National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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Registrar

No. NEPRA/R/DL/LAG-392/6779-84

October 10, 2017

Mr. M. Latif Anjum
Deputy General Manager (Power)
Hamza Sugar Mills Limited (HSML)
A/22, S.I.T.E., Mauripur Road, Karachi.
Phone. +92-21-32561101-4

Subject: **Grant of Generation Licence No. IGSPL/93/2017**
Licence Application No. LAG-392
Hamza Sugar Mills Limited (HSML)

Reference: *Your application vide letter No. HSML/NEPRA/1799, dated March 27, 2017 (received on March 31, 2017).*

Enclosed please find herewith Determination of the Authority in the matter of Application of Hamza Sugar Mills Limited (HSML) for the Grant of Generation Licence along with Generation Licence No. IGSPL/92/2017 annexed to this determination granted by the National Electric Power Regulatory Authority (NEPRA) to HSML for its 30 MW Bagasse based Generation Facility located at Jetha Bhutta, Tehsil Khanpur, District Rahim Yar Khan, 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/92/2017)

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(Syed Safeer Hussain)

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, ENERCON Building, Sector G-5/2, Islamabad.
4. Chief Executive Officer, Multan Electric Power Company (MEPCO), NTDC Colony, Khanewal Road, Multan.
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 Hamza Sugar Mills Limited for the Grant of Generation Licence

October 10, 2017
Case No. LAG-392

(A). Background

(i). In order to commercially harness the potential of the Renewable Energy (RE) resources in the country, the Government of Pakistan (GoP) has set up an entity in the name of Alternative Energy Development Board (AEDB) which acts as a one window facilitator for the prospective investors.

(ii). The GoP through AEDB has formulated "the Policy for Development of Renewable Energy for Power Generation 2006" (hereafter the RE Policy). Initially the scope of the RE Policy included development of Hydro, Wind, and Solar Technologies. Later on, the GoP amended the scope of the RE Policy to include power projects based on bagasse, biomass, waste-to-energy and bio-energy, using high-pressure (minimum 60 bar) boiler technology. Further, GoP also extended the applicability of the RE Policy for an additional five (05) years w.e.f. March 06, 2013. In consideration of the said, AEDB has issued Letter of Intent (LoI) to different entrepreneurs/project developers. One such LoI was issued to Hamza Sugar Mills Limited (HZASML), for setting up a 30.00 MW bagasse based power project in district Rahimyar Khan, in the province of Punjab.

(iii). According to the terms and conditions of LoI, the company/HZASML was required to complete various studies for the project and also approach the Authority for the grant of generation licence and acceptance of the already determined up-front tariff.

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(B). Filing of Application

(i). HZASML submitted an application on March 31, 2017 for the grant of generation licence in terms of Section-15 of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") read with the relevant provisions of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "Licensing Regulations").

(ii). The Registrar examined the submitted application to confirm its compliance with the Licensing Regulations and observed that the application lacked some of the required information/documentation. Accordingly, HZASML was directed to submit the missing information/documentation and the same was received on April 24, 2017. The Authority considered the matter 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 on May 16, 2017 for consideration of the grant of the generation licence as stipulated in Regulation-7 of the Licensing Regulations. The Authority approved an advertisement to invite comments of general public, interested and affected persons in the matter as stipulated in Regulation-8 of the Licensing Regulations. Accordingly, notices were published in one (01) Urdu and one (01) English newspapers on May 19, 2017.

(iii). In addition to the above, the Authority approved a list of stakeholders for seeking their comments for the assistance of the Authority in the matter in terms of Regulation-9(2) of the Licensing Regulations. Accordingly, letters were sent to different stakeholders as per the approved list on May 22, 2017, soliciting their comments for the assistance of the Authority.

(C). Comments of Stakeholders

(i). In reply to the above, the Authority received comments from three (03) stakeholders. These included Anwar Kamal Law Associates (AKLA), AEDB and Ministry of Petroleum & Natural Resources (MoP&NR). The salient points of the

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comments offered by the said stakeholders are summarized in the following paragraphs: -

(a). AKLA highlighted different issues pertaining to the power sector of the country including (a). surplus capacity; (b) under-utilization of power plants; and (c). induction of new power plants on "Take or Pay" basis etc. Further, AKLA contested that RE power plants are not viable financially and economically due to higher upfront tariff and "must run condition". AKLA also questioned the induction of RE projects in the current scenario (i.e. reduction in oil prices, RLNG contract with Qatar, upcoming coal power projects and introduction of competitive market etc.), affordability vs. availability of electric power and long term PPAs on "Take or Pay" basis etc. AKLA stated that it is not against setting up of new power plants and in this regard a very careful estimate of required generation capacities should be made or the licences should be granted on "Take and Pay" basis;

(b). AEDB confirmed the issuance of LoI to HZASML under the RE Policy for setting a bagasse based generation, located at Jetha Bhutta, Tehsil Khanpur, district Rahimyar Khan, in the province of Punjab. AEDB supported the grant of generation licence to HZASML subject to fulfilments of all relevant codal formalities; and

(c). MoP&NR remarked that HZASML intends setting up a bagasse based generation facility for which no fossil fuel (i.e. oil, gas or coal) is required. Therefore, ministry has no objection in the matter.

(ii). The Authority reviewed the above comments of the stakeholders and in view of the observations of AKLA, it decided to seek the perspective of HZASML. In reply to the said, HZASML submitted that the comments are not specific to its

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application for the generation licence but are a criticism of the RE Policy. AKLA has presented detailed data regarding the installed generation capacity and utilization of existing power plants to establish that power generation capacity in country is surplus and the existing power plants are under-utilized. HZASML stated that it believes that AKLA has failed to differentiate between installed generation capacity and operational generation capacity. A number of the existing power plants are under-utilized because they are inefficient and it is economically not feasible to operate them. Moreover, certain technologies such as hydro, wind, solar etc. generally have a low plant utilization factor. Therefore, the data suggesting a capacity surplus in the country is misleading. It was stated that AKLA has suggested that power from new projects should only be contracted on a "Take and Pay" basis as opposed to the existing "Take or Pay" regime. As power market of the country is based on a single buyer, it is believed that such an arrangement will make power projects unfeasible. HZASML highlighted that AKLA has previously too suggested the "Take and Pay" regime in its intervention request filed in case of 1,230 MW LNG based power plant being developed by National Power Parks Management Company Limited (NPPML). In this regard, the Authority in its determination dated August 9, 2016 for NPPML stated that the arrangement of Take or Pay is in accordance with the applicable power policy and unless there is a competitive power market in the country this regime will be hard to change. Finally, HZASML submitted that bagasse based power projects must not be compared with other thermal power projects such as coal, RFO and R-LNG, which use imported fuel and burden foreign exchange reserves of the country as bagasse is an indigenous and environment friendly fuel and therefore must be given priority over other thermal power projects. In view of the above, HZASML requested the Authority to disregard the comments which are completely irrelevant and have no specific implication on the project.

