



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad
Ph: 051-9206500, 9207200, Fax: 9210215
E-mail: registrar@nepra.org.pk

Registrar

No. NEPRA/R/LAG-208/6788-90

August 30, 2012

Mr. Khurshid Anwar Jamali
Technical Consultant
Pak Ethanol (Pvt.) Limited
2nd Floor, Block-4,
Hockey Club of Pakistan Stadium,
Liaquat Barracks,
Karachi-75350
Ph: 021-111666447

Subject: **Generation Licence No. SGC/81/2012**
Licence Application No. LAG-208
Pak Ethanol (Pvt.) Limited.

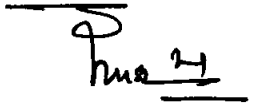
Reference: *Your application vide No. nil, dated 21st March, 2012.*

Enclosed please find herewith Generation Licence No. SGC/81/2010 granted by National Electric Power Regulatory Authority (NEPRA) to Pak Ethanol (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**
(SGC/81/2012)




(Syed Safeer Hussain)

Copy to:

1. Chief Executive Officer, Hyderabad Electric Supply Company (HESCO), WAPDA Water Wing Complex, Hussainabad, Hyderabad
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. SGC/81/2012

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 the following:-

PAK ETHANOL (PVT.) LIMITED

Incorporated under the Companies Ordinance, 1984
Under Corporate Universal Identification
No. 0073288, dated August 05, 2010

for its Bio-Gas based Generation Facility Located at Deh Jagsiyani
Taluka Matli District Tando Muhammad Khan
in the Province of Sindh

(Installed Capacity: 9.132 MW Gross ISO)

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

Given under my hand this 30th day of August Two
Thousand & Twelve and expires on day of 14th February
Two Thousand & Thirty Eight


Registrar



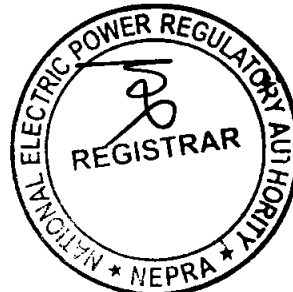
Article-1
Definitions

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 **Pak Ethanol (Pvt.) 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 (i.e. Hyderabad Electric Supply Company Limited) 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.





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.

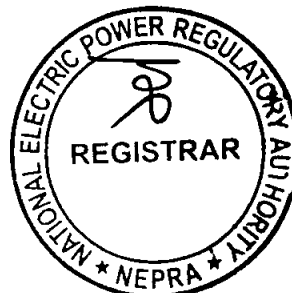
3.3 The Licensee shall provide the final arrangement, technical and financial specifications and other details specific to generation facilities before commissioning of the generation facilities.

Article-4
Term of Licence

4.1 The Licence is granted for a term of twenty five (25) 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 & Modification Procedures) Regulations, 1999 as amended or replaced from time to time.





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.

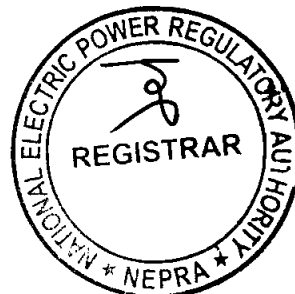
Article-7
Competitive Trading Arrangement

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.



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.

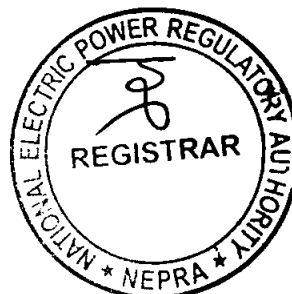
Article-12
Provision of Information

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.

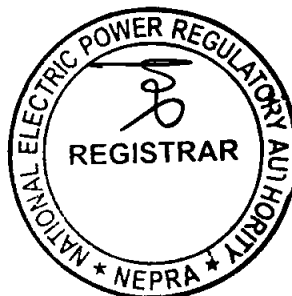
Article-13
Emissions Trading /Carbon Credits

