



National Electric Power Regulatory Authority Islamic Republic of Pakistan

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No. NEPRA-R.DELAG-355 / 332-37

November 10, 2016

Mr. Abdul Waheed Qureshi
Resident Director
Shahtaj Sugar Mills Limited
72/C, M. M. Alam Road, Gulberg III,
Lahore.
Tel: +92-21-3231 2834

**Subject: Grant of Generation Licence No. IGSPL/72/2016
Licence Application No. LAG-355
Shahtaj Sugar Mills Limited (SSML)**

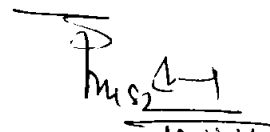
Reference: Your application vide letter No. nil, dated June 08, 2016 (received on June 10, 2016).

Enclosed please find herewith Determination of the Authority in the matter of Application of "Shahtaj Sugar Mills Limited (SSML)" for the "Grant of Generation Licence" along with Generation Licence No. IGSPL/72/2016 annexed to this determination granted by the National Electric Power Regulatory Authority (NEPRA) to SSML for its 32.0 MW Baggase based Co-Generation Facility located at Khewa Muhabbat Pur Road, District Mandi Bahauddin, in the province of 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/72/2016)**




(Syed Safer Hussain)
10.11.16

Copy to:

1. Chief Executive Officer, Alternative Energy Development Board (AEDB), 2nd Floor, OPF Building, G-5/2, Islamabad
2. Chief Executive Officer, NTDC, 414-WAPDA House, Lahore
3. Chief Executive Officer, CPPA-G, 6th Floor, Shaheed-e-Millat Secretariat, Jinnah Avenue, Blue Area, Islamabad
4. Chief Executive Officer, Gujranwala Electric Power Company Limited (GEPCO), 565/A, Model Town, G.T. Road, Gujranwala.
5. Director General, Environment Protection Department, Government of Punjab, National Hockey Stadium, Ferozepur Road, Lahore.

National Electric Power Regulatory Authority
(NEPRA)

Determination of the Authority
in the Matter of Application of Shahtaj Sugar Mills Limited for
the Grant of Generation Licence

November 08, 2016
Case No. LAG-355

(A). Background

(i). In order to harness the potential of Renewable Energy (RE), the Government of Pakistan (GoP) has set up Alternative Energy Development Board (AEDB) for development of RE resources in the country. AEDB has formulated "the Policy for Development of Renewable Energy for Power Generation 2006" (hereafter the RE Policy) for developing hydro, wind, solar, bagasse, biomass, waste-to-energy and bio-energy technologies. Under the RE Policy, a number of existing sugar mills have decided to set up high pressure bagasse based generation facilities/co-generation facilities.

(ii). In order to facilitate the development of bagasse based power generation in the country, the Authority announced an up-front tariff through its Determination No. NEPRA/R/TRF-UTB-2013/5152-5154, dated May 29, 2013 (the Up-Front Tariff). Further, AEDB issued Letter of Intent (LOI) to various entrepreneurs/power developers including Shahtaj Sugar Mills Limited (SSML) for setting up a bagasse based power project under the RE Policy.

(B). Filing of Generation Licence Application

✓
(i). In accordance with Section-15 of Regulation of Generation, Transmission and Distribution of Electric Power Act 1997 (hereafter referred to as the NEPRA Act), SSML filed an application on June 10, 2016 requesting for grant of a generation licence for its 32.0 MW bagasse based generation facility to be located at Khewa Muhabbat Pur road, near Kuthiala Syedan, 4-KM towards North-West side of District Mandi Bahauddin, in the province of Punjab.



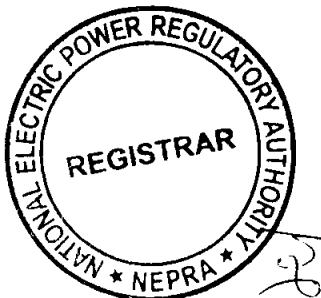
(ii). Registrar examined the submitted application and found that complete information has not been submitted in terms of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (hereafter referred to as the Licensing Regulations). In view of the above, Registrar required SSML for submitting the missing/required information/documents as stipulated in the Licensing Regulations. SSML submitted complete information/documentation on June 24, 2016.

(iii). On completion of the required information as required under the Licensing Regulations, Registrar submitted the application for consideration of the Authority. The Authority considered the matter in its regulatory meeting held on August 23, 2016 and found the form and content of the application in substantial compliance with Regulation-3 of the Licensing Regulations. Accordingly, the Authority admitted the application under Regulation-7 of the Licensing Regulations for consideration of grant of generation licence and approved the advertisement about the notice of admission containing (a). the prospectus of the company; and (b). a notice to the general public about the admission of the application of SSML to be published in daily newspapers, to invite the general public for their comments in the matter as stipulated in Regulation-8 of the Licensing Regulations. The Authority also approved the list of persons for inviting their comments to assist the Authority in the matter as stipulated in Regulation-9 of the Licensing Regulations.

(iv). Accordingly, notice of admission was published in one Urdu and one English national newspaper on August 26, 2016. Further, separate notices were also sent to government ministries and other organizations on August 29, 2016 to seek views/comments in the matter for the assistance of the Authority.

(C). Comments of Stakeholders

(i). The Authority received comments only from Ministry of Petroleum and Natural Resources. The salient points of the comments offered by the said stakeholder are summarized in the following paragraphs: -



(a). Ministry of Petroleum and Natural Resources commented that SSML intends to install bagasse based co-generation power plant and as such no gas is required for utilization in the project. Therefore, this ministry has no objections/comments to the grant of generation licence to SSML.

(ii). The above comments of stakeholder have been examined and the same are found to be supportive for grant of generation licence to SSML. In view of the said, it is considered appropriate to process the generation licence application of SSML expeditiously as stipulated in the Licensing Regulations and NEPRA Licensing (Generation) Rules, 2000 (hereafter referred to as the Licensing Generation Rules).

(D). Analysis of the Authority

(i). The Authority examined the entire case in details including the information provided by SSML along with the generation licence application.