(iii). The Authority considered the comments of the stakeholders, the reply of HZASML and observed that AKLA have raised certain observations regarding the project. The Authority observes that AKLA while submitting its comments has referred to its previous correspondences made on different issues including (a). surplus capacity; (b). capacity payment without supplying electricity; (c). addition of

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high cost renewable plants; (d). under-utilization of power plants; and (e). induction of new power plants on "Take or Pay" basis and others. In this regard, the Authority observes that it has duly addressed the aforementioned objections/comments and sent a comprehensive reply to AKLA through letter no. NEPRA/SAT-I/TRF-100/17060, dated December 27, 2016. The Authority reiterates its earlier findings and observations given in the aforementioned letter and is of the considered opinion that there is considerable supply demand gap resulting in load-shedding and load management. It is substantiated by the fact that the proposed generation facility of HZASML is included in the future expansion plan of Multan Electric Power Company Limited (MEPCO) for which it has already given a consent to Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) which acts an agent for the utilities. Further, CPPA-G has also filed a power acquisition request for purchasing power from HZASML. Regarding the observations of AKLA that RE projects should have "Take and Pay" tariff, the Authority hereby clarifies that it had already determined an upfront tariff for bagasse based projects which is on unit delivered basis which means that a power producer/generation company is paid only for the energy it delivers. In view of foregoing, the Authority considers that the observations of AKLA stand addressed.

(iv). In consideration of the above and having addressed the comments/objections, the Authority considered it appropriate to proceed further in the matter of application of HZASML for the consideration of grant of generation licence as stipulated in the Licensing Regulations and NEPRA Licensing (Generation) Rules, 2000 (the "Generation Rules").

(D). Evaluation/Findings

(i). The Authority has examined the submissions of HZASML including the information provided in its application for the grant of generation licence. The Authority has also considered the feasibility study of the project, the Grid Interconnection Study (GIS), provisions of the RE Policy and the relevant rules & regulations.

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(ii). The Authority has observed that the main sponsor of the project is Tayyab Group of Industries which is a leading industrial group of the country, having interests in textile, edible oil, real estate, sugar and Information Technology. The group set up a sugar mill in the name HZASML which is located at Jetha Bhutta, tehsil Khanpur, district Rahimyar Khan in the province of Punjab. The said sugar mill is one of the oldest in the south of the country and was set up in the early sixties. In order to operate the mill, the sponsors at that time incorporated a separate legal entity under relevant Section of the then Companies Act 1913 (having Certificate of Incorporation No. KAR No. 1310 of 1962-1963, dated January 17, 1963) under the Companies Act, 1913. The memorandum of association of HZASML includes *inter alia,* power generation and its sale as one of its business objects. The sugar mill which now has a capacity of 24500 tons of crushing per day (TCD), owns, operates and maintains a low pressure boiler based generation facility/Captive Power Plant (CPP) with an installed capacity of 23.60 MW for which the Authority granted HZASML a generation licence (No. SGC/67/2010, dated December 14, 2010). HZASML has been supplying to Multan Electric Power Company Limited (MEPCO) around 2.50 MW of energy/electric power from the said CPP under a power purchase agreement (PPA). Later on, HZASML set up another generation facility of 30.00 MW based on high pressure boilers (of 67 Bar) using bagasse as fuel, in the vicinity of its sugar mill. The Authority granted a generation licence (No. IGSPL/45/2014, dated September 12, 2014) for the said high pressure based generation facility in terms of the RE Policy. The said generation facility was commissioned and achieved Commercial Operation on March 10, 2017 and has so far has supplied around 35.00 million Units to the National Grid. According to the latest available balance sheet of the HZASML, the total assets of the company stands at around 9.00 billion. In consideration of the above, it is clear that the HZASML has strong financial and technical background relating to the development of small and medium sized generation facilities.

(iii). The Authority has observed that based on the financial strength and other evaluation parameters, AEDB issued LoI for setting up a 30.00 MW bagasse based generation facility/co-generation facility/power plant within HZASML at the above mentioned location. The Authority has observed that HZASML carried out a

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feasibility study of the project including inter alia, proposed equipment for generation facility/co-generation facility/power plant, soil tests reports, technical details pertaining to selection of steam turbine generator and other allied equipment, electrical studies, environmental study and project financing etc. According to the feasibility study, HZASML will be setting up a 30.00 MW bagasse based generation facility/co-generation facility/power plant. In this regard, the sponsors have submitted necessary documents confirming that the proposed site of the project is in their name and possession.

(iv). In consideration of the above, HZASML has confirmed that the proposed generation facility/co-generation facility/power plant will be consisting of 1 x 30.00 MW of steam turbine (extraction cum condensing type) with high pressure (110 bar, 540°C) travelling grate boiler. According to the submitted information, the net efficiency of the proposed generation facility/co-generation facility/power plant will be at least 24.50%. The proposed generation facility/co-generation facility/power plant will only be utilizing bagasse for firing the boiler.

(v). The Authority has observed that the proposed generation facility/co-generation facility/power plant will utilize the bagasse generated from HZASML. In this regard, HZASML has confirmed that the bagasse generated by it will be sufficient to operate the proposed generation facility/co-generation facility/power plant to meet with the required plant factor and plant availability as stipulated in the determination of the Authority No. NEPRA/R/TRF-UTB-2013/5152-54, dated May 29, 2013 for the upfront tariff for bagasse based projects. HZASML has also confirmed that if there is shortage of bagasse in the area due to change in pattern of crop of sugarcane, the bagasse will be purchased from the market for the operation of the generation facility/co-generation facility/power plant. In view of the above, the Authority is satisfied that the project will have the required fuel for the operation of the proposed generation facility/co-generation facility/power plant.

(vi). The Authority has noted that HZASML carried out the required interconnection and system stability study for dispersal of electric power from the proposed generation facility/co-generation facility/power plant. According to the said study, the dispersal/interconnection arrangement will be consisting of a 132 KV

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Double Circuit (D/C) transmission line (on ACSR LYNX Conductor) measuring about 1.3 Kilo-meter for making an In-Out of existing 132 KV S/C Khanpur-Liaqatpur transmission line at the generation facility/co-generation power plant of HZASML. It is pertinent to mention that the said dispersal/interconnection arrangement already exists for the earlier set up high pressure based generation facility/co-generation facility/power plant of HZASML with system of MEPCO. The Authority is satisfied that MEPCO has reviewed the GIS and accorded approval of the same. Further, NTDC has also endorsed the above mentioned GIS for dispersal of electric power from HZASML.

