National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

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

No. NEPRA/R/LAG-266/12482-87 October 02, 2014

Mr. Adnan Zubair Janjua
Chief Financial Officer
Alliance Sugar Mills (Pvt.) Limited
3-B, Nisar Colony,
Lahore Cantt.

Subject: **Generation Licence No. IGSPL/46/2014**
Licence Application No. LAG-266
Alliance Sugar Mills (Private) Limited (ASMPL)

Reference: Your letter No. ASML/HO/2014/176 dated 26.05.2014.

Enclosed please find herewith Determination of the Authority in the matter of Generation Licence Application of ASMPL along with Generation Licence No. IGSPL/46/2014 annexed to this determination granted by the National Electric Power Regulatory Authority to ASMPL for its 30.00 MW Baggasse based generation facility/co-generation power plant located at KLP Road, Rahseedabad, Tehsil Ubauro, District Ghotki, Sindh, 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/46/2014)**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY ★ NEPRA ★ REGISTRAR

02/10/14
(Naweed Illahi Sheikh)

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 Operating Officer, CPPA, 107-WAPDA House, Lahore
4. Chief Executive Officer, Sukkur Electric Power Company (SEPCO), SEPCO Headquarter, Old Thermal Power Station, Sukkur
5. Director General, Pakistan Environmental Protection Agency, Plot No. 41, Street No. 6, H-8/2, Islamabad.

National Electric Power Regulatory Authority (NEPRA)

Determination of the Authority in the Matter of Generation Licence Application of Alliance Sugar Mills (Private) Limited

September 23, 2014
Application No. LAG-266

(A). Background

(i). Government of Pakistan (GoP) has set up Alternative Energy Development Board (AEDB) for development of Renewable Energy (RE) resources in the Country. Further, GoP through AEDB formulated "the Policy for Development of Renewable Energy for Power Generation 2006" (hereafter the Policy) for the development of Small Hydro, Wind, and Solar Technologies.

(ii). Later on, the GoP amended the scope of the Policy to include Power Projects based on Bagasse, Bio-Mass, Waste-to-Energy and Bio-Energy, using High-Pressure (minimum 60 bar) Boiler Technology. Further, GoP also extended the applicability of the Policy to be continued for an additional five years w.e.f. March 06, 2013. In accordance with the said amendments, AEDB has issued Letter of Intent (LoI) to different entrepreneurs/ Power Developers including Alliance Sugar Mills (Private) Limited (ASMPL), for setting up a Bagasse based Power Project at KLP Road, Rasheedabad, Tehsil Ubauro, District Ghotki, in the Province of Sindh on Fast Track Basis.

(iii). According to the terms and conditions of the LoI and being a Fast Track Project, sponsors of the project were not required to carry out any Feasibility Study (FS) for the project but were directed to approach NEPRA for issuance of Generation Licence and acceptance of the Authority determined Up-front Tariff.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY ★ NEPRA ★ REGISTRAR

(B). Filing of Generation Licence Application

(i). ASMPL in accordance with the Section 15 of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the NEPRA Act), filed an application on May 28, 2014 requesting for grant of a Generation Licence. Registrar examined the submitted application and found the same non-compliant with the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 ("the Regulations").

(ii). In view of the above, Registrar directed ASMPL for submitting the missing required information/documents as stipulated in the Regulations. ASMPL completed the submission of required information/documentation on June 19, 2014. After completion of the required information as required under the Regulations, the Authority admitted the application under Regulation 7 of the Regulations on July 11, 2014 for consideration of grant of a Generation Licence. The Authority approved the draft of the Notice of Admission (NoA) to be published in daily newspapers, for informing and seeking comments of the general public as stipulated in Regulation 8 of the Regulations. The Authority also approved the list of interested/affected parties for inviting comments for assisting the Authority in the matter as stipulated in Regulation 9 (2) of the Regulations.

(iii). Accordingly, NoA was published in one Urdu and one English National Newspaper on July 17-18, 2014. Further, separate notices were also sent to Individual Experts/Government Ministries/Representative Organizations etc. on July 21, 2014 for submitting their views/comments in the matter for the assistance of the Authority.

(C). Comments of Stakeholders

(i). In reply to the above, the Authority received comments from five (05) stakeholders. This included The Sukkur Chamber of Commerce & Industry (TSCoC&I), Gresham's Eastern (Private) Limited (GEPL), Central Power

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR NEPRA

Purchasing Agency (CPPA) of National Transmission & Despatch Company Limited (NTDC) and Board of Investment (BoI) and Ministry of Water and Power (MoW&P).

(ii). The salient points of the comments offered by the said stakeholder are summarized in the following paragraphs: -

(a). TSCoC&I expressed its liking for the project and expressed its no objection for the grant of Generation Licence to ASMPL;

(b). GEPL submitted that all the Sugar Mills are setting up electric power generation projects using Bagasse which has moisture content of 51%. The Sugar Mills intend to Co-Fire with coal or use coal after Bagasse is finished. Tentatively, Bagasse is available for four (04) months and after which coal would be used. For a 25 MW_e plant, the coal usage would be about Rs.90.00 crores per year. The Coal Plant operation would definitely require an Environmental Impact Assessment (EIA) report from Internationally reputed Consultants approved by UN bodies/public hearing and consequent approval by respective provincial EPA as well as Ministry of Climate Control, Pakistan. There is a Carbon Tax on fossil fuel generation imposed by UN. The CAPEX price for Coal/Bagasse boiler is higher as it will be Circulating Fluidized Bed (CFB) Technology. On the other hand, if the Sugar Mills use Bagasse at less than 10% moisture, they may have fuel for 320-330 days/year and the entire power generation will be "GREEN" escaping any UN Carbon Tax. The Boiler will be a simple boiler with much lower CAPEX cost. For any day requiring Coal operation, Liquid Coal can be used in same boiler which is Clean Coal Technology. GEPL suggested that an urgent meeting may be set up between EDB/NEPRA/AEDB manufacturers as there is a great risk of white elephants being established in the sugar imports over a 10 year period, UN Carbon Tax, all of which will be passed on to the poor an unwary Pakistani. Definitely, NEPRA will be

