaser at 11 KV voltage level at the door step of its generation facility. The up-gradation (step up) of generation voltage up to 11 KV, if any 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 have been in the control or possession of the Licensee.

Article-13
Emissions Trading /Carbon Credits

The Licensee shall process and obtain emissions/carbon credits expeditiously and credit the proceeds to the Power Purchaser as per prevailing Policy.

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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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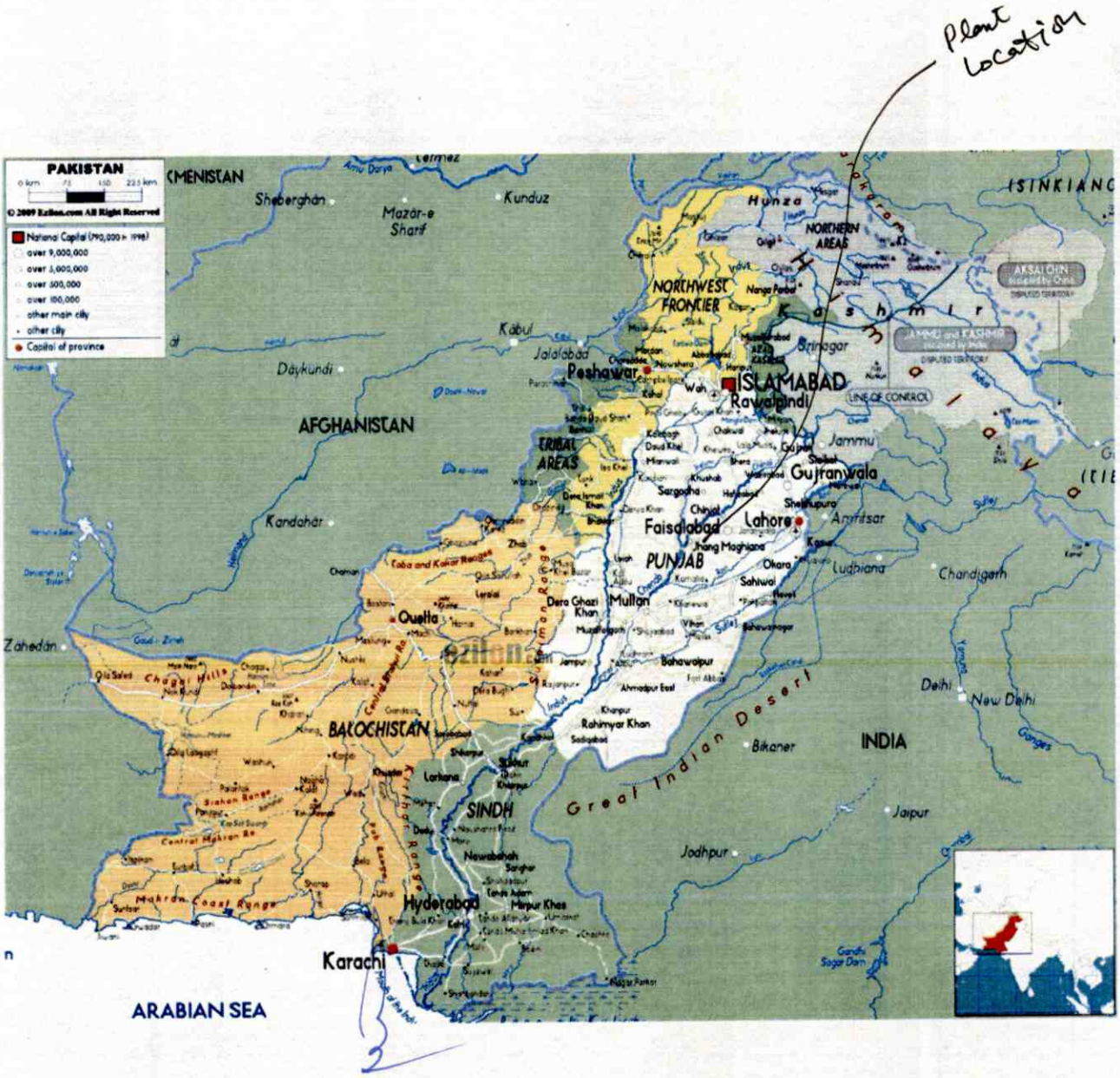
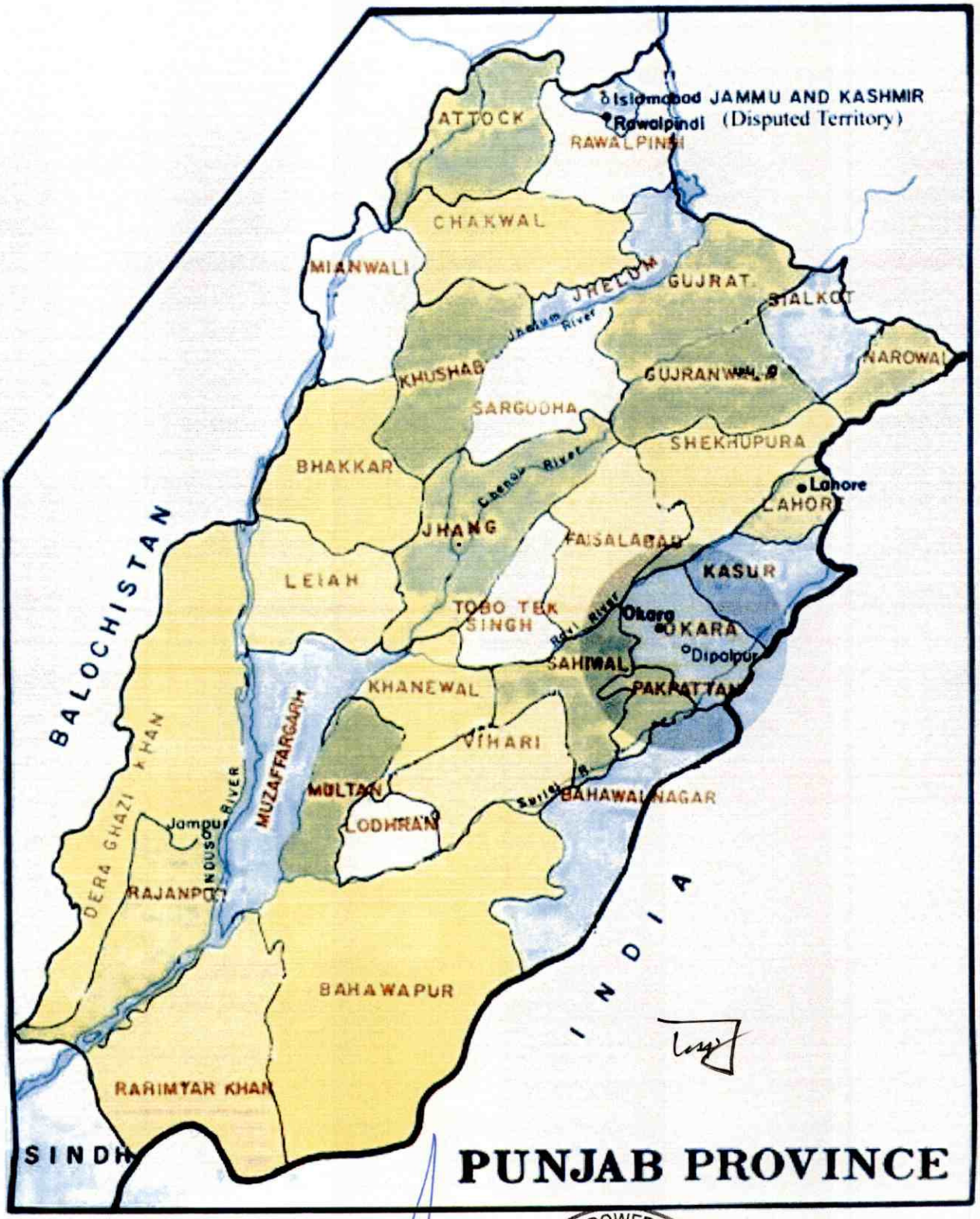