(vii). The Authority is encouraged that the proposed project of HZASML will be utilizing bagasse which is RE source. However, the Authority has observed that the proposed generation facility/co-generation facility/power plant will be working as a conventional thermal power plant using steam turbine for generation of electric power/energy that may cause environmental concerns. In this regard, the Authority has observed that HZASML carried out the Initial Environment Examination Study and Environment Protection Department, Government of the Punjab (EPDGoPb) has issued a No Objection Certificate (NOC) for the construction of the project.

(viii). In terms of Rule-3 of the Generation Rules, the Authority may grant a generation licence to any person to engage in the generation business. In the particular case under consideration, the Authority has observed that HZASML has provided details of location, technology, size, net capacity/energy, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facilities satisfying provisions of Rule-3(2) and Rule-3(3).

(ix). The Rule-3(5) of the Generation Rules stipulates the least cost option criteria necessary for the grant of generation licence which includes (a). sustainable development or optimum utilization of the RE or non-RE resources proposed for generation of electric power; (b). the availability of indigenous fuel and other resources; (c). the comparative costs of the construction, operation and maintenance of the proposed generation facility/co-generation facility/power plant against the preferences indicated by the Authority; (d). the cost and right-of-way considerations related to the provision of transmission and interconnection facilities;

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(e). the constraints on the transmission system likely to result from the proposed generation facility/co-generation facility/power plant and the costs of the transmission system expansion required to remove such constraints; (f). the short-term and the long-term forecasts for additional capacity requirements; (g). the tariff resulting or likely to result from the construction or operation of the proposed generation facility/co-generation facility/power plant; and (h). the optimum utilization of various sites in the context of both the short-term and the long-term requirements of the electric power industry as a whole.

(x). In consideration of the above, the Authority considers that the proposed project will result in optimum utilization of the RE which was earlier untapped, resulting in pollution free electric power. The Authority is of the considered opinion that bagasse is an indigenous fuel and such fuels should have a preference for the energy security. The Authority through its determination No. NEPRA/R/TRF-UTB-2013/5152-54, dated May 29, 2013 announced an upfront levelized tariff for the future bagasse projects which works out to be Pak. Rs. 10.4078/kWh which is very competitive considering the fact that not only cheap electric power will be generated but it will utilize the bagasse and other bio-mass which is otherwise burnt causing air and soil pollution.

(xi). As explained in the preceding paragraphs, the sponsors of the project carried out the grid interconnection study which concludes that the project will not face any constraints in transmission system. Further, being located at reasonable distance from the thick population, the project will not result in cost and right-of-way issue for the provision of transmission and interconnection facilities. The Authority has observed that MEPCO has included the project in its mid and long-term forecasts for additional capacity requirements. In view of the said, the Authority is of the considered view that the project of HZASML fulfills the eligibility criteria for grant of generation licence as stipulated in the NEPRA Act, rules and regulations and other applicable documents.

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(E). Grant of Generation Licence

(i). The sustainable and affordable energy/electricity is a key prerequisite for socio-economic development of any country. In fact, the economic growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of energy/electricity. In view of the said reasons, the Authority is of the considered opinion that for sustainable development, all indigenous power generation resources including RE must be developed on priority basis.

(ii). The existing energy mix of the country is heavily skewed towards the thermal power plants, mainly operating on imported fossil fuel. The continuous import of fossil fuel not only creates 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 development is encouraged. The Energy Security Action Plan 2005 approved by the GoP, duly 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.

(iii). The Authority considers that the proposed project of HZASML is consistent with the provisions of Energy Security Action Plan 2005. 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 fuel but will also help in reducing the carbon emission by generating clean electricity, thus improving the environment.

(iv). As explained in the preceding paragraphs above, HZASML has provided the details of location, technology, size, net capacity/energy, interconnection arrangements, technical details and other related information for the proposed generation facility/co-generation facility/power plant. In this regard, the Authority has observed that HZASML has a total area of around 100.00 acres and approximatly 8.00 acres have been designated for the proposed project for which necessary documents have been provided confirming that the proposed site

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of the project is in the name and possession of the sponsors. The said details have been incorporated in Schedule-I of the proposed generation licence. In this regard, the Authority directs HZASML to utilize the said mentioned land for the exclusive purpose of setting up of the proposed generation facility/co-generation/power plant and not to change its use except with its prior approval.

(v). The term of a generation licence under Rule-5(1) of the Generation Rules is required to match with the maximum expected useful life of the units comprised in a generating facility. According to the information provided by HZASML, the Commercial Operation Date (COD) of the proposed generation facility/co-generation facility/power plant will be November 30, 2017 and it will have a useful life of more than thirty (30) years from its COD. In this regard, HZASML has requested that the term of the proposed generation licence may be fixed to thirty (30) years consistent with the term of the proposed Energy Purchase Agreement (EPA) to be signed with the power purchaser. The Authority considers that said submission of HZASML about the useful life of the generation facility/co-generation facility/power plant and the subsequent request of HZASML to fix the term of the generation licence is consistent with international benchmarks therefore, the Authority fixes the term of the generation licence to thirty (30) years from COD of the project.

(vi). Regarding the tariff, 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. As explained in the previous paragraphs above, the project is being developed in terms of the upfront tariff for bagasse based projects, announced vide determination of the Authority No. NEPRA/R/TRF-UTB-2013/5152-54, dated May 29, 2013. In this regard, HZASML submitted an application for acceptance of the said upfront tariff. The Authority through its determination No. NEPRA/TRF-387/HSML-2017/15238-15240 dated September 11, 2017 has accepted the request of HZASML and allowed it the required tariff. The Authority directs HZASML to adhere the terms and condition of the said determination in letter and sprite without any exception. Notwithstanding the said, the Authority directs HZASML to charge the power purchaser only such tariff which has been determined, approved or specified by it. In this regard, the Authority decides to

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include Article-6 in the proposed generation licence and directs HZASML to adhere to the provision of the said article of the generation licence without any exception.

(vii). Regarding compliance with the environmental standards, as stated in the preceding paragraphs above, HZASML has provided the NOC from EPDGoPb and has confirmed that project will comply with the required standards during the term of the generation licence. In view of the importance of the issue, the Authority has decided to include a separate article (i.e. Article-10) in the generation licence along with other terms and conditions making it obligatory for HZASML to comply with relevant environmental standards at all times. Further, the Authority directs HZASML to submit a report on a bi-annual basis, confirming that operation of its generation facility/co-generation facility/power plant is in compliance with the required environmental standards as prescribed by the concerned environmental protection agency.