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

approached to revise Tariff's or the Power will be shut-off. At this moment, vested suppliers are pushing their own agenda with Sugar Mill owners who may not be aware of the whole picture and Pakistan will be the loser ultimately. In the National interest, the aspect of Bagasse power generation must be discussed in an open forum with all stake holders and decisions taken in the national interest; and

(c). CPPA appreciated the proposal of ASMPL for setting up the Bagasse based Generation Facility using indigenous fuel which shall be generating power during non-gas and non-hydel period of the year. CPPA commented that the project will be beneficial to the customers as well as society at large. CPPA expressed its no reservation and supported the request of ASMPL for the grant of Generation License subject to meeting of all conditions laid down in the NEPRA Licensing (Generation) Rule, 2000 (the Rules);

(d). BoI commented that to tap alternate sources for generation of electric power is dire need of the country as it will decrease the shortfall of electricity in the country. Therefore, the grant of Generation Licence to ASMPL is supported subject to fulfillment of all codal and technical formalities; and

(e). MoW&P remarked that the Authority may process the Generation Licence application of ASMPL as per provisions of the NEPRA Act/rules and policy guidelines of the Government.

(iii). The Authority considered the above comments of the stakeholders and generally found the same supportive except to the observations of GEPL that the proposed Generation Facility will be using coal thus causing pollution and other related issues. In view of the said, the Authority considered it appropriate seeking prospective of ASMPL on the comments of GEPL through a rejoinder in the matter.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

(iv). In its rejoinder, ASMPL confirmed that the project is being set up under the Policy which envisages the use of Bagasse as the Main Fuel or any other suitable Bio-Mass material if the same is available in the nearby area. ASMPL clarified that at no time the Project would be utilizing Coal for its operations therefore, the apprehensions of GEPL of UN sanctions and increase in cost were not relevant. ASMPL clarified that the project was in advance stage of Implementation and EPC Contract had already been executed. Therefore, it is not possible to reconsider the design parameters of the Project now.

(v). The Authority deliberated the comments of the stakeholders and the rejoinder of ASMPL on the observations of GEPL. The Authority found the submission of ASMPL in line with the provisions of the Policy which envisage operation on Bio-Mass only as confirmed by ASMPL. In view of the said, the Authority considered it appropriate to process the Generation Licence application of ASMPL as stipulated in the Regulations and the Rules.

(D). 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. 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 continuously increasing trend in fuel prices is not only creating pressure on 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

development is 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 (i.e. 9700 MW) to be met through RE resources by 2030. The Authority considers that the proposed project of ASMPL 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). ASMPL is setting up the proposed Co-Generation Facility/Generation Facility/Thermal Power Plant at KLP Road, Rasheedabad, Tehsil Ubauro, District Ghotki, in the Province of Sindh. The proposed Generation Facility will have a Total Installed Capacity of 30.00MW consisting 1 x 15.00 MW Back Pressure Steam Turbine and the other 1 x 15.00 MW Condensing Cum Extraction Steam Turbine. The proposed Generation Facility will be utilizing Bagasse (from its own Sugar Mill) as the sole fuel. ASMPL has confirmed that during the Crushing Season, both the Back Pressure and Condensing Cum Extraction Steam Turbines will remain in operation and it will be supplying around 19.00 MW to the National Grid after meeting its captive energy requirements. Whereas, during the Off-Season, only Condensing Cum Extraction Steam Turbine will be operated and will be providing upto a maximum of 12.20 MW (Max) of Electric Power to National Grid.

(iv). ASMPL has informed that in terms conditions of the LoI, it carried out an Interconnection and System Stability Study for dispersal of electric power from the above mentioned Co-Generation Facility/Generation Facility/Thermal Power Plant. According to the said study carried out by Planner Power International U.K. the dispersal/interconnection arrangement will be consisting of 132 KV Double Circuit (D/C) Transmission Line (on ACSR LYNX Conductor) measuring about seven (07) Kilometer connecting the generation facility/co-generation power plant with 132 KV Dharki Grid Station. The study confirmed that proposed Steam Turbines will be in conformity with the required stability and reliability standards of NTDC as stipulated in the Grid Code. The Authority has observed that although

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

ASMPL submitted the study with NTDC however, approval of the same from the Planning Department of NTDC is still awaited. Therefore, the Authority directs ASMPL for taking up the matter with NTDC for expediting the approval of the said study within three (03) months of this Determination.

(v). The Term of a Generation Licence under the Rules is to be commensurate with the maximum expected useful life of the units comprised in a generating facility. ASMPL has confirmed that its proposed Generation Facility consisting of two (02) Steam Turbines will be achieving the Commercial Operation Date (COD) on December 31, 2015 and will have a useful life of more than thirty (30) years from its COD. In this regard, ASMPL has requested that the term of its proposed Generation Licence may be fixed to thirty (30) years in consistent with the term of the proposed Energy Purchase Agreement (EPA) to be signed with Power Purchaser. The Authority considers that information provided by ASMPL about the useful life of the Steam Turbine and its subsequent request of CPL to fix the term of the Generation Licence is rational. Therefore, the Authority sets the term of the Generation Licence to thirty (30) years from COD of the Co-Generation/Generation Facility.