Plant Location
PAKISTAN
AFGHANISTAN
ISLAMABAD
Rawalpindi
Peshawar
Lahore
Faisalabad
Gujranwala
Multan
Quetta
Karachi
Hyderabad
BALOCHISTAN
SINDH
PUNJAB
NORTHWEST FRONTIER
TRIBAL AREAS
NORTHERN AREAS
Kashmir
INDIA
ARABIAN SEA
Great Indian Desert
Kabul
Kandahar
Jodhpur
Jaipur
Delhi
New Delhi
Chandigarh
Ludhiana
Amritsar
Bikaner



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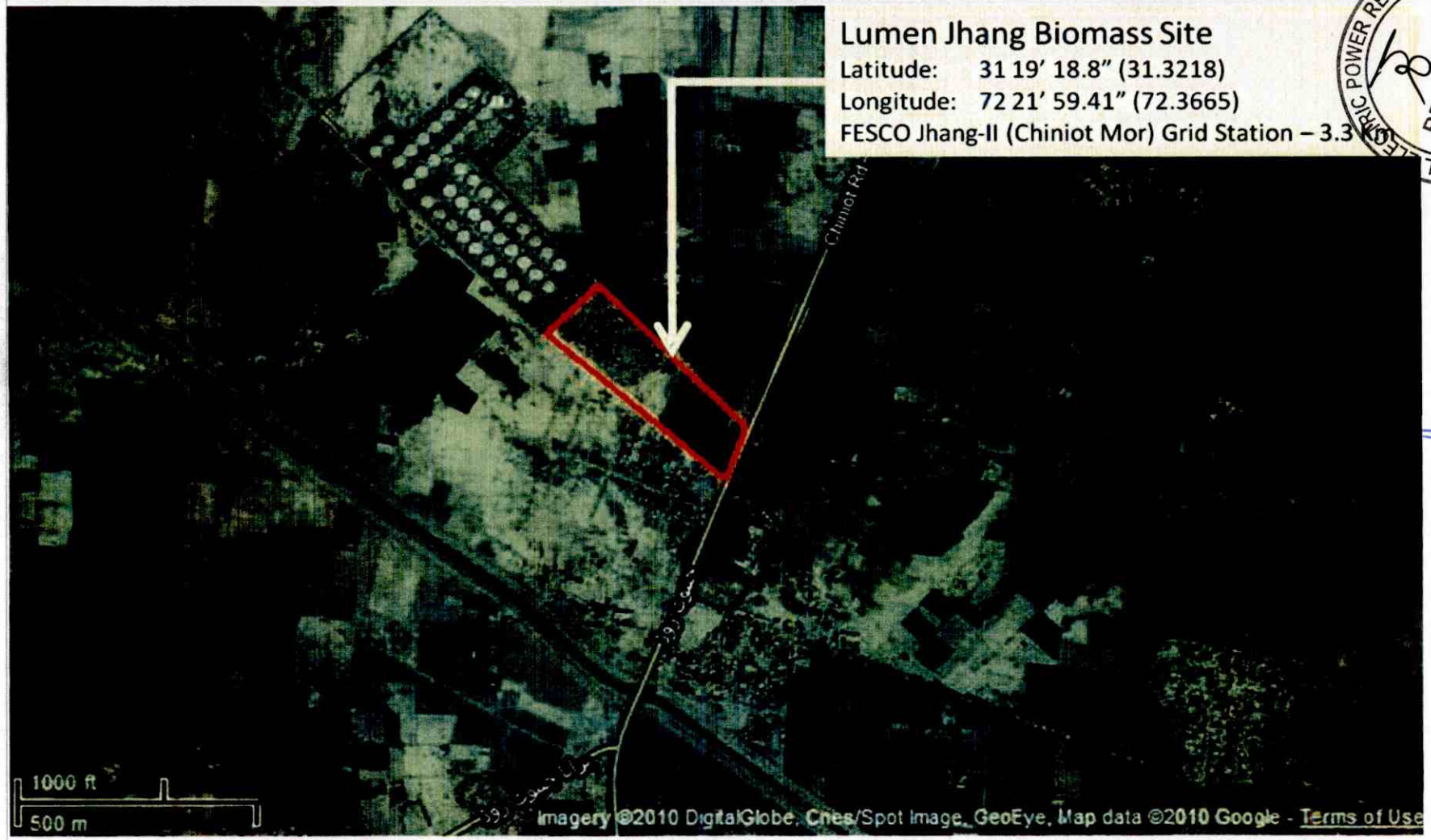
Generation Licence
Lumen Energia (Private) Limited
3.3-KM Jhang-Chiniot Road
District Jhang
Punjab

