National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

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No. NEPRA/R/DL/LAG-412/1257-57 January 26, 2018

Mr. Masood ul Mulk,
Chief Executive Officer,
Sarhad Rural Support Programme (SRSP),
109, Street No. 2-B, Defense Officers Colony,
Khyber Road, Peshawar.

Subject: **Grant of Generation Licence No. SGC/123/2018**
Licence Application No. LAG-412
Sarhad Rural Support Programme (SRSP)

Reference: SRSP's application vide letter dated August 15, 2017 (received on October 12, 2018)

Enclosed please find herewith Determination of the Authority in the matter of Application of "Sarhad Rural Support Programme (SRSP)" for the Grant of Generation Licence along with Generation Licence No. SGC/123/2018 annexed to this determination granted by the National Electric Power Regulatory Authority (NEPRA) to Sarhad Rural Support Programme (SRSP) for its 02.00 MW Hydro Power Plant located on Golen River at Village Birmogh, Golen Gol Tehsil and District Chitral, in the province of Khyber Pakhtunkhwa 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 No. SGC/123/2018

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26.01.18
(Syed Safeer Hussain)

Copy to:

1. Chief Executive Officer, Peshawar Electric Supply Company Limited, PESCO House, Shami Road Peshawar.
2. Chief Executive Officer, CPPA-G, ENERCON Building, Sector G-5/2, Islamabad.
3. Chief Executive Officer, NTDC, 414-WAPDA House, Lahore.
4. Director General, Environment Protection Department, Government of KPK, 3rd Floor, Old Courts Building, Khyber Road, Peshawar.
5. Secretary, Energy and Power Department, Government of Khyber Pakhtunkhwa, 1st Floor, A-Block, Abdul-Wali Khan Multiplex, Civil Secretariat, Peshawar.
6. Chief Executive Officer, Pakhtunkhwa Energy Development Organization (PEDO), 221-PEDO House, Plot # 38, Sector B/2, Phase-V, Hayatabad, Peshawar.

National Electric Power Regulatory Authority (NEPRA)

Determination of the Authority in the Matter of Application of Sarhad Rural Support Programme for Grant of the Generation Licence for its Hydro Power Project

January 26, 2018
Case No. LAG-412

(A). Background

(i). The province of Khyber Pakhtunkhwa (KPK) due to specific location has a huge hydropower potential. This offers opportunities for development of micro, small, medium and large scale generation facilities/Hydropower Projects. In this regard, development of Hydropower Projects is prime factors for socio-economic development of the area by providing access to the cheap and environment friendly electricity.

(ii). Sarhad Rural Support Program (SRSP) is one of the largest non-profit/non-government organization of KPK. In addition to its other socio-economic endeavour, SRSP is working on exploration and harnessing the hydel potential of the province for socio-economic uplift of the local communities. In this regard, SRSP has constructed a 2.0 MW generation facility/Hydropower Plant at Golen, District Chitral, in the Province of KPK.

(B). Filing of Application

(i). SRSP submitted an application on October 12, 2017 for grant of the generation licence for its above mentioned 2.0 MW generation facility/Hydropower Plant 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 and found the same in substantial compliance of the Licensing Regulations. Accordingly, the Registrar submitted the application the Authority for its consideration. 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 November 08, 2017 for consideration of grant of the generation licence as stipulated in Regulation-7 of the Licensing Regulations. The Authority approved a notice of admission to invite comments of general public, interested and affected persons in the matter as stipulated in Regulation-8 of the Licensing Regulations. A notice was published in one (01) Urdu and one (01) English newspapers on November 11, 2017 in this regard.

(iii). In addition to the above, the Authority also 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 November 11, 2017, soliciting their comments for the assistance of the Authority.

(C). Comments of Stakeholders

(i). In response to the above, the Authority received comments from four (04) stakeholders. These included Energy Department Government of Sindh (EDGoS), Irrigation Department Govt. of the Punjab (IDGoPb), Indus River System Authority (IRSA) and Sinohydro-Sachal Consortium (SHSC). The comments received from the said stakeholders are summarized below:-

(a). EDGoS submitted that he energy mix needs to be rationalized by harnessing indigenous green energy resources as the prices of imported fuels are unpredictable. EDGoS stated that lesson must be learnt from the past experience and instead of depending upon imported fuels projects should be developed on indigenous resources. Further, it was stated that development of hydropower projects may be preferred as the same will not only help to resolve the energy issues of availability and affordability but also the energy security. EDGoS submitted that development of generation facility/Hydropower Plant in Chitral will not only generate power but also benefit the local community at large. EDGoS supported grant of the generation licence to SRSP;