(vi). Regarding the Tariff of the Generation Facility/Co-Generation Facility, ASMPL intends unconditionally accepting the Up-Front Tariff in terms of the Determination of the Authority No. NEPRA/R/TRF-UTB-2013/5152-5154, dated May 29, 2013. Pending approval of the Up-Front Tariff, the Authority directs ASMPL to charge only such tariff as may be determined, approved or specified by the Authority, in terms of Rule 6 of the Rules without any exception.

(vii). The proposed Co-Generation Power Plant/Generation Facility of ASMPL will be using RE Resource for Generation of electric Power. Therefore, the project may qualify for the Carbon Credit under the Kyoto Protocol (for RE projects coming into operation upto 2020). In view of the said, the Authority directs ASMPL to initiate the process in this regard at the earliest so that proceeds for the Carbon Credits are materialized. ASMPL shall be required to share the proceeds of the

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

Carbon Credits with the Power Purchaser as stipulated in Article 13 of its Generation Licence.

(viii). The proposed Co-Generation Power Plant/Generation Facility of ASMPL for which Generation Licence has been sought, is a Conventional Steam Turbine Power Plant using Bagasse as fuel to be burned in the High Pressure boilers. Bagasse is a RE source which does not cause pollution however, the operation of the generation facility may cause some other type of pollution including Soil Pollution, Water Pollution and Noise Pollution. The Authority has considered these aspects and has made ASMPL obligatory to comply with the required rules and regulation on environment. Further, the Authority directs ASMPL to submit a quarterly report confirming that its operation is compliant with required Environmental Standards of the Environmental Protection Agency of Govt. of Sindh.

(ix). In view of the above, the Authority hereby decides to approve the grant of Generation Licence to ASMPL 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 and regulations framed there under including the Grid Code.

Authority

Maj. (R) Haroon Rashid
Member

Khawaja Muhammad Naeem
Member

Habibullah Khilji
Member/Vice Chairman

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

National Electric Power Regulatory Authority
(NEPRA)
Islamabad – Pakistan

GENERATION LICENCE

No. IGSPL/46/2014

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:

ALLIANCE SUGAR MILLS (PRIVATE) LIMITED

Incorporated under the Companies Ordinance, 1984
Corporate Universal Identification No. 0076093, dated May 31, 2011

for its Bagasse based Generation Facility/Co-Generation Power Plant Located at KLP Road, Rasheedabad, Tehsil Ubauro, District Ghotki, in the Province of Sindh

(Installed Capacity: 30.00 MW Gross Total)

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

Given under my hand this 02nd day of October Two Thousand & Fourteen and expires on 30th day of December Two Thousand & Forty Five.

Registrar 02/10/14

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

Article-1
Definitions

1.1 In this Licence

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

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

(c). "Bus Bar" means a system of conductors in the generation facility of the Licensee on which the electric power of all the generators is collected for supplying to the Power Purchaser;

(d). "Carbon Credits" mean the amount of carbon dioxide (CO_2) and other greenhouse gases not produced as a result of generation of energy by the generation facility and other environmental air quality credits and related emissions reduction credits or benefits (economic or otherwise) related to the generation of energy by the generation facility, which are available or can be obtained in relation to the generation facility after the COD;

(e). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility of the Licensee is Commissioned;

(f). "CPPA" means the Central Power Purchasing Agency of NTDC or any other entity created for the like purpose;

(g). "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 generation facility, as may be amended by the parties thereto from time to time;

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

(h). "Grid Code" means the grid code prepared by NTDC and approved by the Authority, as it may be revised from time to time by NTDC with any necessary approval by the Authority;

(i). "IEC" means "the International Electro-technical Commission and its successors or permitted assigns;

(j). "IEEE" means the Institute of Electrical and Electronics Engineers and its successors or permitted assigns;

(k). "Licensee" means **Alliance Sugar Mills (Private) Limited** and its successors or permitted assigns;

(l). "NTDC" means National Transmission and Despatch Company Limited and its successors or permitted assigns;

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

(n). "Power Purchaser" means NTDC (through CPPA) on behalf of XW-DISCOs or any XW-DISCO which purchases electricity from the Licensee, pursuant to an Energy Purchase Agreement for procurement of electricity;

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

(p). "SEPCO" means Sukkur Electric Power Company Limited and its successors or permitted assigns;

(q). "XW DISCO" means "an Ex-WAPDA distribution company engaged in the distribution of electric power"

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

1.2 Words and expressions used but not defined herein bear the meaning given thereto in the Act or in the Rules.

Article-2
Application of Rules

This Licence is issued subject to the provisions of the Rules, as amended from time to time.

Article-3
Generation Facilities

3.1 The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical and functional specifications and other details specific to the generation facility of the Licensee are set out in Schedule-I of this Licence.

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

3.3 The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility before its COD.

Article-4
Term of Licence

4.1 The Licence is granted for a term of thirty (30) years from the COD of the generation facility.

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

Article-5
Licence fee

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

Article-6
Tariff

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

Article-7
Competitive Trading Arrangement

7.1 The Licensee shall participate in such manner as may be directed by the Authority from time to time for development of a Competitive Trading Arrangement. The Licensee shall in good faith work towards implementation and operation of the aforesaid Competitive Trading Arrangement in the manner and time period specified by the Authority. Provided that any such participation shall be subject to any contract entered into between the Licensee and another party with the approval of the Authority.