(viii). The proposed generation facility/co-generation facility/power plant of HZASML will be using RE resource for generation of electric power. Therefore, the project may qualify for the carbon credits under the Kyoto Protocol. Under the said protocol, projects coming into operation up to the year 2020 can qualify for the carbon credits. HZASML has informed that the project will achieve COD by November 30, 2017 which is within the deadline of the Kyoto Protocol. In view of the said, an article (i.e. Article-12) for carbon credits and its sharing with the power purchaser has been included in the generation licence. Foregoing in view, the Authority directs HZASML to initiate the process in this regard at the earliest so that proceeds for the carbon credits are materialized. HZASML will be required to share the proceeds of the carbon credits with the Power Purchaser as stipulated in Article-12 of the generation licence.

(ix). The Authority has observed that proposed generation facility/co-generation facility/power plant of HZASML will be supplying to the power purchaser approximately 20.885 MW and 26.45 MW of clean electric power during crushing and off season respectively. In view of the above, the Authority hereby approves the grant of generation licence to HZASML on the terms and conditions set out in the generation licence annexed to this determination. The grant of generation

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licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed thereunder and other applicable documents.

Authority:

Maj. (R) Haroon Rashid
(Member)

Syed Masood-ul-Hassan Naqvi
(Member)

Himayat Ullah Khan
(Member)

Saif Ullah Chattha
(Member/Vice Chairman)

6.10.2017

Tariq Saddozai
(Chairman)

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National Electric Power Regulatory Authority
(NEPRA)
Islamabad – Pakistan

GENERATION LICENCE

No. IGSPL/93/2017

In exercise of the Powers conferred upon under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, the Authority hereby grants the Generation Licence to:

HAMZA SUGAR MILLS LIMITED

Incorporated Under Section-05 of the
Companies Act, VII of 1913 having Certificate of Incorporation No. Kar
No. 1310 of 1962-1963, dated January 17, 1963

for its Bagasse based Generation Facility/Co-Generation Power Plant Located at Jetha Bhutta, Tehsil Khanpur, District Rahim Yar Khan in the Province of Punjab

(Total Installed Capacity: 30.00 MW Gross ISO)

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

Given under my hand this on 10th day of October Two Thousand & Seventeen and expires on 29th day of November Two Thousand & Forty Seven

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 as amended or replaced from time to time;

(b). "AEDB" means the Alternative Energy Development Board or any other entity created for the like purpose established by the GoP to facilitate, promote and encourage development of renewable energy in the country;

(c). "Applicable Documents" mean the Act, the rules and regulations framed by the Authority under the Act, 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;

(d). "Applicable Law" means the Act, relevant rules and regulations made there under and all the Applicable Documents;

(e). "Authority" means the National Electric Power Regulatory Authority constituted under Section-3 of the Act;

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(f). "Bus Bar" means a system of conductors in the generation facility/Co-Generation Facility/Power Plant of the Licensee on which the electric power from all the generators is collected for supplying to the Power Purchaser or BPC;

(g). "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/Co-Generation Facility/Power Plant 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/Co-Generation Facility/Power Plant, which are available or can be obtained in relation to the generation facility/Co-Generation Facility/Power Plant after the COD;

(h). "Co-Generation Facility/Power Plant" means the generation facility for simultaneous production of both electric power and heat or steam for industrial processes from a common fuel source;

(i). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility/Co-Generation Facility/Power Plant of the Licensee is commissioned;

(j). "CPPA-G" means Central Power Purchasing Agency (Guarantee) Limited or any other entity created for the like purpose;

(k). "Distribution Code" means the distribution code prepared by the concerned XW-DISCO and approved by the Authority, as it may be revised from time to time with necessary approval of the Authority;

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(l). "Energy Purchase Agreement (EPA)" 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/Co-Generation Facility/Power Plant, as may be amended by the parties thereto from time to time;

(m). "Generation Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 as amended or replaced from time to time;

(n). "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;

(o). "GoP" means the Government of Pakistan acting through the AEDB which has issued or will be issuing to the Licensee a LoS for the design, engineering, construction, insuring, commissioning, operation and maintenance of the generation facility/Co-Generation Facility/Power Plant and has signed or will be signing an IA with the Licensee;

(p). "IEC" means the International Electrotechnical Commission or its successors or permitted assigns;

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

(r). "Implementation Agreement (IA)" means the implementation agreement signed or to be signed between the GoP and the Licensee in relation to this particular generation facility/Co-Generation Facility/Power Plant, as may be amended from time to time;

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(s). "Letter of Support (LoS)" means the letter of support issued or to be issued by the GoP through the AEDB to the Licensee;

(t). "Licensee" means **Hamza Sugar Mills Limited** or its successors or permitted assigns;

(u). "Licensing Regulations" mean the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999 as amended or replaced from time to time;

(v). "MEPCO" means Multan Electric Power Company Limited or its successors or permitted assigns;

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

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

(y). "Power Purchaser" means CPPA-G which will be purchasing electric power from the Licensee either on behalf of all XW-DISCOs or any single XW-DISCO, pursuant to the EPA for procurement of electric power;

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

1.2 The 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.

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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 generation facility/Co-Generation Facility/Power Plant of the Licensee are set out in Schedule-I of this licence.

3.2 The net capacity of the generation facility/Co-Generation Facility/Power Plant of the Licensee is set out in Schedule-II hereto. The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility/Co-Generation Facility/Power Plant before its COD.

Article-4
Term of Licence

4.1 This licence shall become effective from the date of its issuance and will have a term of thirty (30) years from the COD of the generation facility/Co-Generation Facility/Power Plant of the Licensee.

4.2 Unless suspended or revoked earlier, the Licensee may apply for renewal of this licence ninety (90) days prior to the expiry of the above term, as stipulated in the Licensing Regulations.

Article-5
Licence fee

The Licensee shall pay to the Authority the Licence fee as stipulated in the National Electric Power Regulatory Authority (Fees) Rules, 2002 as amended or replaced from time to time.

Article-6
Tariff

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

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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 Generation 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 Standards (Generation) Rules 2009 as amended from time to time.

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Article-10
Compliance with Environmental & Safety Standards

10.1 The generation facility/Co-Generation Facility/Power Plant of the Licensee shall comply with the environmental and safety standards as may be prescribed by the relevant competent authority from time to time.

10.2 The Licensee shall provide a certificate on a bi-annual basis, confirming that the operation of its generation facility/Co-Generation Facility/Power Plant is in conformity with required environmental standards as prescribed by the relevant competent authority.

Article-11
Provision of Information

In accordance with provisions of Section-44 of the Act, the Licensee shall be obligated to provide the required information in any form as desired by the Authority without any exception.

Article-12
Emissions Trading/Carbon Credits

The Licensee shall process and obtain expeditiously the Carbon Credits admissible to the generation facility/Co-Generation Facility/Power Plant. The Licensee shall share the said proceeds with the Power Purchaser as per the Policy.