LUMEN ENERGIA
12 MW Jhang Biomass Power Plant



INTERCONNECTION/TRANSMISSION SCHEME FOR DISPERSAL OF POWER FROM LUMEN ENERGIA (PRIVATE) LIMITED (LEPL)

The Power generated from the biomass based Thermal generation facility of LEPL will be dispersed to the Load Center/Ring of Faisalabad Electric Supply Company Limited (FESCO) at 11 KV voltage level.

The Interconnection/Transmission Facilities will be consisting of three (03) 11 KV feeders (measuring about 3.3 KM) connecting the generation facility of LEPL to 132 KV Jhang-II Grid Station.

Any change in the final Interconnection and Transmission Arrangement(s), for the dispersal of power other than the above, as agreed by LEPL and FESCO shall be communicated to NEPRA in due course of time.

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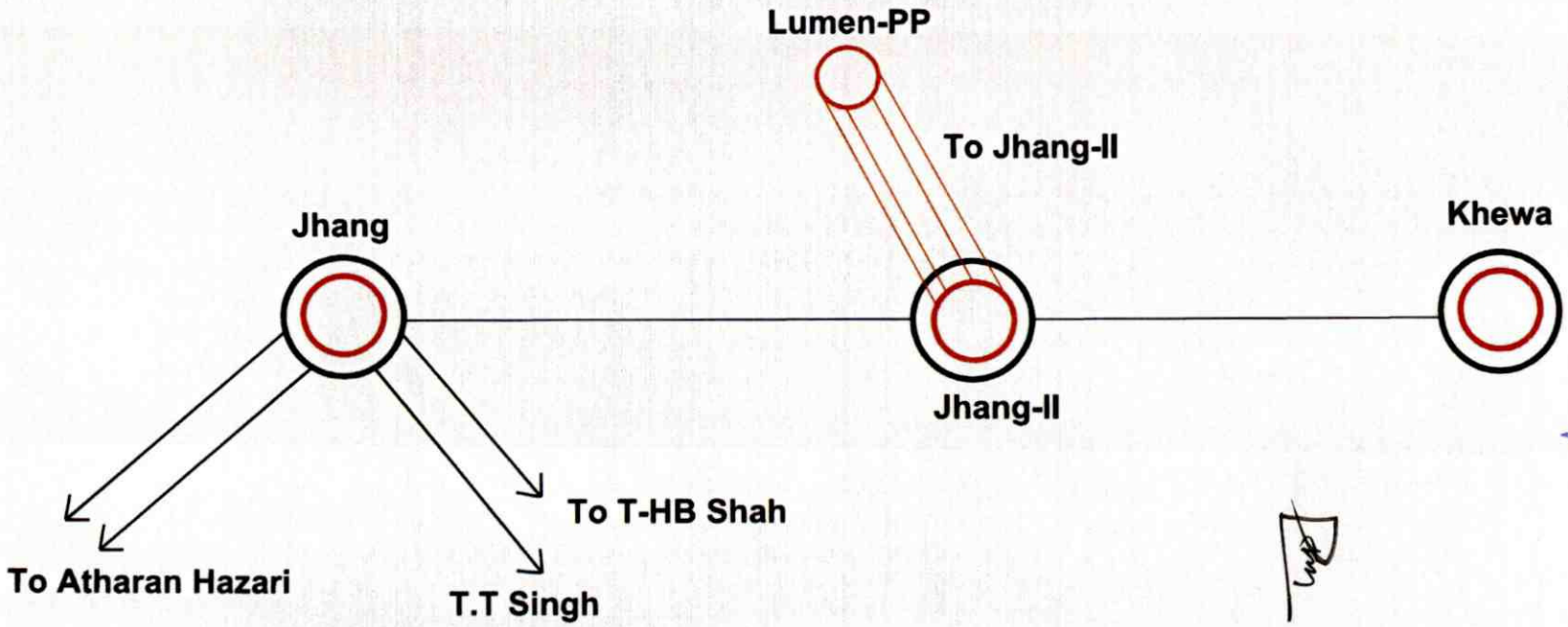
Existing 132 kV Network Near Jhang-II With Lumen PP, Year-2014