7.2 Any variation or modification in the above-mentioned contracts for allowing the parties thereto to participate wholly or partially in the Competitive Trading Arrangement shall be subject to mutual agreement of the parties thereto and such terms and conditions as may be approved by the Authority.

Article-8
Maintenance of Records

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

Article-9
Compliance with Performance Standards

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

Article-10
Compliance with Environmental Standards

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

Article-12
Provision of Information

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

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

Article-13
Carbon Credits

The Licensee shall process and obtain Carbon Credits expeditiously and credit the proceeds to the Power Purchaser as per the Policy.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

Article-14
Design & Manufacturing Standards

The generation facilities 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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

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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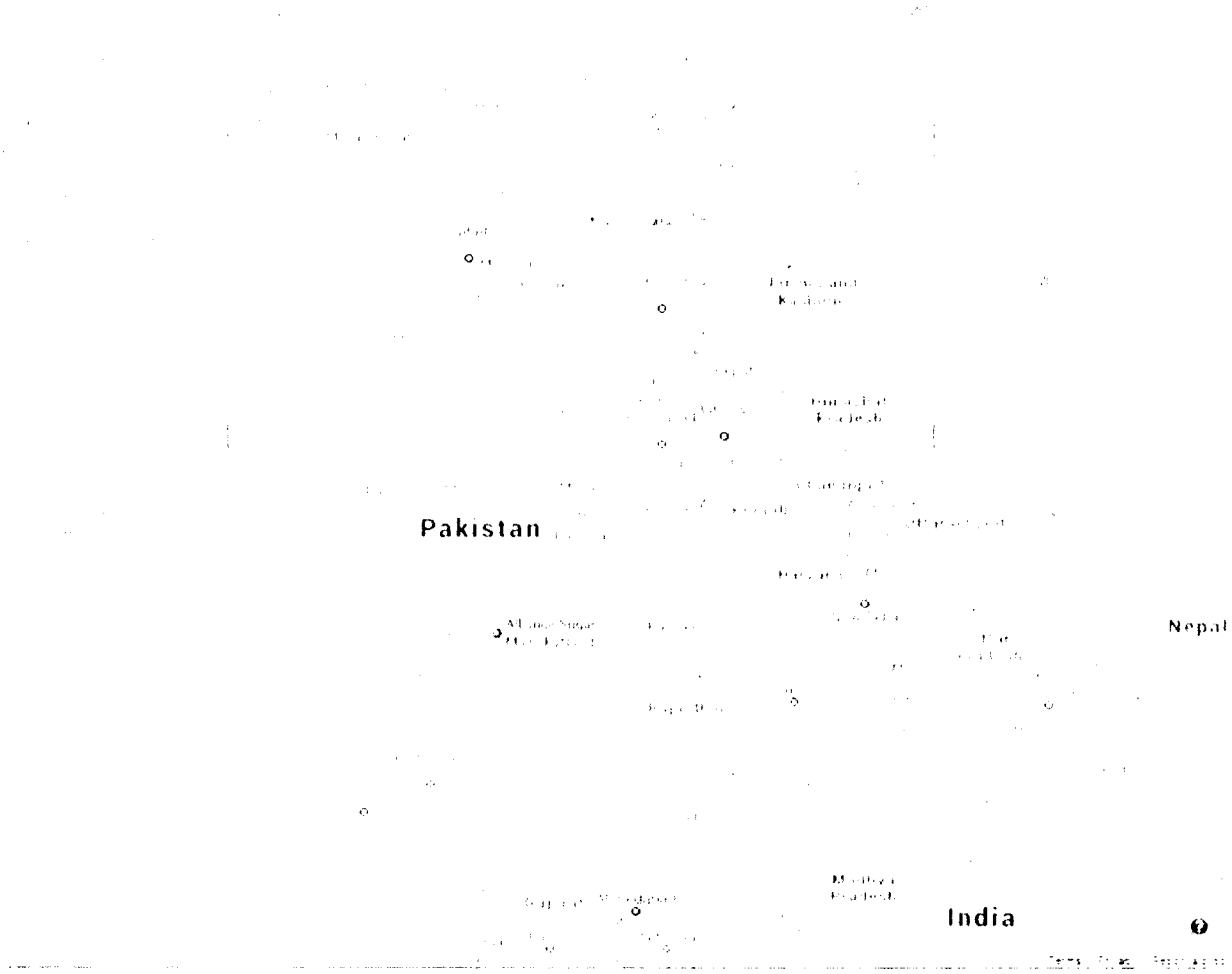
REGISTRAR
NEPRA