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



SCHEDULE-I

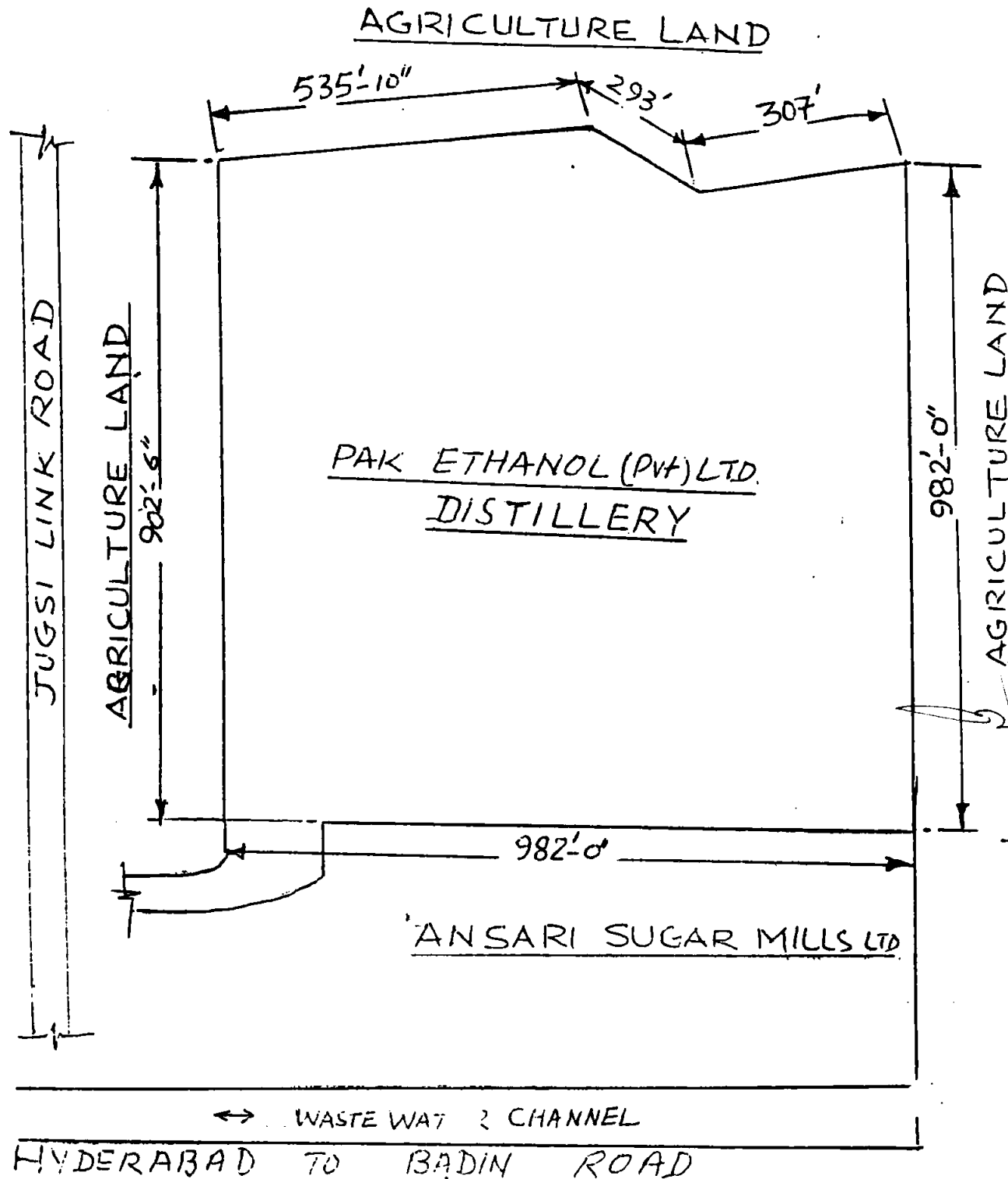
The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule.