(ii). The main features of the application under consideration are that applicant company i.e. SSML is a public limited company originally incorporated under the Companies Act 1913 vide KAR No. 1774 of 1964-1965 dated March 27, 1965 in the name of "Pasrur Sugar Mills Limited." The name of the company changed to Shahtaj Sugar Mills Limited on June 29, 1966. The Business Office of the company is 72/C-1, M.M. Alam Road, Gulberg-III Lahore. The Memorandum of Association of the company, inter alia, includes the business of power generation as one of its business objectives.

(iii). SSML is one of the group companies of the Shahnawaz group, which is a local conglomerate operating in diversified industries including automobile, sugar, textile, manufacturing, food and beverages, information technology etc. The major industrial concerns of the group include: Shahnawaz private limited, Shahtaj services private limited, Shahtaj textile limited, Shezan



international limited, Comstar, Shezan services private limited, Hattar food products, Nawazabad farms and Shahnawaz engineering private limited.

(iv). SSML is planning to install a new 32.00 MW bagasse based power plant to be located at Khewa Muhabbat Pur road, near Kuthiala Syedan, 4-KM towards North-West side of District Mandi Bahauddin, in the province of Punjab. According to the provided information, the proposed co-generation facility will be consisting of 2x16.00MW steam turbines (one extraction cum condensing and one back pressure) of HTC, China. The associated high pressure boiler 67 Bar/Cm² (135 TPH Capacity) is made of DESCON.

(v). The proposed co-generation/power plant of SSML will utilize the bagasse of its own sugar mill. Further, additional bagasse may also be purchased from the market to operate the co-generation facility during the crushing season and after that till the availability of the stock. The project can also use other bio-mass including cane trash, cotton stick, mustard straw and rice husk etc. in combination with bagasse or separately.

(vi). The Authority has observed that in accordance with the terms and conditions of the LOI, SSML has carried out interconnection study of the project through Power Planners International. The interconnection study covers Load Flow, Short Circuit and Transient & Stability Studies. Further, the interconnection study has been approved by NTDC and the concerned DISCO (i.e. GEPCO). According to the said interconnection study, the spillover power to the tune of 15 MW from SSML shall be dispersed to the load center of GEPCO at 132 KV level, through a 132 KV double circuit transmission line (measuring around 8.0 KM on Rail conductor) connecting the co-generation facility of SSML with 132 KV Mandi Bahauddin grid station of GEPCO.

(vii). The Authority has observed that the current electricity requirement of SSML (≈5.15 MW) during crushing season is met by the existing 11.00 MW low pressure system (23 bar @ 310 C°). Apart from the said, a B-3 connection from GEPCO serves as standby arrangement. With the setup of 32 MW co-



generation plant, SSML is expected to export approximately 15.85 MW and 9.50 MW of electricity to national grid during crushing and off season respectively under an Energy Purchase Agreement (EPA). The proposed project is expected to retain approximately 1.9 MW and 1.88 MW during crushing and off season respectively to meet its auxiliary consumption requirements.

(viii). Regarding the impact of the project on environment, the Authority is of the opinion that the proposed project is based on bagasse which is considered as a clean fuel. In this regard, SSML has carried out the required Initial Environmental Examination Study and submitted the same for the approval of the Environment Protection Department, Govt. of the Punjab. The Environment Protection Department, Govt. of the Punjab has already issued necessary approval for the project.

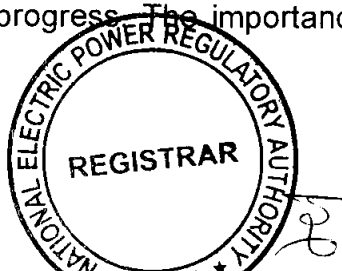
(ix). Regarding feasibility study of the project, it is observed that SSML has submitted a document titled feasibility study which fulfills the requirements of the Regulation-3(5)(h) of the Licensing Regulations.

(x). Regarding land of the project, the Authority has observed that SSML has 120 acres of land at Khewa Mohabbat Pur road near Kuthiala Syedan, 4-KM toward North-Western side from Mandi Bahauddin in the Province of Punjab. From the aforementioned land, about 65 acres have been allocated for the proposed bagasse based co-generation facility as shown in schedule-I of the licence.

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(xi). In view of the clarification and justifications given above, the Authority is of the considered view that the project of SSML fulfills the eligibility criteria for grant of generation licence as given under the NEPRA Act, rules and regulations for grant of generation licence.

(E). Grant of Generation Licence

(i). Energy is fundamental input to economic activity and thus to human welfare and progress. The importance of electricity in the development of the



economy of any country is beyond any doubt. The economic growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of electricity. 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 etc.). Increasing electricity consumption per capita can directly stimulate faster economic growth and indirectly achieve enhanced social development. In view of the said reasons, the Authority is of the considered opinion that for sustainable development all indigenous power generation resources including coal, hydel, wind, solar and other RE resources must be developed on priority basis in the public and private sector.

(ii). The existing energy mix of the country is heavily skewed towards the costlier thermal power plants, mainly operating on imported furnace oil. The import of furnace oil for electric power generation not only causes depletion of the precious foreign exchange reserves of the country but is also an environmental concern. Therefore, in order to achieve sustainable development it is imperative that indigenous RE resources are given priority for power generation and their development be encouraged. The Energy Security Action Plan 2005 (ESAP) of GoP, also recognizes this very aspect of power generation through RE and envisages that at least 5% of total national power generation capacity to be met through RE resources by 2030. The Authority considers that the proposed project of SSML is consistent with the provisions of ESAP. The project will help in diversifying the energy portfolio of the country. Further, it will not only enhance the energy security of the country by reducing the dependence on imported furnace oil but will also help reduction in carbon emission by generating clean electricity, thus improving the environment.

(iii). The term of a generation licence under the Rule-5(1) of the Licensing Generation Rules, is to commensurate with the maximum expected useful life of the units comprised in a generating facility. According to the international benchmarks available, the useful life of steam turbine is normally



taken at least thirty (30) years from its commercial operation date (COD). In view of the said, the Authority hereby sets the term of the generation licence of SSML for thirty (30) years from COD of the project.

(iv). Regarding tariff that SSML will charge from its power purchaser/CPPA-G, it is hereby clarified that under Section-7(3)(a) of the NEPRA Act, determining tariff, rate and charges etc. is the sole prerogative of the Authority. In view of the said, the Authority directs SSML to charge the power purchaser only such tariff which has been determined, approved or specified by the Authority.