Legend

11kV

132kV

Proposed 11kV

Sketch-2			
Interconnection Study of Lumen PP			
Power Planners International			
DATE 2011	SHEET 1	DWG NO. Lumen-Sketch-2.DWG	REV

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Details of Generation Facility/ Power Plant*

(A). General Information

(i).	Name of Applicant	Lumen Energia (Private) Limited
(ii).	Registered/ Business Office	House No. 254, Street 31, Sector I-8/1, Islamabad.
(iii).	Plant Location	3.3-KM Jhang-Chiniot Road, District Jhang, in the Province of Punjab
(iv).	Type of Generation Facility	Thermal Power Plant.

(B). Plant Configuration

(i).	Plant Size Installed Capacity (Gross ISO)	12.00 MW
(ii).	Type of Technology	Steam Turbine
(iii).	Number of Units/Size (MW)	1 x 12.00 MW
(iv).	Unit Make & Model	Hangzhou Steam Turbine company Limited or equivalent
(v).	Commissioning and Commercial Operation date	June 30, 2014

* As provided by Lumen Energia (Private) Limited

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(vi).	Expected Life of the Facility from Commercial Operation Date	30 Years

(C). Fuel Details

(i).	Primary Fuel	Cotton Stalk/Rice Husk	
(ii).	Alternate Fuel	Cotton Stalk/Wood Chips etc.	
(iii).	Start Up Fuel	Light Diesel Oil	
(iii).	Fuel Source (Imported/Indigenous)	Primary Fuel	Alternative Fuel
		Indigenous	
(iv).	Fuel Supplier	Primary Fuel	Alternative Fuel
		Cotton Stalk from private Sources and local farmers	Multiple Biomass residues from Private Sources and local farmers
(v).	Supply Arrangement	Primary Fuel	Alternative Fuel
		Loading Trucks/Tractor Trolleys etc	
(ix).	Storage Capacity (Open Yard Storage)	Primary Fuel	Alternative Fuel
		3,500 tons of Agriculture Residues Biomass onsite with additional storage offsite (Equivalent to 45 days full load operation of the plant)	
(ix).	Storage Capacity (Covered Storage)	Primary Fuel	Alternative Fuel
		3,500 tons of Agriculture Residues Biomass onsite	

(D). Emission Values

(i).	SO_x	less than 400 mg/Nm3

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(ii).	NO_x	less than 400 mg/Nm3
(iii).	CO	less than 800 mg/Nm3
(iv)	PM_{10}	less than 500 mg/Nm3

(E). Cooling Water System

(i).	Cooling Water Source/Cycle	Tube wells for extracting underground water/Closed Loop

(F). Plant Characteristics

(i).	Generation Voltage	11KV		
(ii).	Frequency	50 Hz		
(iii).	Power Factor	Leading 0.95 & Lagging 0.8		
(iv).	Automatic Generation Control	Not Applicable		
(v).	Ramping Rate	Complex Load range (LR)	Cold start (% per minute)	Hot start (% per minute)
		0 < LR < 25	1.0	1.0
		25 < LR < 50	1.0	2.0
		50 < LR < 100	1.0	3.0
(vi).	Time required to Synchronize to Grid and loading the complex to full load.	Length of shutdown (SDHrs)	Notice required to synchronize (mins)	
		0 < SDHrs < 2	50	
		2 < SDHrs < 8	100	
		8 < SDHrs < 32	130	
		32 < SDHrs < 150	300	
		SDHrs > 150	400	

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SCHEDULE-II

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

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SCHEDULE-II*

1.	Installed Capacity (Gross)	12.00 MW
2.	De-rated Capacity	12.00 MW
3.	Auxiliary Consumption	01.20 MW
4.	Net Capacity of the Plant at Mean Site Conditions	10.80 MW

Note

All the above figures are indicative as provided by the Licensee. The Net Capacity available to FESCO for dispatch will be determined through procedure(s) contained in the Bi-lateral Agreement(s), Grid Code or any other applicable document(s).

* As provided by Lumen Energia (Private) Limited

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