Location Map

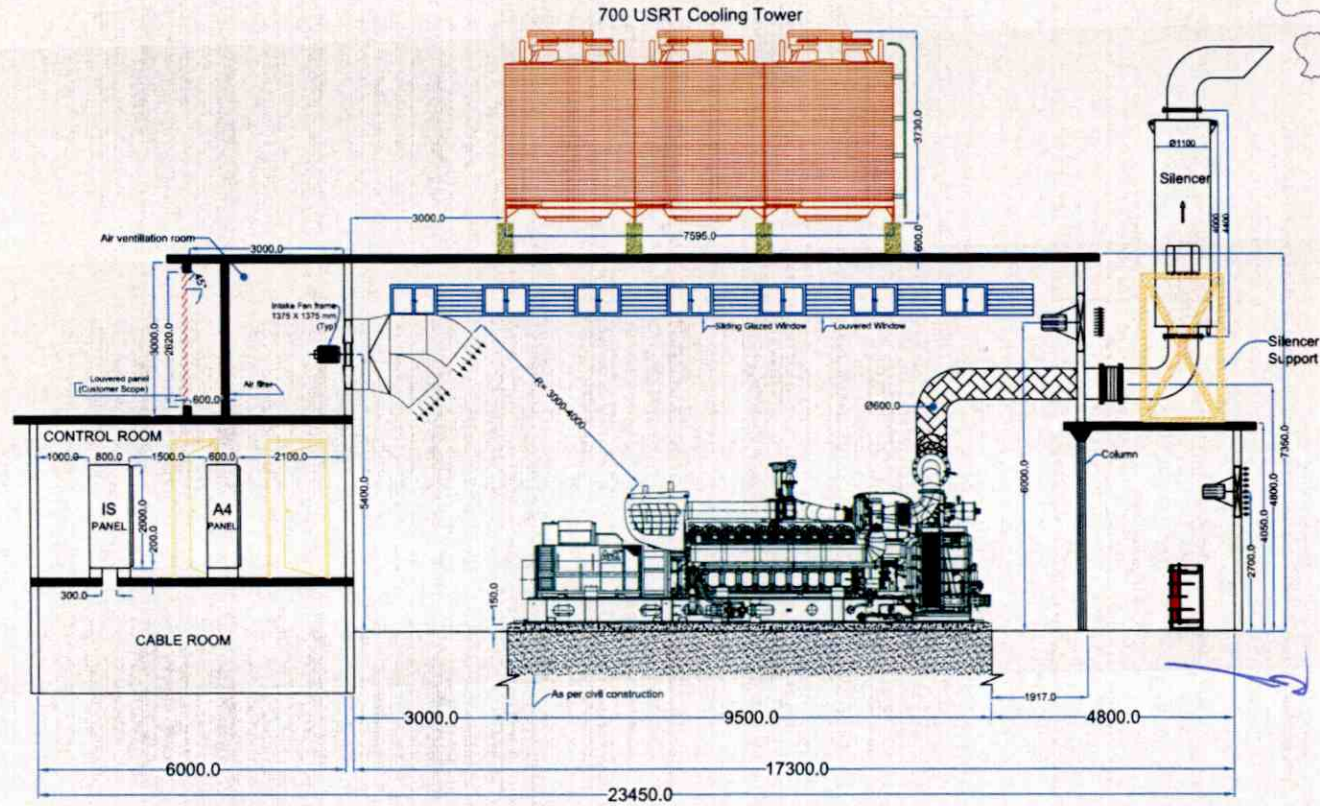


Plant Location