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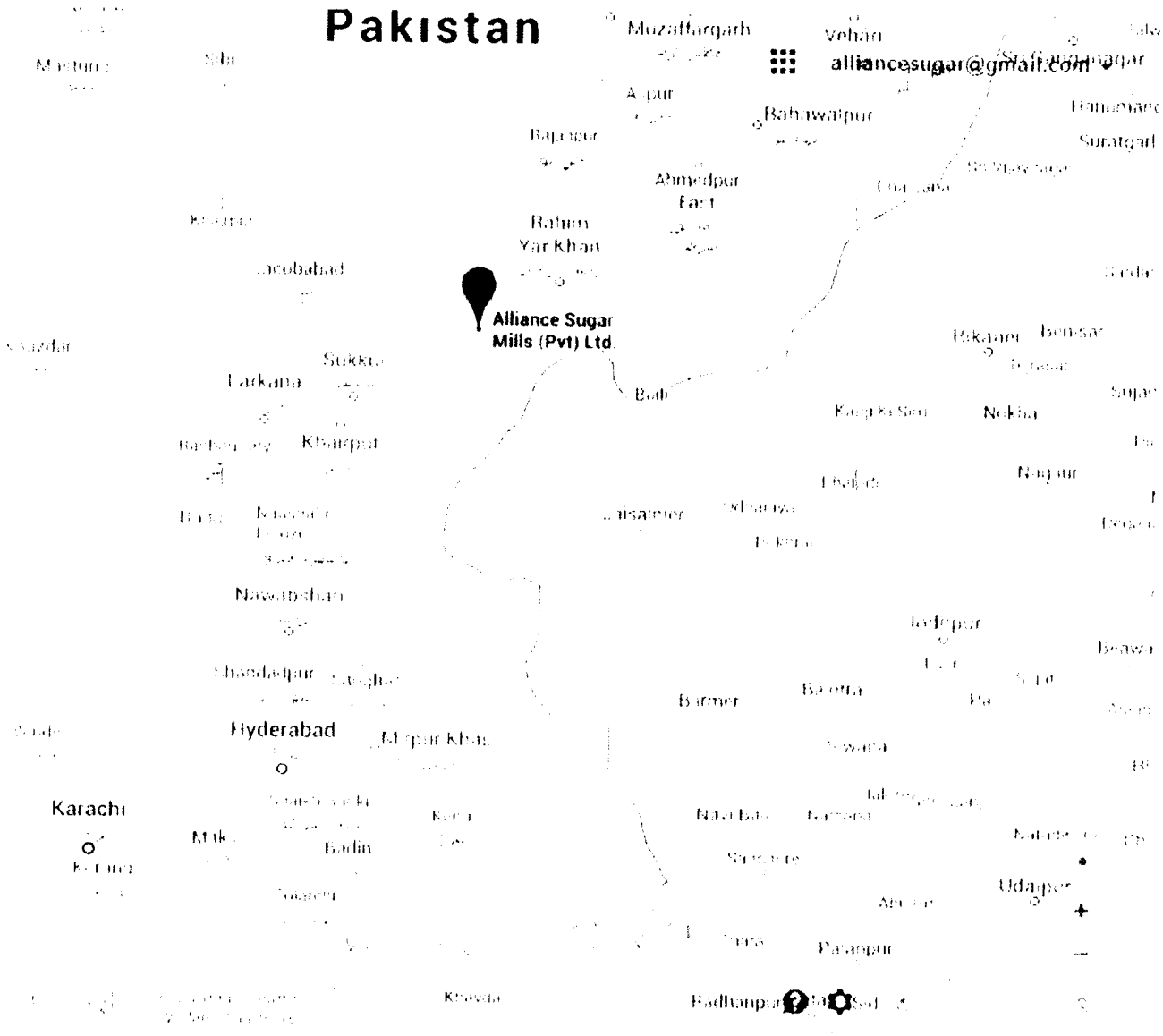
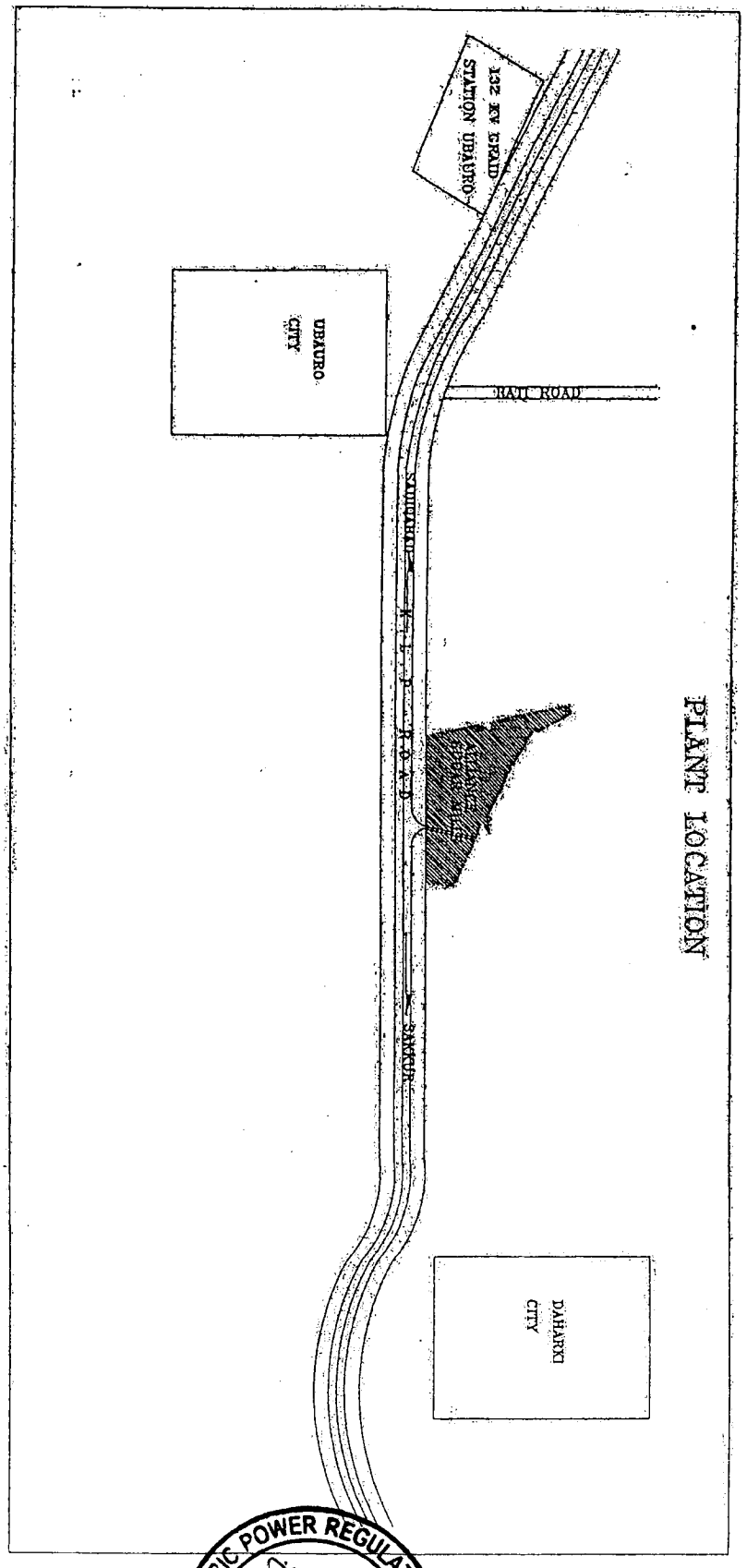
REGISTRAR
NEPRA