(v). Regarding land of the project, the Authority directs SSML that the aforementioned land of the project shall be exclusively used for the proposed bagasse based co-generation power plant and SSML cannot carry out any other generation activity on this land except with prior approval of the Authority.

(vi). Regarding compliance with the environmental standards, the Authority directs SSML to ensure that the project will comply with the environmental standards during the term of the generation licence. In view of the said, the Authority has included a separate article along with other terms and conditions that the licensee will comply with relevant environmental standards. Further, the Authority also directs SSML to submit a report on a bi-annual basis, confirming that operation of its project is compliant with required environmental standards as prescribed by the concerned environmental protection agency.

✓
(vii). The proposed co-generation facility of SSML will use bagasse (i.e. a renewable resource) for generation of power and will achieve commercial operation by January 31, 2017 which is within the deadline of the Kyoto Protocol. Under the Kyoto Protocol, projects coming into operation up to the year 2020 qualify for the carbon credits therefore, the project of SSML may qualify for the carbon credits under the said Protocol. In view of the said, the Authority directs SSML to initiate the process in this regard at the earliest so




that proceeds for the carbon credits are materialized. SSML shall be required to share the proceeds of the carbon credits with the power purchaser as stipulated in Article-12 of its generation licence.

In view of the above, the Authority hereby decides to approve the grant of generation licence to SSML on the terms set out in the generation licence annexed to this determination. The grant of generation licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed there under and the other Applicable Documents.


Authority

Maj. (R) Haroon Rashid
(Member)



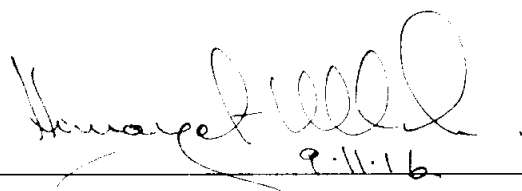
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Syed Masood-ul-Hassan Naqvi
(Member)



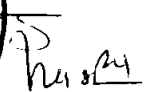
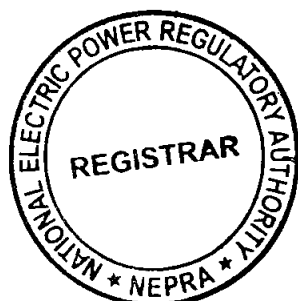
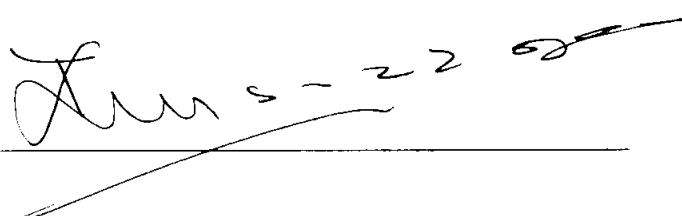
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Himayat Ullah Khan
(Member/Vice Chairman)



9.11.16

Tariq Saddozai
(Chairman)



10.11.15

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

GENERATION LICENCE

No. IGSPL/72/2016

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:

SHAHTAJ SUGAR MILLS LIMITED

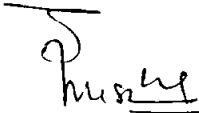
Incorporated under the Companies under the Companies Act 1913
vide KAR No. 1774 of 1964-1965 dated March 27, 1965

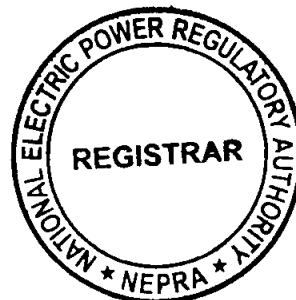
**for its Bagasse based Co-Generation Facility Located at Khewa
Muhabbat Pur Road, District Mandi Bahauddin, in the Province of
Punjab**

(Installed Capacity: 32.0 MW Gross ISO)

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

Given under my hand this on 10th day of November Two
Thousand & Sixteen and expires on 30th day of January Two
Thousand & Forty Seven.

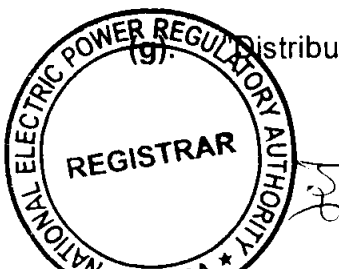

10.11.16
Registrar



Article-1
Definitions

1.1 In this Licence

- (a). "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997;
- (b). "Applicable Documents" mean the Act, the NEPRA rules and regulations, any documents or instruments issued or determinations made by the Authority under any of the foregoing or pursuant to the exercise of its powers under the Act, the grid code, the applicable distribution code, if any, or the documents or instruments made by the licensee pursuant to its generation licence, in each case of a binding nature applicable to the licensee or, where applicable, to its affiliates and to which the licensee or any of its affiliates may be subject;
- (c). "Authority" means the National Electric Power Regulatory Authority constituted under Section-3 of the Act;
- (d). "Bus Bar" means a system of conductors in the co-generation facility of the Licensee on which the electric power is collected for supplying to the Power Purchaser;
- (e). "Commercial Operations Date (COD)" means the Day immediately following the date on which the co-generation facility of the Licensee is Commissioned;
- (f). "CPPA-G" means Central Power Purchasing Agency (Guarantee) Limited or any other entity created for the like purpose;



"Distribution Code" means the distribution code prepared by XW-

DISCO(s) and approved by the Authority, as it may be revised from time to time with necessary approval of the Authority;

- (h). "Energy Purchase Agreement" means the energy purchase agreement, entered or to be entered into by and between the Power Purchaser and the Licensee, for the purchase and sale of electric energy generated by the co-generation facility, as may be amended by the parties thereto from time to time;
- (i). "Financing Documents" will have the same meaning as defined in the respective implementation agreements to be signed by the Licensee for its co-generation facility;
- (j). "GEPCO" means Gujranwala Electric Power Company Limited and its successors and permitted assigns;
- (k). "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 necessary approval by the Authority;
- (l). "Licensee" means **Shahtaj Sugar Mills Limited** and its successors and permitted assigns;
- (m). "NTDC" means National Transmission and Despatch Company Limited and its successors and permitted assigns;
- (n). "Policy" means the Policy for Development of Renewable Energy for Power Generation, 2006 of Government of Pakistan as amended from time to time;