Article-13
Power off take Point and Voltage

The Licensee shall deliver the electric power to the Power Purchaser at the outgoing Bus Bar of its generation facility/Co-Generation Facility/Power Plant. The Licensee shall be responsible for the up-gradation (step up) of generation voltage up to the required dispersal voltage level.

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Article-14
Design & Manufacturing Standards

The generation facility/Co-Generation Facility/Power Plant of the Licensee shall be designed, manufactured and tested according to the latest IEC, IEEE or other equivalent standards. All the plant and equipment of the generation facility/Co-Generation Facility/Power Plant shall be unused and brand new.

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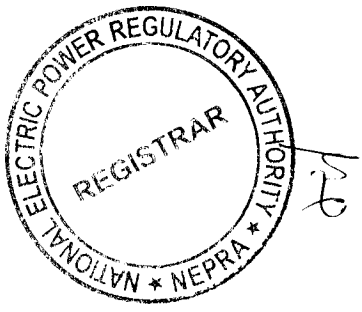
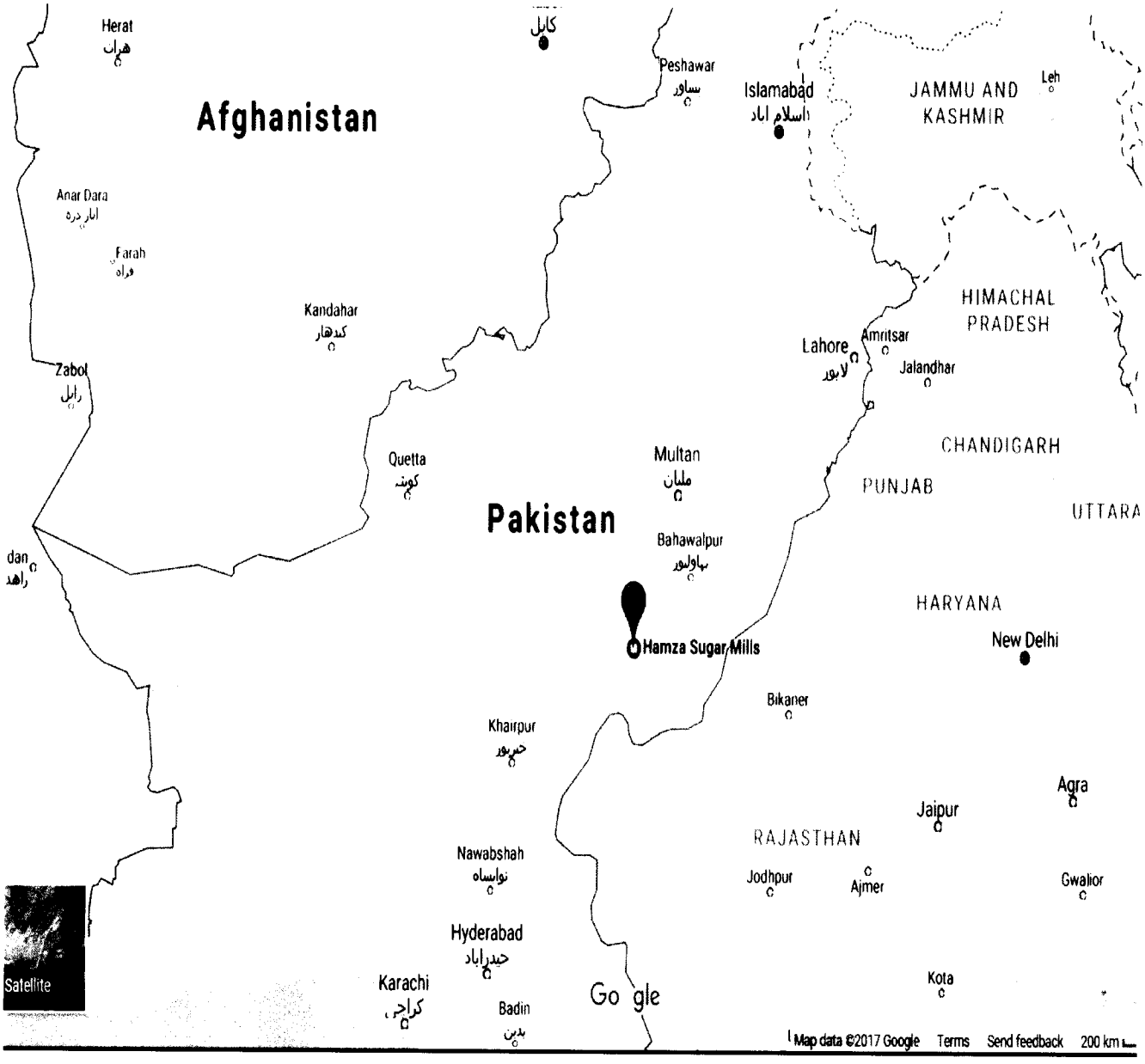
SCHEDULE-I

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.



Location of the Generation Facility/Co-Generation Facility/Power Plant of the Licensee on Map of Pakistan



Land Coordinates Longitude 28.95 °N & Latitude 70.72 °E

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Location of the Generation Facility/Co-Generation Facility/Power Plant of the Licensee on Map of the Province of Punjab