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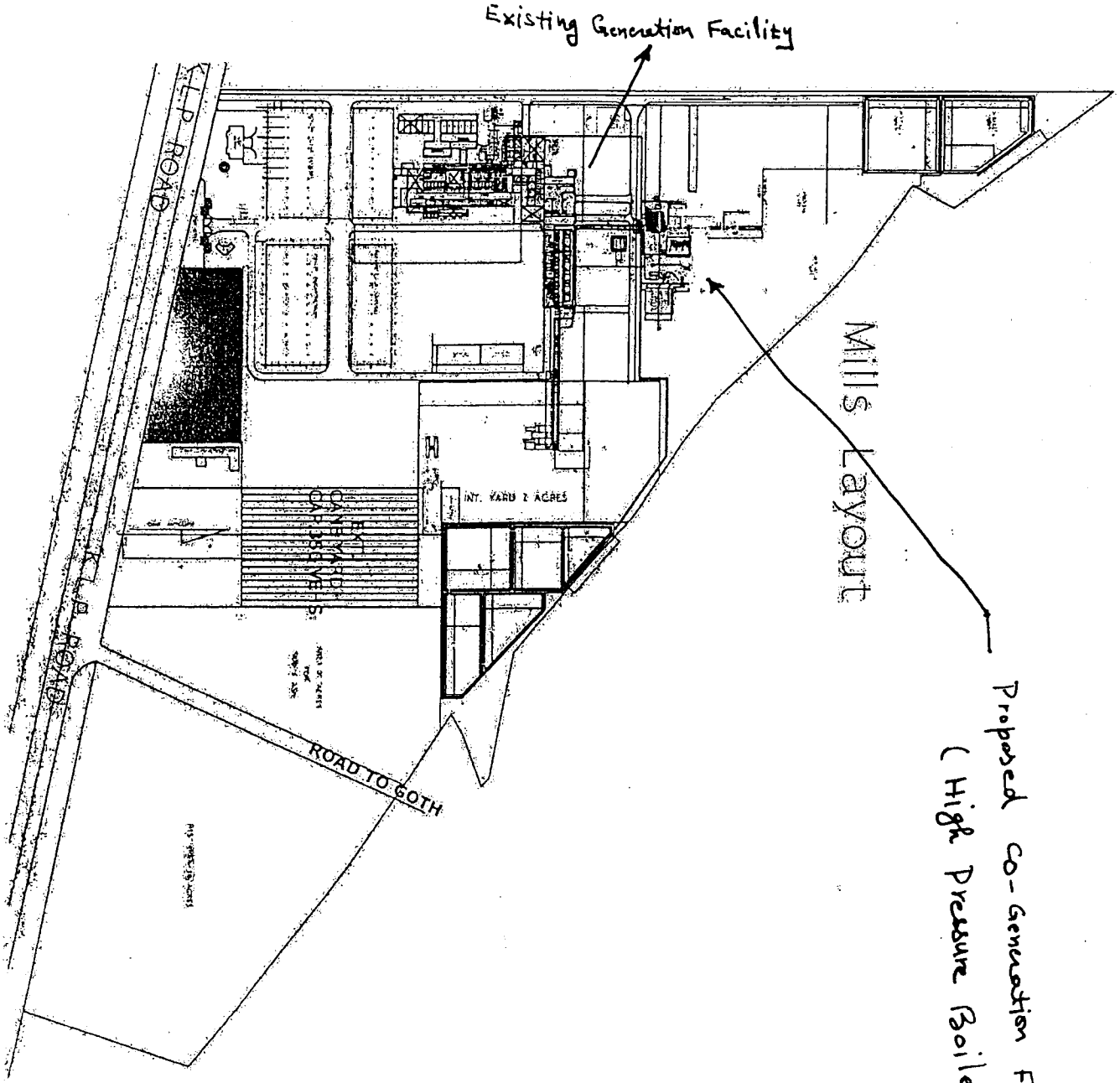
REGISTRAR
NEPRA