- (o). "Power Purchaser" means CPPA-G on behalf of XW-DISCOs or any XW-DISCO which purchases electricity from the Licensee, pursuant



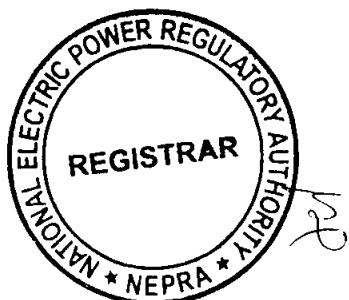
to a Energy Purchase Agreement (EPA) for procurement of electricity;

- (p). "Project Agreements" will have the same meaning as will be defined in the respective Implementation Agreements to be signed by the Licensee for its co-generation facility;
- (q). "Security Documents" means relevant standard security package agreements and documents including Letter of Support (LOS), implementation agreement and Energy Purchase Agreement (EPA) to be executed by the Licensee for its co-generation facility;
- (r). "Regulations" mean the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999 as amended or replaced from time to time;
- (s). "Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000; and
- (t). "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 rules and regulations issued under the Act.

Article-2 Applicability of Law

This Licence is issued subject to the provisions of the Applicable Law, 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 co-generation facility of the Licensee are set out in Schedule-I to this Licence.

3.2 The net capacity of the Licensee's co-generation facility 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 co-generation facility before its commissioning.

Article-4
Term of Licence

4.1 This Licence is granted for a term of thirty (30) years after the Commercial Operation Date of the co-generation facility of the Licensee.

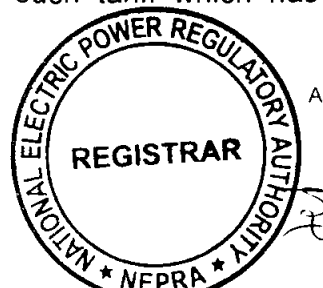
4.2 Unless suspended or revoked earlier, the Licensee may within ninety days (90) days prior to the expiry of the term of the Licence, apply for renewal of the Licence under the Regulations, as amended or replaced from time to time.

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 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.



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

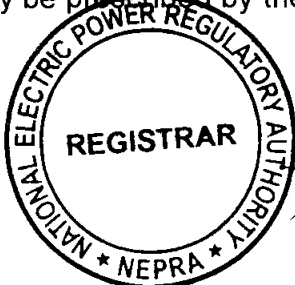
For the purpose of sub-rule (1) of Rule-19 of the Rules, copies of records and data shall be retained in standard and electronic form and all such records and data shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

Article-9
Compliance with Performance Standards

✓ The Licensee shall comply with the relevant provisions of the National Electric Power Regulatory Authority Performance (Generation) Rules 2009 as amended from time to time.

Article-10
Compliance with Environmental & Safety Standards

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



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.

Article-12
Emissions Trading/Carbon Credits

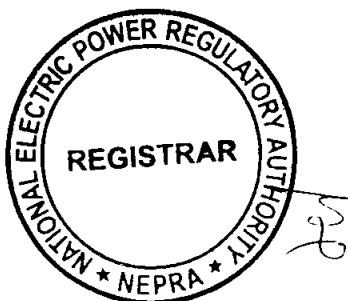
The Licensee shall process and obtain emissions/carbon credits expeditiously and share the proceeds with to the power purchaser, as per the Policy.

Article-13
Power off take Point and Voltage

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

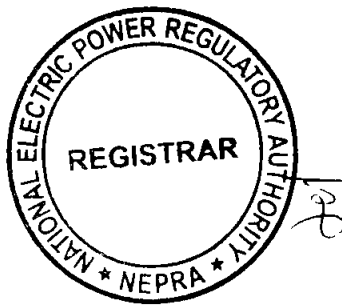
Article-14
Design & Manufacturing Standards

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



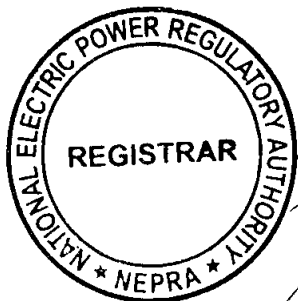
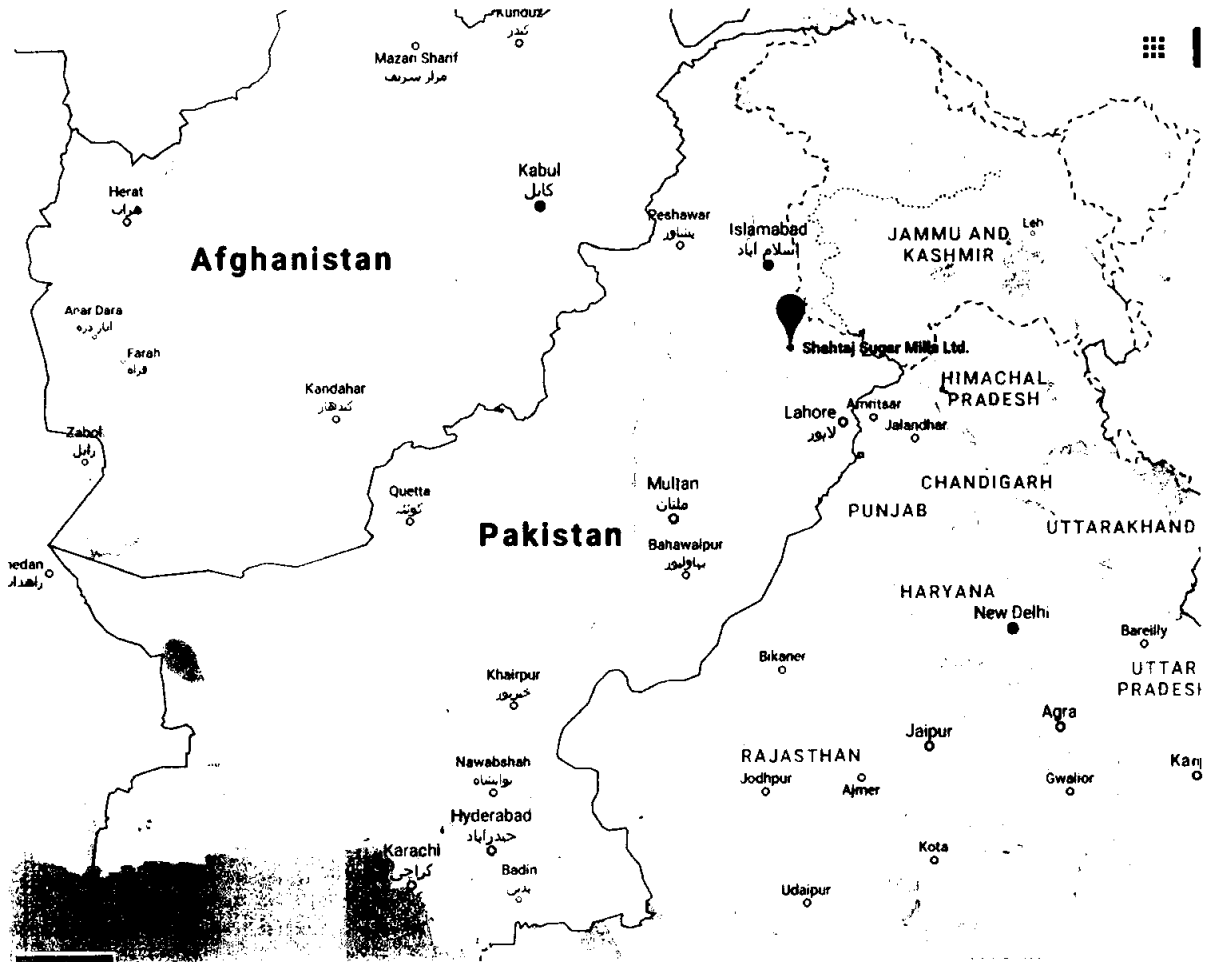
SCHEDULE-I