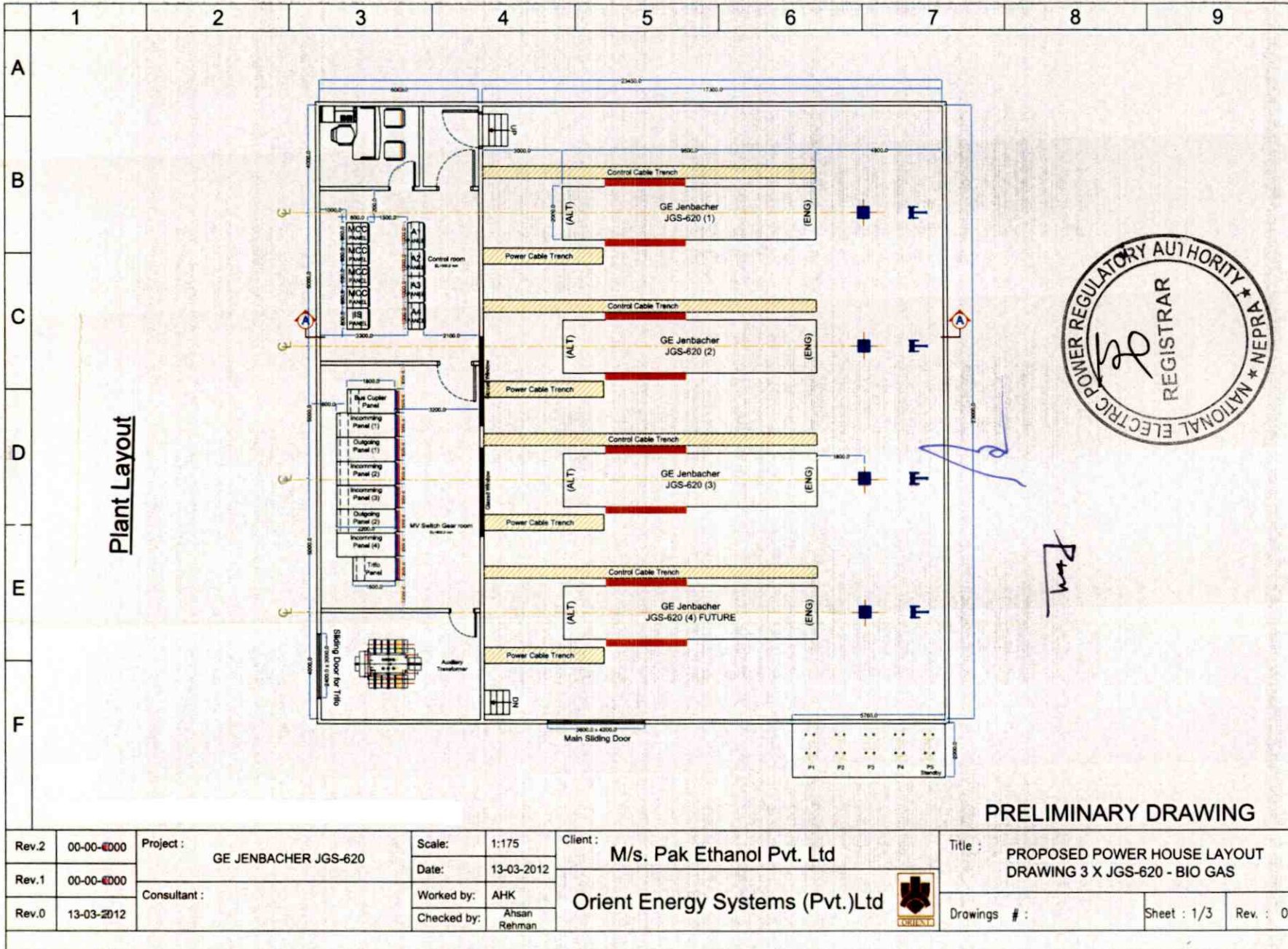
SITE PLAN
PAK ETHANOL (PVT) LTD.