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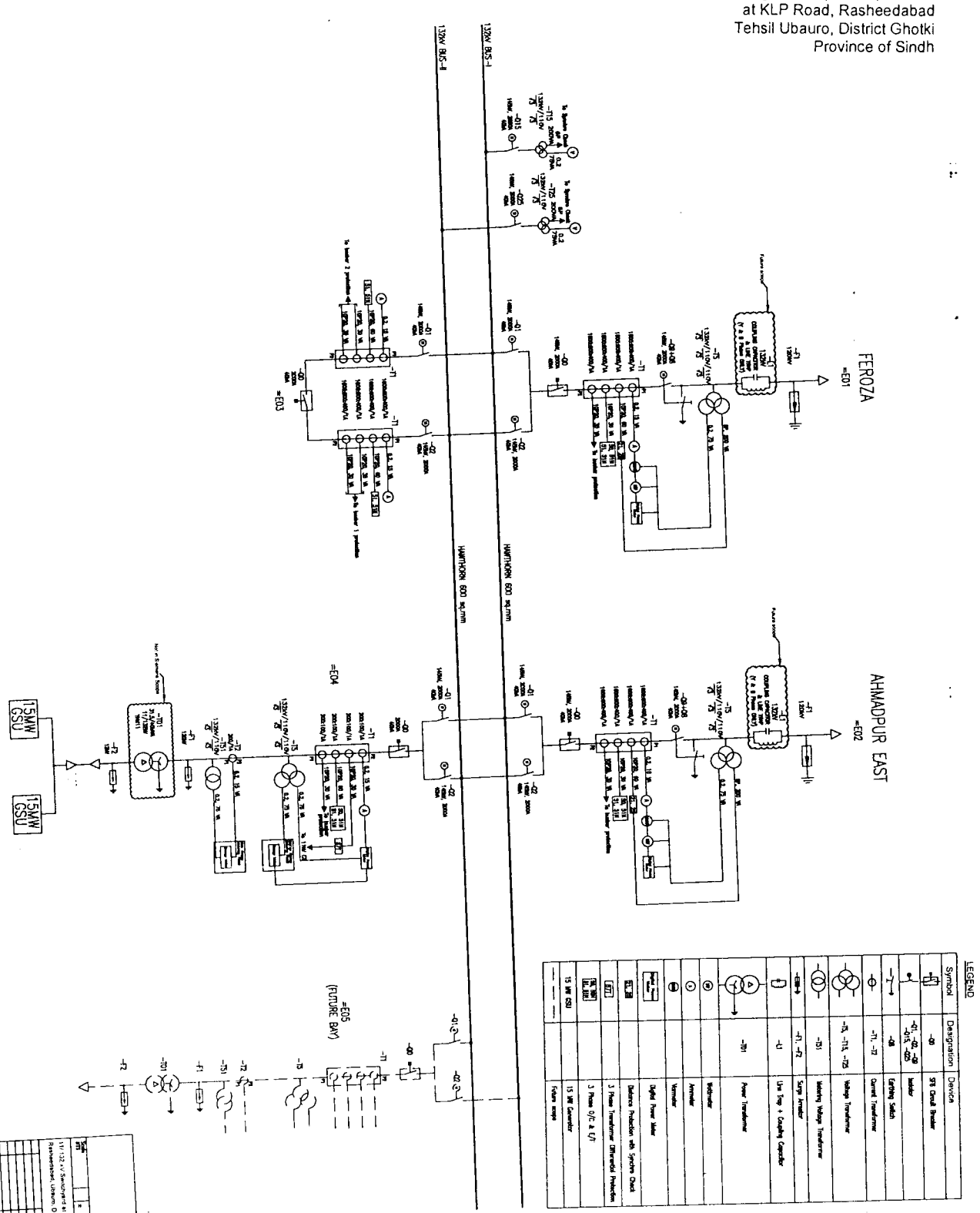

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REGISTRAR
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Interconnection Facilities/ Transmission Arrangements for Dispersal of Power from the Generation Facility/Co-Generation Power Plant

The electric power from the bagasse based generation facility/co-generation power plant of Alliance Sugar Mills (Private) Limited (ASMPL) will be will be dispersed to the load center of SEPCO.

(2). The Interconnection Facilities (IF)/Transmission Arrangements (TA) for supplying to SEPCO from the above mentioned generation facility shall be at 132 KV level. The dispersal/interconnection arrangement for supplying to SEPCO will be consisting of a 132 KV Double Circuit (D/C) Transmission Line (on ACSR LYNX Conductor) measuring about seven (07) Kilometer connecting the generation facility/co-generation power plant with 132 KV Dharki Grid Station.