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.



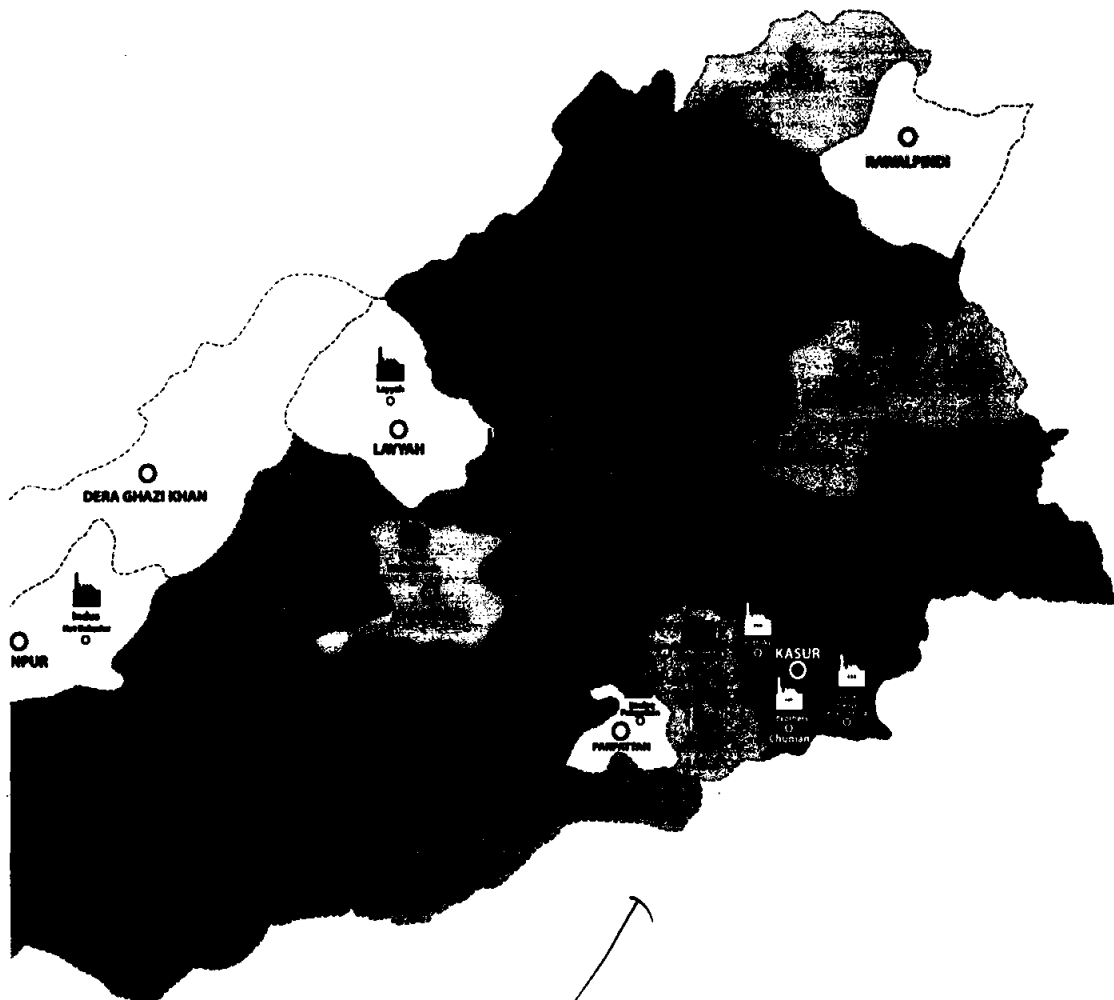
Generation Licence
Shahtaj Sugar Mills Limited
at Khewa Muhabbat Pur Road
District Mandi Bahauddin
in the Province of Punjab

Site Location of the
Co-Generation Facility/Thermal Power Plant of
Shahtaj Sugar Mills Limited (SSML)