Land Coordinates Longitude 28.95 °N & Latitude 70.72 °E

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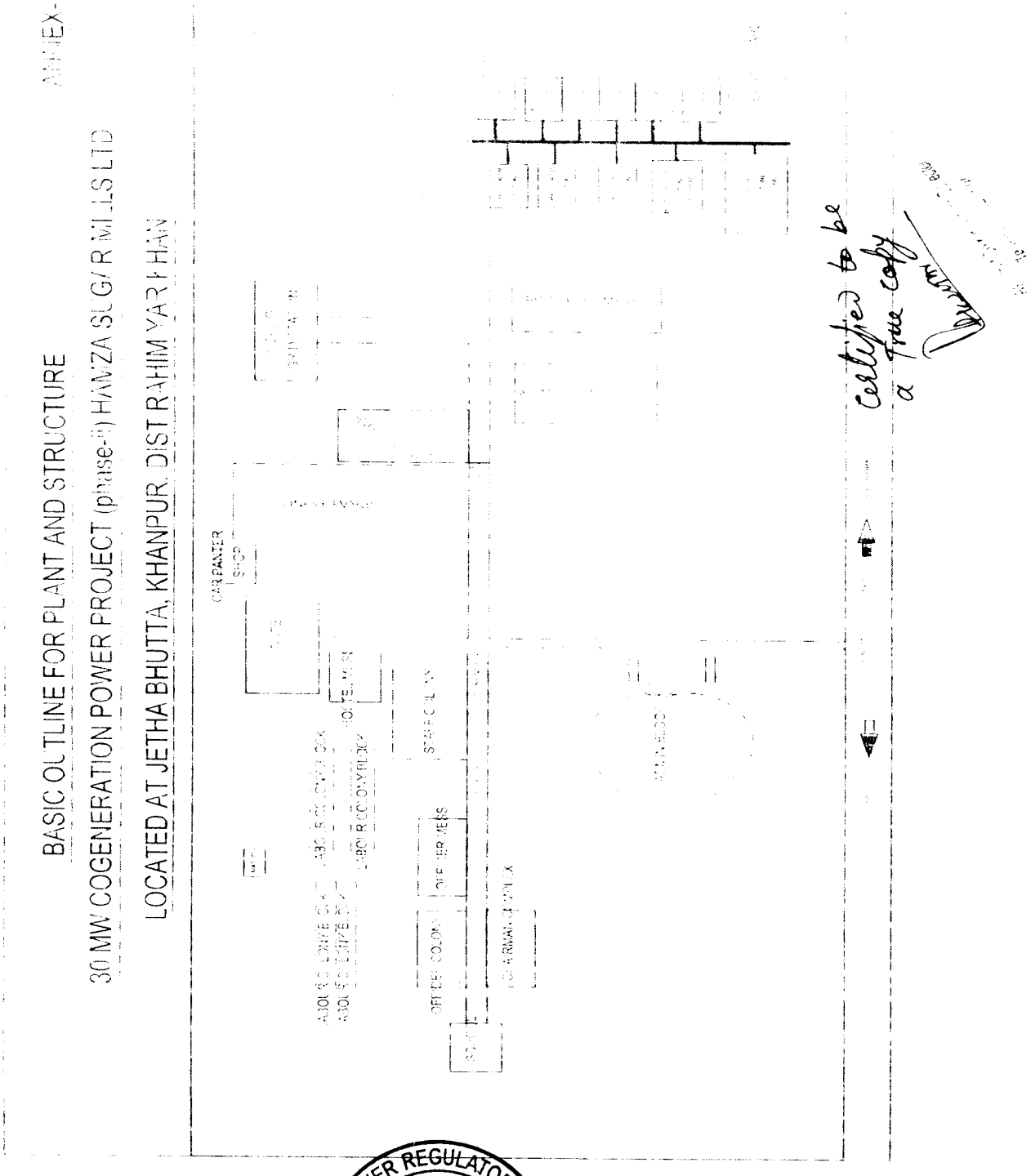
Lay-out of the Generation Facility/Co-Generation Facility/Power Plant of the Licensee



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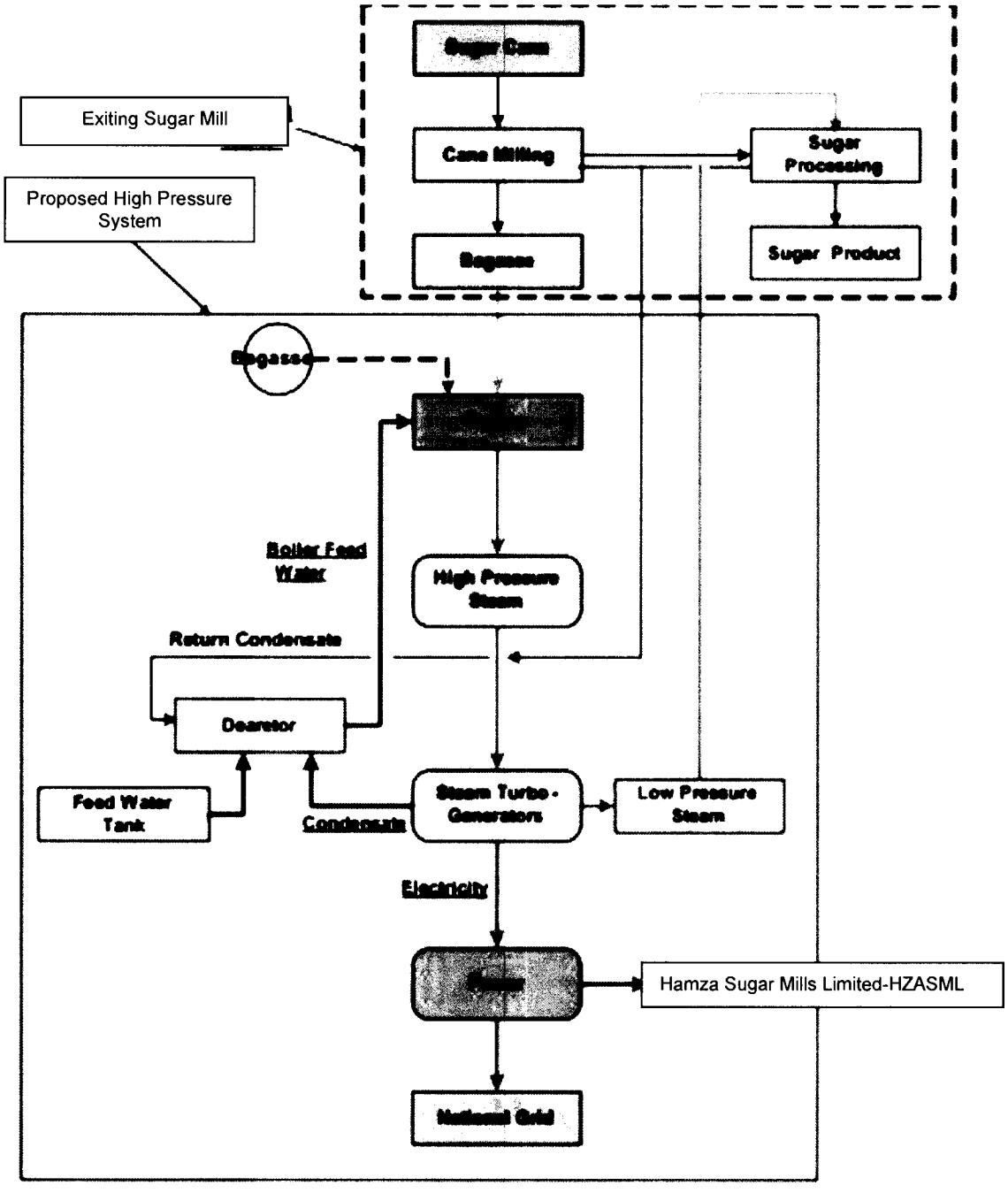
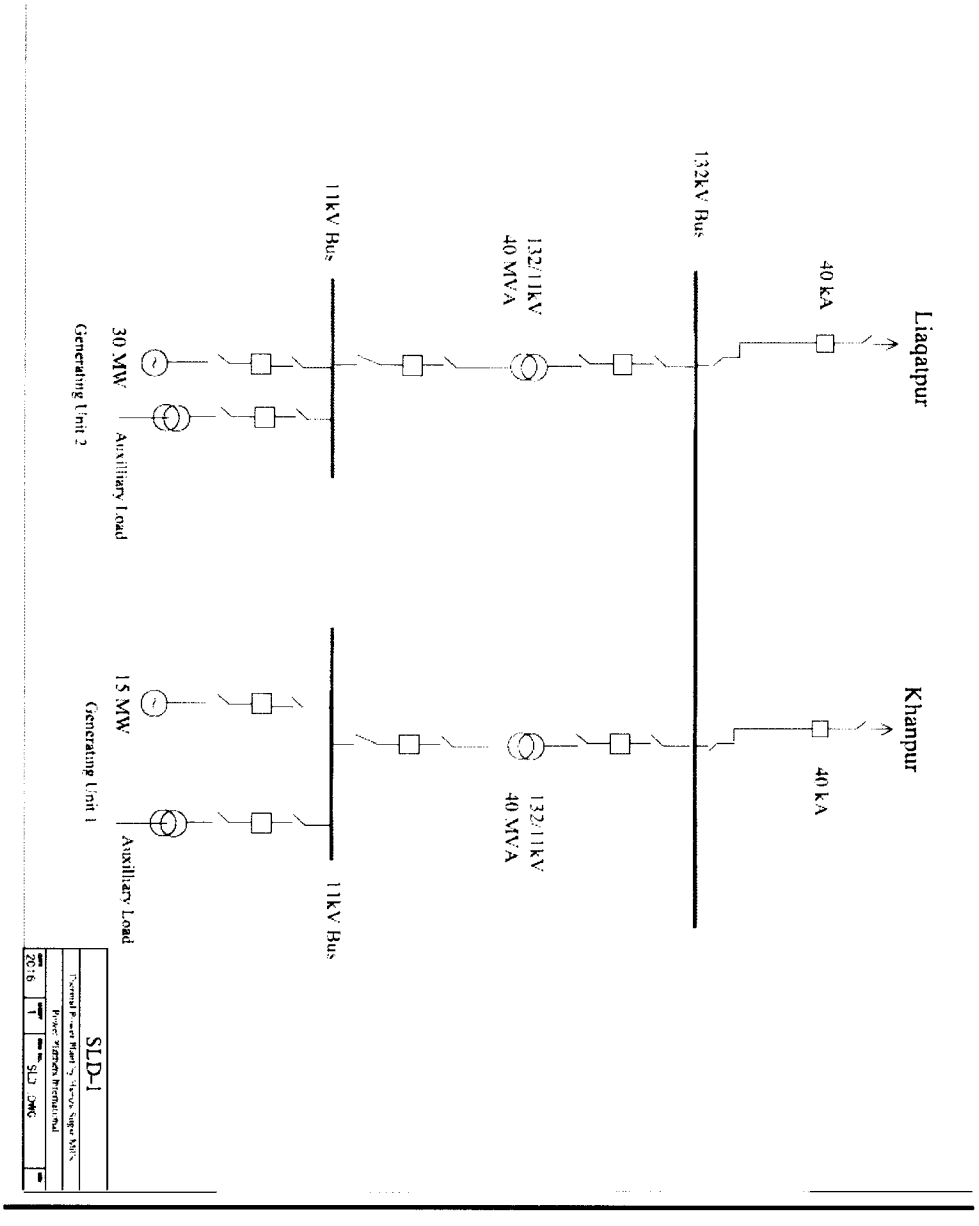
Process Diagram of the Generation Facility/Co-Generation Facility/Power Plant of the Licensee