Sectional View of the Generation Facility

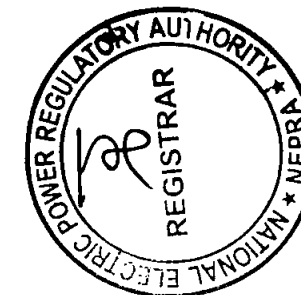
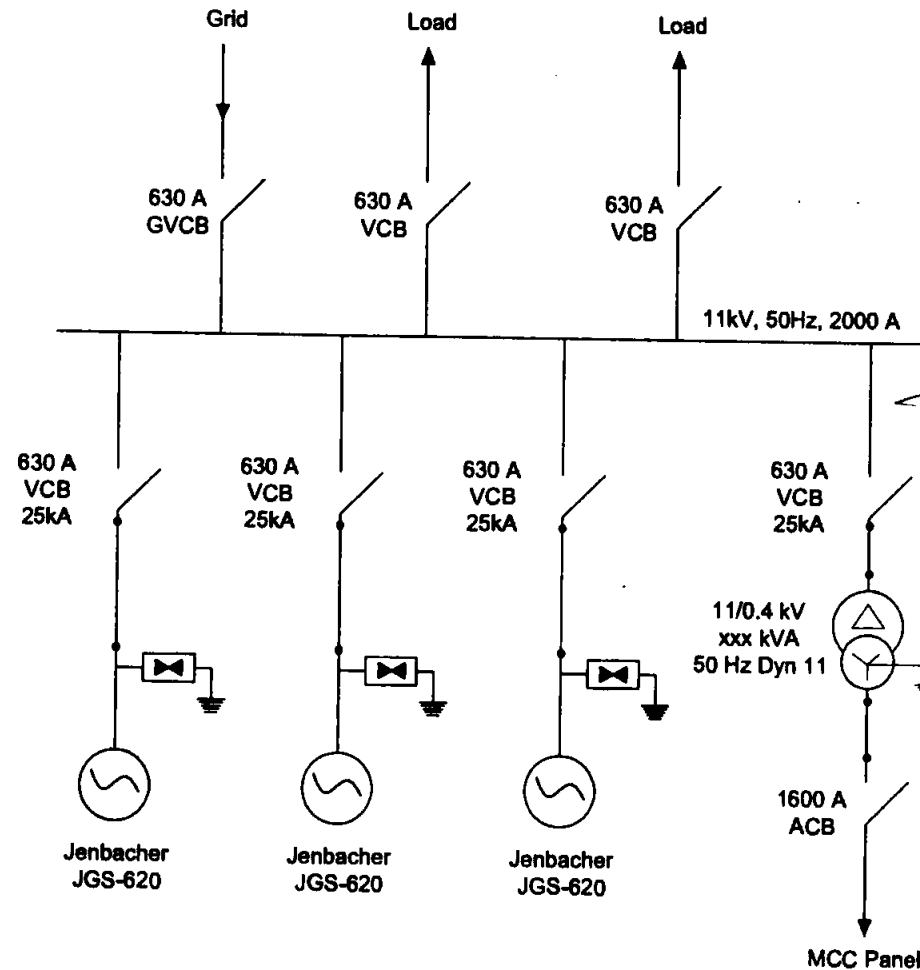


PRELIMINARY DRAWING


Rev.2	00-00-0000	Project : GE JENBACHER JGS-620F	Scale:	1:125	Client : M/s. Pak Ethanol Pvt. Ltd	Title : PROPOSED POWER HOUSE SECTIONAL VIEW A-A	Drawings # :	Sheet : 2/3	Rev. : 0
Rev.1	00-00-0000		Date:	13-03-2012					
Rev.0	13-03-2012	Consultant :	Worked by:	AHK	Orient Energy Systems (Pvt.)Ltd				
			Checked by:	Ahsan Rehman					



Single Line Diagram (Electrical)



PRELIMINARY DRAWING

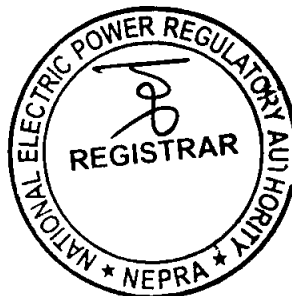
PRELIMINARY DRAWING									
Rev.2	00-00-0000	Project : GE JENBACHER JGS-620	Scale:		Client : M/s Pak Ethanol Pvt.Ltd.		Title : PROPOSED POWER HOUSE SINGLE LINE DIAGRAM 3 X JGS-620		
Rev.1	00-00-0000		Date:	13-03-2012					
Rev.0	13-03-2012	Consultant :	Worked by:	AHK	Orient Energy Systems (Pvt.)Ltd				
			Checked by:	Ahsan Rahman					
						Drawings # :	Sheet : 1/1	Rev. : 0	

INTERCONNECTION/TRANSMISSION
SCHEME FOR DISPERSAL OF POWER FROM
Pak Ethanol (Pvt.) Limited
(PEPL)

The Power generated from the Bio-Gas based Thermal generation facility of PEPL will be dispersed to the Load Center/Ring of HESCO at 11 KV voltage level.

The Interconnection/Transmission Arrangement for the above mentioned facilities will be at 11 kV voltage connecting the generation facility of PEPL to Matli Grid Station of HESCO through two overhead Feeders.

The final Interconnection and Transmission Arrangement(s) [including length of line, type of conductor etc.] for the dispersal of power, as agreed by PEPL and HESCO shall be communicated to NEPRA in due course of time.