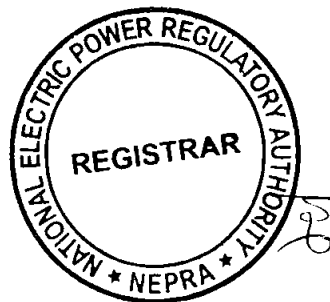
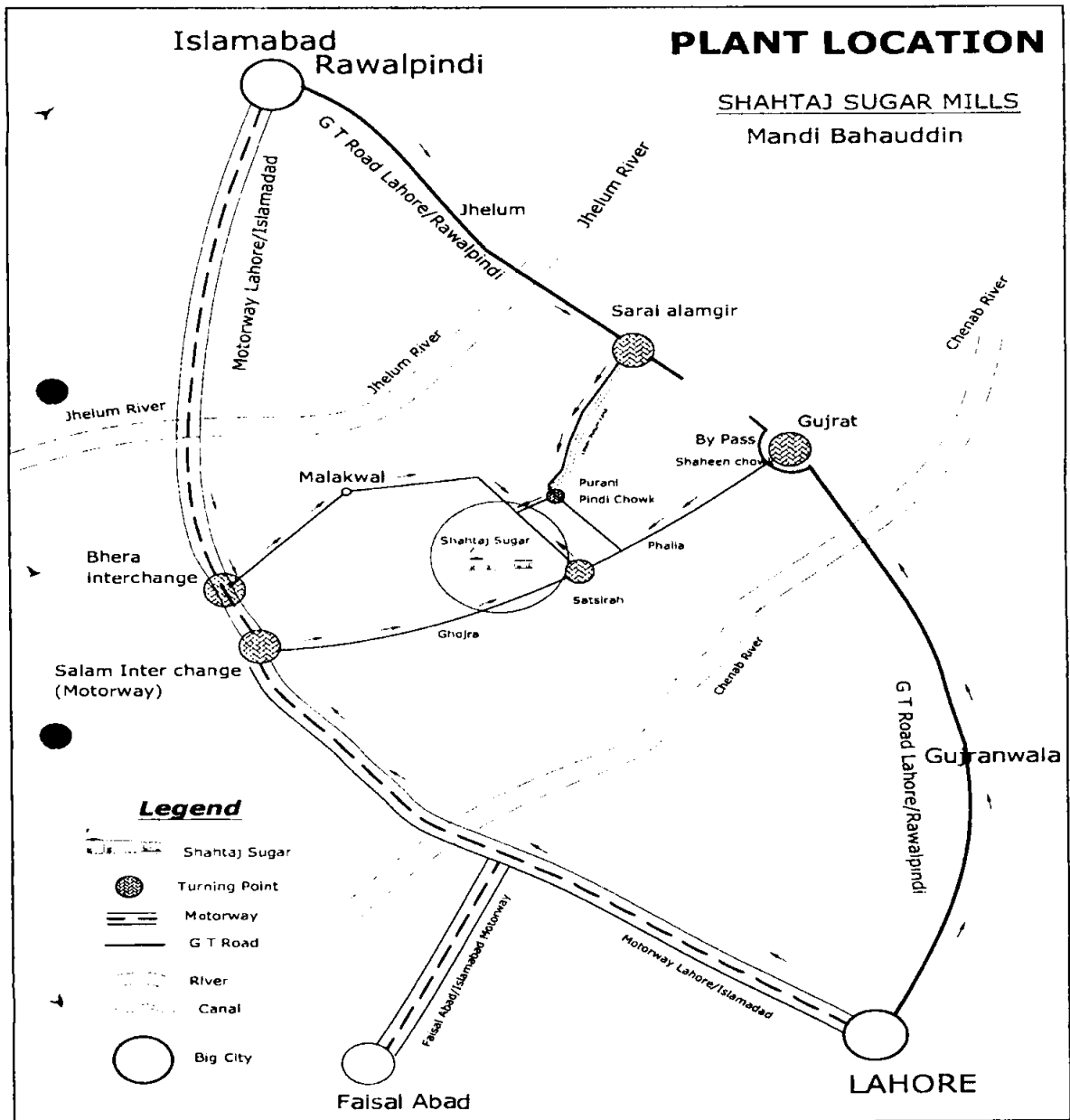
Generation Licence
Shahtaj Sugar Mills Limited
at Khewa Muhabbat Pur Road
District Mandi Bahauddin
in the Province of Punjab

Site Map of the
Co-Generation Facility/Thermal Power Plant of SSML



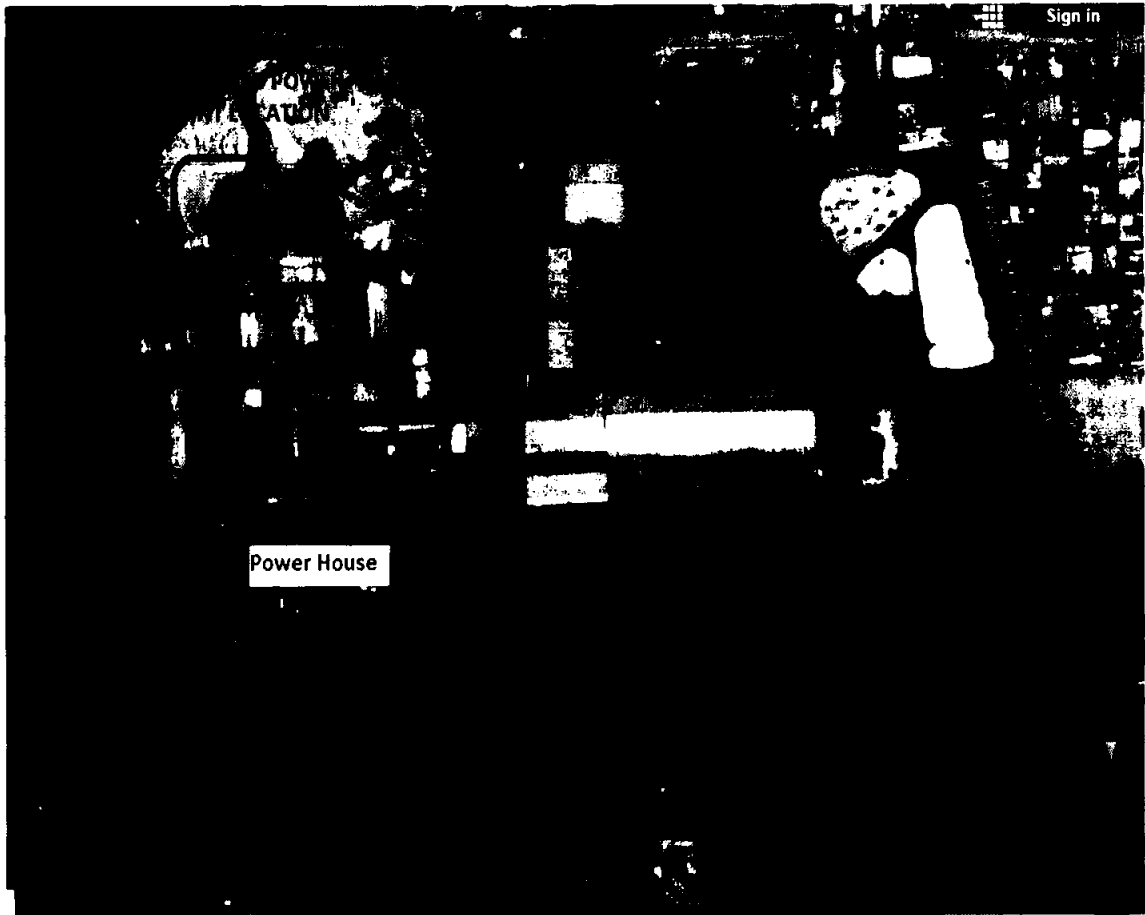
Generation Licence
 Shahtaj Sugar Mills Limited
 at Khewa Muhabbat Pur Road
 District Mandi Bahauddin
 in the Province of Punjab