Single line Diagram (Electrical) of the Generation Facility/Co-Generation Facility/Power Plant of the Licensee

Single line Diagram (Electrical) of the Generation Facility/Co-Generation Facility/Power Plant of the Licensee



Interconnection Arrangement for Dispersal of Electric Energy/Power from the Generation Facility/Co-Generation Facility/Power Plant

The electric power generated from the bagasse based Co-Generation Facility/Co-Generation Facility/Power Plant of the Licensee will be dispersed to the load center of MEPCO.

(2). The Interconnection Facilities (IF)/Transmission Arrangements (TA) for supplying to MEPCO from the above mentioned generation facility shall be at 132 KV level. The dispersal/interconnection arrangement will be consisting of 132 KV Double Circuit (D/C) Transmission Line (on ACSR LYNX Conductor) measuring about 1.3 Kilo-meter for making an In-Out of existing 132 KV S/C Khanpur-Liaqatpur transmission line connecting the generation facility/Co-Generation Facility/Power Plant to the network of MEPCO.

(3). The above IF/TA is based on the approval of MEPCO regarding the Grid Interconnection Study. Any change in the above mentioned IF/TA for dispersal of electric power as agreed by the Licensee, MEPCO or the Power Purchaser shall be communicated to the Authority in due course of time.

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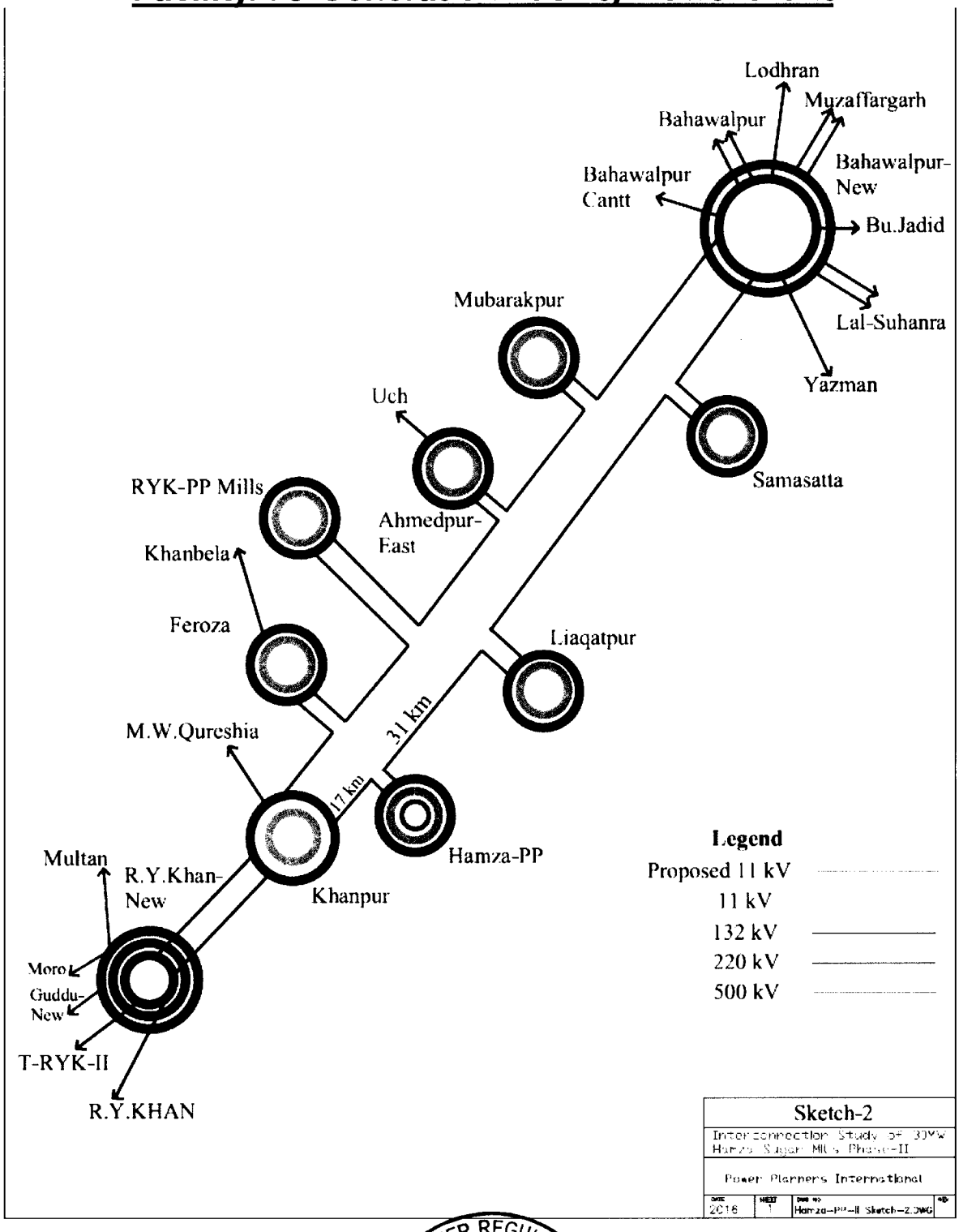
Schematic Diagram for Dispersal of Electric Energy/Power from the Generation Facility/Co-Generation Facility/Power Plant