Details of Generation Facility/ Power Plant*

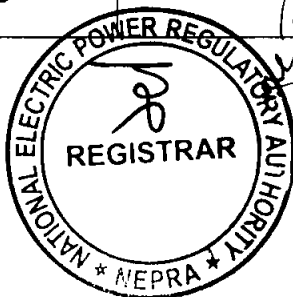
(A). General Information

(i).	Name of Applicant	Pak Ethanol (Pvt.) Limited
(ii).	Registered/ Business Office	1 st Floor, Block-3, Hockey Club of Pakistan Stadium, Liaquat Barracks, Karachi-75350
(iii).	Plant Location	Deh Jagsiyani, Taluka Matli, District Tando Muhammad Khan, Sindh.
(iv).	Type of Generation Facility	Co-Generation System

(B). Plant Configuration

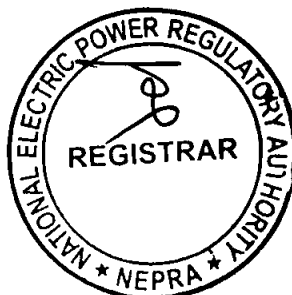
(i).	Plant Size Installed Capacity (Gross ISO)	9.132 MW
(ii).	Type of Technology	Reciprocating Gas Engines (Using Bio-Gas for Power Generation with Heat Recovery Steam Generators and Chillers)
(iii).	Number of Units/Size (MW)	3 x 3.044 MW Gas Engines
(iv).	Unit Make & Model	General Electric Jenbacher/JGS 620 GS
(v).	Commissioning /Commercial Operation Date (CoD)	February 15, 2013
(vi).	Minimum Expected Life of the Facility from Commissioning/ CoD	25 Years

* As provided by Pak Ethanol (Pvt.) Limited



(C). Fuel Details

(i).	Main/Primary Fuel	Biogas	
(ii).	Alternative/Back Up-Fuel	Not Applicable (N/A)	
(iii).	Start-Up Fuel	Same as Main/Primary fuel	
(iv).	Fuel Source (Imported/Indigenous)	Indigenous	
(v).	Fuel Supplier	Pak Ethanol (Pvt.) Limited	
(vi).	Supply Arrangement	Through Pipe lines from the Biogas Recovery Plant	
(vii).	Raw Material (Molasses) Generation Capacity	100,000 Tons/Year	
(viii).	Molasses Processing Capacity	100,000 Tons/Year	
(ix).	Molasses Storage Capacity	48,000 Tons	
(x).	No of Digesters	02	
(xi).	No of Spent Wash Ponds	01	
(xii).	No of Storage Tanks	Biogas	Spent wash
		03	01
(xiii).	Storage Capacity of each Tank	Biogas	Spent wash
		3000 m ³	4500 m ³
(xiv).	Gross Storage	Biogas	Spent wash
		9000 m ³	4500 m ³



(D). Emission Values (Main Fuel)

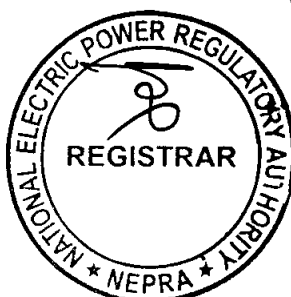
(i).	SO _x	0 mg/Nm ³
(ii).	NO _x	200 mg/Nm ³
(iii).	CO	500 mg/Nm ³
(iv).	PM ₁₀	10 mg/Nm ³

(E). Cooling System

(i).	Cooling Water Source/Cycle	Tube Wells installed at Site/Closed Loop
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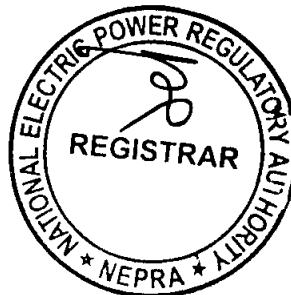
(F). Plant Characteristics

(i).	Generation Voltage	11 KV
(ii).	Frequency	50 Hz
(iii).	Power Factor	0.8 lagging
(iv).	Automatic Generation Control (AGC)	NA
(v).	Ramping Rate	9.8 KW/Sec
(vi).	Time required to Synchronize to Grid and loading the complex to full load.	131 Sec



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*

1.	Installed Capacity (Gross)	09.132 MW
2.	De-rated Capacity	09.132 MW
3.	Auxiliary Consumption	00.900 MW
4.	Net Capacity of the Plant at Mean Site Conditions	08.232 MW

Note

All the above figures are indicative as provided by the Licensee. The Net Capacity available to HESCO 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 Pak Ethanol (Pvt.) Limited