Site Map of the Co-Generation Facility/Thermal Power Plant of SSML



Generation Licence
Shahtaj Sugar Mills Limited
at Khewa Muhabbat Pur Road
District Mandi Bahauddin
in the Province of Punjab

Land Coordinates of the
Co-Generation Facility/Thermal Power Plant of SSML



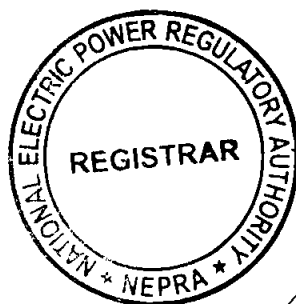
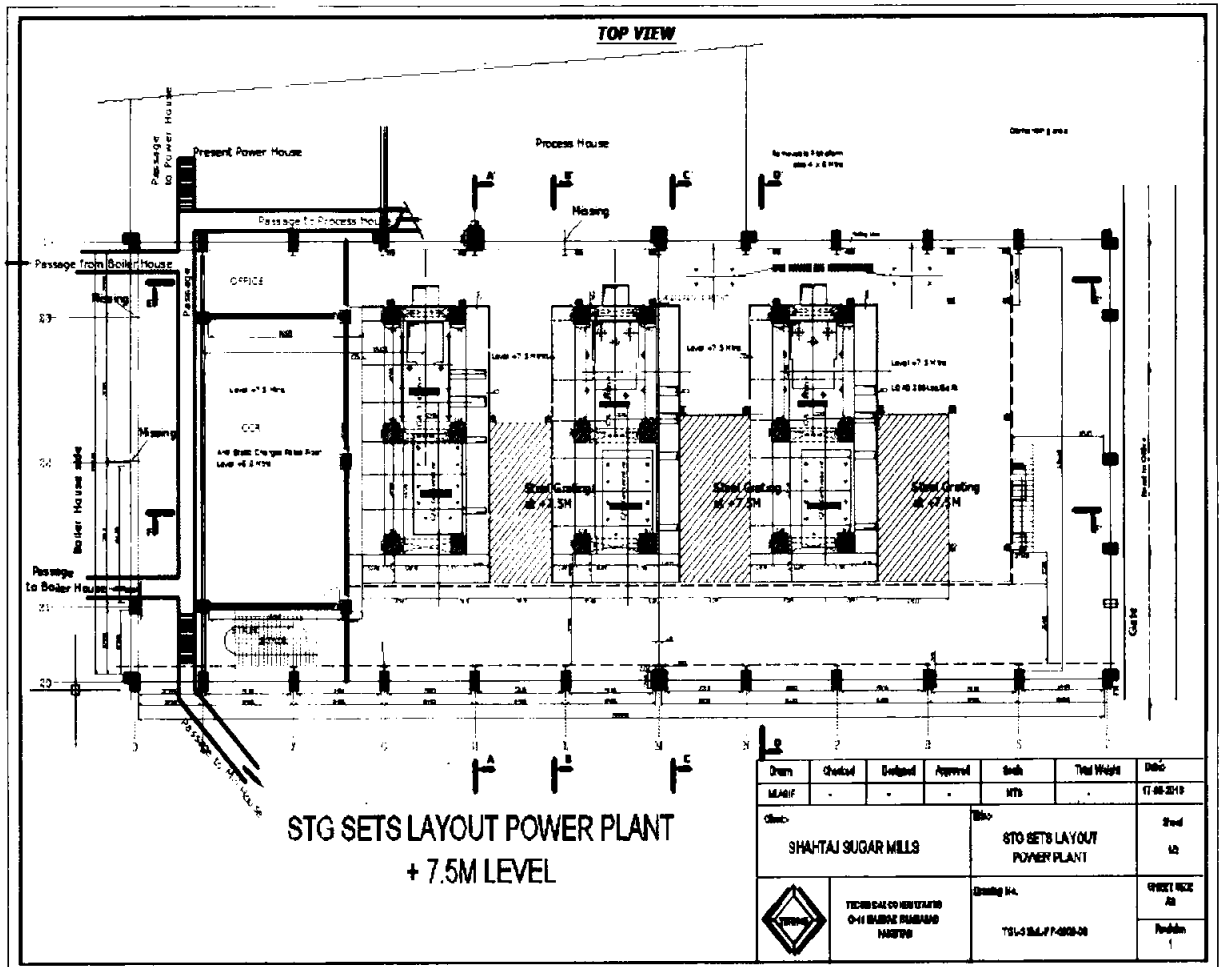
Total Land: 120 Acres

Boundry	Latitude	Longitude
North – East	32.590786 °	73.457148 °
South - East	32.586593 °	73.458657 °
South - West	32.586637 °	73.448812 °
North - West	32.590779 °	73.448751 °

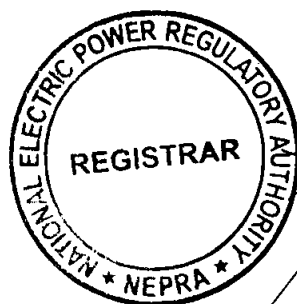


Generation Licence
 Shahtaj Sugar Mills Limited
 at Khewa Muhabbat Pur Road
 District Mandi Bahauddin
 in the Province of Punjab

Layout of the Co-Generation Facility/Thermal Power Plant of SSML



Single Line Diagram (Electrical) of the Co-Generation Facility/Thermal Power Plant of SSML



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

The 15 MW spillover electric power from the bagasse based co-generation facility/thermal power plant of Shahtaj Sugar Mills Limited (SSML) will be supplied to the load center of GEPCO.