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Details of Generation Facility/Co-Generation Facility/ Power Plant

(A). General Information

(i).	Name of the Company/Licensee	Hamza Sugar Mills Limited
(ii).	Registered Office of the Company	A/22, S.IT.E Mauripur Road, Karachi, in the province of Sindh
(iii).	Business Address/Office of the Company	-Do-
(iv).	Location of the Generation Facility	Jetha Bhutta, Tehsil Khanpur, District Rahimyar Khan, in the province of Punjab.
(v).	Type of the Generation Facility	Bagasse based, high-pressure generation facility/Co-Generation Facility/Thermal Power Plant.

(B). Configuration of Generation Facility

(i).	Installed Capacity/Size of the Generation Facility	30.00 MW.	
(ii).	Type of the Technology of the Generation Facility	Conventional Steam Turbine based Power Plant [1 x 30.00 MW extraction cum condensing Steam Turbine and One (01) Damping grate bagasse fired boiler Operating at 100 bar (kg/cm^2) and Producing 150 Tons of Steam Per Hour-TPH].	
(iii).	Number of Units & Size of Each Unit of the Generation Facility	Steam Turbine	1 x 30.00 MW

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(iv).	Make/Model/Type/ Year of Manufacture Etc. of each Unit of the Generation Facility	Steam Turbine	Guangzhou SKODA-JINMA Turbine Limited or Equivalent.
		Boiler	Damping grate type Boiler 150 TPH Capacity and 100 bar(kg/cm^2) GUANGXI WUGUO Boiler Manufacture Co. Ltd China or Equivalent.
(v).	Expected/ Anticipated COD of the Generation Facility	November 30, 2017	
(vi).	Expected Useful Life of the Generation Facility from COD	30 Years (Minimum)	

(C). Fuel/Raw Material Details

(i).	Primary Fuel	Bagasse	
(ii).	Alternate/Start Up Fuel	Furnace Oil	
(iii).	Fuel Source (Imported/Indigenous)	Primary Fuel	Alternate/ Start Up Fuel
		Indigenous	Indigenous/Imported
(iv).	Fuel Supplier	Primary Fuel	Alternate/ Start Up Fuel
		Hamza Sugar Mills Limited-HSM (primary)/other Bagasse suppliers (if available in the nearby area)	Pakistan State Oil (PSO)/Shell Pakistan Limited (Shell)
(v).	Supply Arrangement	Primary Fuel	Alternate/ Start Up Fuel

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		Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc.	Through Bousers/Oil Tankers etc.
(vi).	Sugarcane Crushing Capacity	24,500 Ton per day	
(vii).	Bagasse Generation Capacity	7,105 Ton per day	
(viii).	Fuel Storage facilities	Primary Fuel	Alternate/ Start Up Fuel
		Bulk Storage	One Tank
(ix).	Capacity of Storage facilities	Primary Fuel	Alternate/ Start Up Fuel
		150,000 Metric Tons bulk storage	400 Tons
(x).	Gross Storage Capacity	Primary Fuel	Alternate/ Start Up Fuel
		150,000 Metric Tons bulk storage	400 Tons

(D). Emission Values

		Primary Fuel	Alternate Fuel
(i).	SO_x	<8.46 mg/Nm^3	<264mg/Nm^3
(ii).	NO_x	<131 mg/Nm^3	<100 mg/ Nm^3
(iii).	CO_2	6.83%	11% -13%
(iv).	CO	<58 mg/Nm^3	<200mg/ Nm^3
(v).	PM_{10}	<163 mg/Nm^3	<150mg/Nm^3

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(E). Cooling System

(i).	Cooling Water Source/Cycle	Deep Bore Well Water/RCC Cooling tower of induced draft counter flow type. Make up water will be drawn from the bore wells/Closed loop.

(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	4 KW/Second		
(vi).	Time required to Synchronize to Grid	150 Minutes	90 Minutes	60 Minutes
		During cold start (i.e. when plant is started later than 72 hours after shutdown)	During warm start (i.e. when plant is started at less 36 hours after shutdown)	During Hot start (i.e. when plant is started at less than 12 hours after shutdown)

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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 are given in this Schedule

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SCHEDULE-II

		Season Operation	Off-Season Operation
(1).	Total Gross Installed Capacity of the Generation Facility	30.00 MW	30.00 MW
(2).	De-rated Capacity of Generation Facility at Reference Site Conditions	30.00 MW	30.00 MW
(3).	Auxiliary Consumption of the Generation Facility	02.34 MW	02.34 MW
(4).	Average Electric Power used by the sugar mill (i.e. Hamza Sugar Mills Limited-HZASML itself) from the Generation Facility at Reference Site Condition	04.01 MW	00.50 MW
(5).	Total Installed Net Capacity of Generation Facility at Reference Site Condition	19.65 MW	23.16 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/bi-lateral agreement or any other applicable document(s).

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