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

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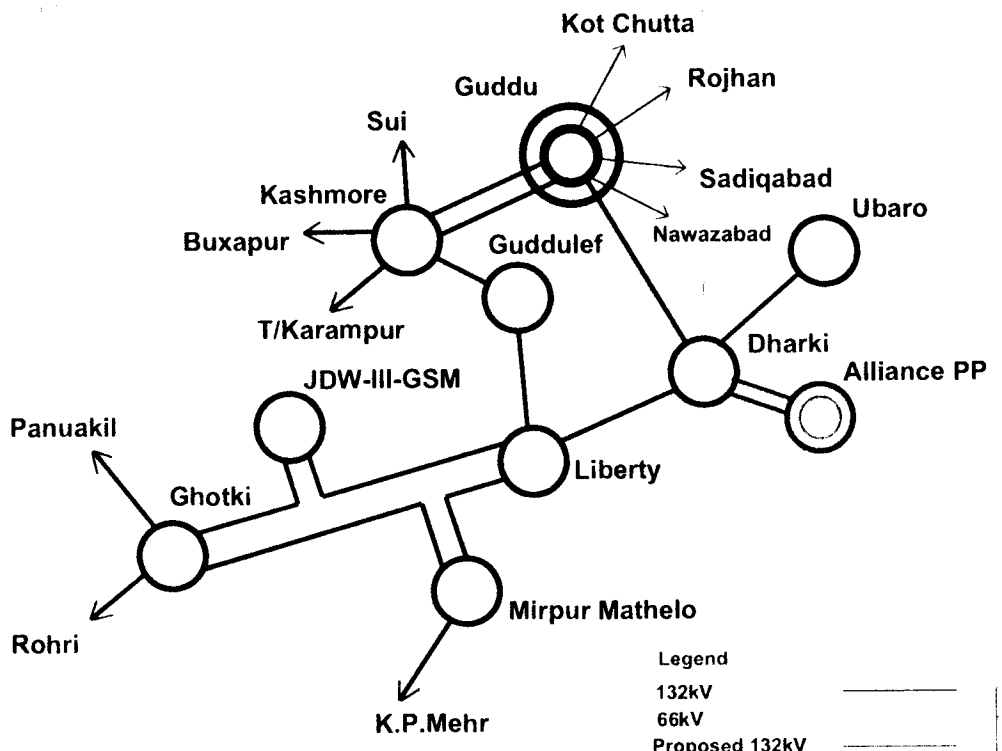
132 kV Network Near Dharki
With Alliance PP,Year June 2020



Sketch-3
Interconnection Study of Alliance PP
Power Planners International
2014 | 1 | Alliance Sketch-3.vsd

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REGISTRAR
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Detail of Generation Facility/Co-Generation Power Plant

(A). General Information

(i).	Name of Applicant	Alliance Sugar Mills (Private) Limited
(ii).	Registered /Business Office	53/3-A Tufail Road , Lahore Cantt.
(iii).	Plant Location	KLP Road, Rasheedabad, Tehsil Ubauro, District Ghotki in the Province of Sindh.
(iv).	Type of Generation Facility	Bagasse based, high-pressure Co-Generation Thermal power Plant.

(B). Plant Configuration

(i).	Plant Size Installed Capacity	30.00 MW.	
(ii).	Type of Technology	Conventional Steam Turbine based Power Plant (with 1 Backpressure Type and 1 Extraction cum condensing Steam Turbine with 67 bar (kg/cm2) boiler.	
(iii).	Number of Units/Size (MW)	Steam Turbines	2 x 15.00 MW
(iv).	Unit Make/Model/Type & Year of Manufacture Etc.	Steam Turbines	Hangzhou Steam Turbine Company Limited (Model – NG40/40 AND ENK40/56)
		Boiler	Dumping grate type Boiler of 140 TPH Capacity and 67 Bar (kg/cm2) pressure from Descon Engineering Limited,

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

			Pakistan
(v).	Commissioning/ Commercial Operation Date of the Generation Facility	December 31, 2015	
(vi).	Expected Useful Life of the Generation Facility from Commercial Operation/ Commissioning Date	30 Years (Minimum)	

(C). Fuel/Raw Material Details

(i).	Primary Fuel	Bagasse	
(ii).	Alternate Fuel	Furnace Oil	
(iii).	Fuel Source (Imported/ Indigenous)	Primary Fuel	Alternate Fuel
		Indigenous	Indigenous/Imported
(iv).	Fuel Supplier	Primary Fuel	Alternate Fuel
		Alliance Sugar Mills (Private) Limited	Pakistan State Oil (PSO)/Shell Pakistan Limited (Shell)
(v).	Supply Arrangement	Primary Fuel	Alternate Fuel
		Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc	Through Oil Tankers

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

(vi).	Sugarcane Crushing Capacity of RSML	10,000 Ton Crushing Per Day	
(vii).	Bagasse Generation Capacity of RSML	3,000 Tons per day	
(viii).	Fuel Storage facilities	Primary Fuel	Alternate Fuel
		Bulk Storage	2 Tank
(ix).	Capacity of Storage facilities	Primary Fuel	Alternate Fuel
		150,000 Metric Tons bulk storage	Tank-1: 500 Metric Tons; Tank-2: 40 Metric Tons
(x).	Gross Storage Capacity	Primary Fuel	Alternate Fuel
		28,000 Metric Tons Bulk Storage	540 Metric Tons

(D). Emission Values

		Primary Fuel	Alternative Fuel
(i).	SO_x	0%	To be provided
(ii).	NO_x	2%~5%	-Do-
(iii).	CO_2	12%~13%	-Do-
(iv).	CO	2%~3%	-Do-
(v).	PM_{10}	Nil	-Do-

(E). Cooling System

(i).	Cooling Water Source/Cycle	Condensate water of Ground Water Turbine Installed at Generation Facility/Co-Generation Power Plant/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 - 0.90 leading
(iv).	Automatic Generation Control (AGC)	Yes
(v).	Ramping Rate	5KW/Sec
(vi).	Time required to Synchronize to Grid	5 Hours for Cold Start/30 Second for synchronization

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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

		During Crushing Season Operation	During Off Crushing Season Operation
(1).	Total Gross Installed Capacity of the Generation Facility	30.00 MW	15.00 MW
(2).	De-rated Capacity of Generation Facility at Reference Site Conditions	27.60 MW	14.00 MW
(3).	Auxiliary Consumption of the Generation Facility	04.20 MW	1.80 MW
(4).	Total Installed Net Capacity of Generation Facility at Reference Site Condition	23.40 MW	12.20 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 Energy Purchase Agreement or any other applicable document(s).

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