(2). The interconnection facilities/transmission arrangements for supplying power from co-generation facility/thermal power plant of SSML shall be at 132 kV level, consisting of a 132 kV double circuit transmission line (measuring around 8.0 KM on Rail conductor) connecting the co-generation facility/thermal power plant of SSML with the system of GEPCO.

(3). Any change in the above mentioned interconnection facilities/transmission arrangements for dispersal of power as agreed by the licensee, power purchaser and GEPCO shall be communicated to the Authority in due course of time.



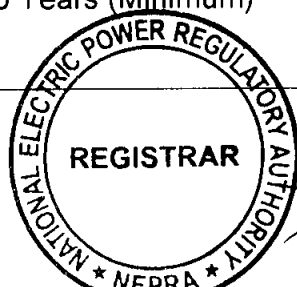
Detail of Generation Facility/Co-Generation Power Plant of SSML

(A). General Information

(i).	Name of Applicant	Shahtaj Sugar Mills Limited
(ii).	Registered /Business Office	Registered Office is situated at 19 Dock Yard Road, West Wharf, Karachi 74000 with its head office at 72-C-I, M.M. Alam Road, Gulberg-III, Lahore
(iii).	Plant Location	Shahtaj Sugar Mills Limited situated at Khewa Mohabbat pur road near Kuthiala Syedan 4 K.M North – Western side from District Mandi Bahauddin, in the Province of Punjab
(iv).	Type of Generation Facility	Bagasse based, high-pressure co-generation facility/thermal power plant.

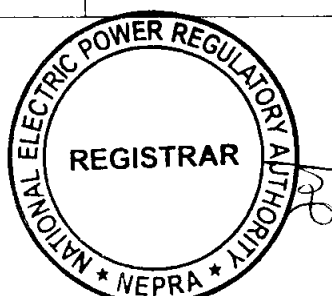
(B). Plant Configuration

(i).	Plant Size Installed Capacity	32.00 MW.	
(ii).	Type of Technology	Conventional steam turbine based power plant (1x16 MW extraction cum condensing Steam Turbine +1x16 MW back pressure steam turbine) with 67 bar (kg/cm ²) boiler.	
(iii).	Number of Units/Size (MW)	Steam Turbine	2 x 16 MW
(iv).	Unit Make/Model/Type & Year of Manufacture Etc.	Steam Turbine	HTC China/2016
		Boiler	DESCON/2016
(v).	Commercial Operation Date of the Generation Facility (Anticipated)	January 31, 2017	
(vi).	Expected Useful Life of the Generation Facility from Commercial Operation Date	30 Years (Minimum)	



(C). Fuel/Raw Material Details

(i).	Primary Fuel	Bagasse	
(ii).	Alternate Fuel	Other Biomass	
(iii).	Fuel Source (Imported/Indigenous)	Primary Fuel	Alternate Fuel
		Indigenous	Indigenous
(iv).	Fuel Supplier	Primary Fuel	Alternate Fuel
		Shahtaj Sugar Mills Limited	biomass suppliers (if available in the nearby area)
(v).	Supply Arrangement	Primary Fuel	Alternate Fuel
		Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc.	Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc.
(vi).	Sugarcane Crushing Capacity	10,000 Ton per day	
(vii).	Bagasse Generation Capacity	2,900 Ton per day	
(viii).	Fuel Storage facilities	Primary Fuel	Alternate Fuel
		Bulk Storage	Bulk Storage
(ix).	Capacity of Storage facilities	Primary Fuel	Alternate Fuel
		60,000 ton bulk storage	Included as part of the primary fuel storage
(x).	Gross Storage Capacity	Primary Fuel	Alternate Fuel
		60,000 ton bulk storage	Included as part of the primary fuel storage



(D). Emission Values

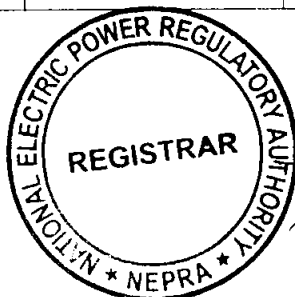
		Primary Fuel
(i).	SO _x (mg/Nm ³)	11.3
(ii).	NO _x (mg/Nm ³)	149.8
(iii).	CO (mg/Nm ³)	350
(iv).	PM ₁₀ (mg/Nm ³)	200.5

(E). Cooling System

(i).	Cooling Water Source/Cycle	Deep well Turbine Pump/ Underground Water/ Closed Loop
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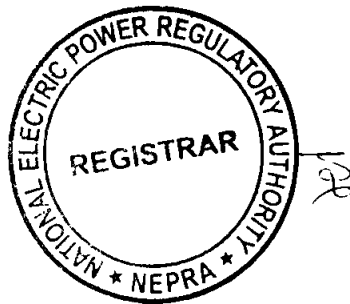
(F). Plant Characteristics

(i).	Generation Voltage	11.00 KV	
(ii).	Frequency	50 Hz	
(iii).	Power Factor	0.80 lagging - 0.95 leading	
(iv).	Automatic Generation Control (AGC)	Yes	
(v).	Ramping Rate	as per requirement of Grid Code	
(vi).	Time required to Synchronize to Grid	During cold start	150 minutes
		During warm start	90 minutes
		During Hot start	60 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 are given in this Schedule



SCHEDULE-II

		<u>Season Operation</u>	<u>Off-Season Operation</u>
(1).	Total Gross Installed Capacity	32 MW	32 MW
(2).	De-rated Capacity at Mean Site Conditions	22.90 MW	11.40 MW
(3).	Auxiliary Consumption	1.90 MW	1.88 MW
(4).	Net Capacity of the Plant at Mean Site Conditions	21 MW	9.52 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/bi-lateral agreement or any other applicable document(s).