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(b). IDGoPb commented that the generation facility/Hydropower Plant of SRSP is run of river type and shall not be consuming any water hence this department has no objection to the construction of the project;

(c). IRSA submitted that SRSP may be directed to submit a copy of the PC-I of the project as well as formerly apply IRSA for No Objection Certificate (NOC), regarding the project; and

(d). SHSC in its comments informed that Private Power and Infrastructure Board (PPIB) had issued LOI dated March 20, 2017 to the company (i.e. SHSC) for development of Turtonas-Uzghor hydropower plant located near the generation facility/Hydropower Plant of SRSP. The feasibility study of the project is in advance stage of completion and the sponsors have already achieved several milestones that include completion of topographic survey, geotechnical investigation & alternative layout report and submission of the same to the Panel of Experts of PPIB. The PPIB approved two alternative layouts for the project with an initial plant capacity of at least 72.00 MW. According to the project alternative layout report, the Weir/Intake of Turtonas-Uzghor plant will be around 300 meters above the SRSP Weir/Intake. Therefore, SRSP project will be operated on remaining water available after considering water intake of Turtonas-Uzghor plant. Moreover, during the winter season the hydrology of Golen Gol may not allow SRSP project to be operational, as maximum water will be diverted for the power generation from Turtonas-Uzghor plant. The Sponsors of the project contacted PPIB regarding the SRSP's Project and were informed that the Turtonas-Uzghor project was advertised by them only after receiving the relevant consents from the provincial government/relevant entities. Moreover, SRSP while implementing their project in isolation did not receive any provincial or federal consent/approval. Therefore, the Authority may consider the above mention facts and interests of the sponsors of Turtonas-Uzghor plant before issuing generation

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licence to SRSP.

(ii). The Authority considered the above comments of stakeholders and decided to obtain prospective of SRSP on the comments of IRSA and SHSC. Regarding comments of IRSA, the sponsors of the project i.e. SRSP submitted that the matter had already taken up with IRSA and had required documents in this regard, including PC-I of the project had been submitted for issuance of the required NOC. However, due to non availability of members, the required meeting of IRSA could not be scheduled. Once the meeting is held, the NOC would be issued to SRSP. In this regard, SRSP confirmed that as soon as the NOC is received, the same will be submitted to the Authority for its record.

(iii). On the observations/comments of SHSC, it was asserted that in order to provide the local community with sustainable means of living and eliminate poverty in the area, SRSP has invested millions of dollars in its current project. Further, its generation facility/Hydropower Plant is already in operation and has despatched over three millions unit to Peshawar Electric Supply Company Limited (PESCO). In view of the said, the consortium of the new project may make appropriate changes to ensure that the same is developed without any hindrance and compromising the availability of water for the project of SRSP.

(iv). The Authority considered the above submissions of SRSP on the comments/observations of the stakeholders and decided to proceed further in the matter, as stipulated in the Licensing Regulations and the NEPRA Licensing (Generation) Rules 2000 (the "Generation Rules").

(D). Evaluation/Findings

(i). The Authority has considered the entire case in detail including the information provided by the applicant with the generation licence application, feasibility study of the project, the Grid Interconnection Study (GIS) and relevant rules & regulations.

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(ii). The Authority observes that applicant i.e. SRSP is one of the largest non-government, non-profit organization operational in KPK and Federally Administered Tribal Areas (FATA). SRSP was established in 1989 and was

registered under Section 40 of the Companies Ordinance, 1984 (XLVII of 1984) vide company registration No. P-00337 of 1989-90 dated November 27, 1989.

(iii). SRSP was established to reduce rural poverty and ensure sustainable means of livelihoods in urban and, especially, rural areas of KPK. Further, the core competencies of SRSP include strengthening and improving rural livelihoods through formation of community based three tier institutions, developing their technical and managerial capacities, undertake community physical infrastructure schemes, extending micro credit loans through innovative products and packages, improving management of natural resources, support gender development and environment preservation. The memorandum of association of SRSP inter alia includes the generation and distribution of electricity in its objectives.

(iv). In view of the prevailing energy crisis in the country especially in the remote rural areas of KPK, SRSP decided to develop a generation facility/Hydropower Plant in District Chitral. In order to finance the project, SRSP, inter alia, explored various options and identified the provision of European Union grant, which could be utilized to meet the objective. After protracted negotiations, SRSP and European Union entered into a Grant Contract No. DCI-ASIE/2011/283-011 on August 08, 2012, whereby the European Union granted a total amount of €40,000,000 to SRSP under its Programme for Economic Advancement Community Empowerment (PEACE). The implementation period for the execution of PEACE was sixty-six (66) months.

(v). The Authority has observed that SRSP carried out the feasibility study of the project through DESIGNMEN Consulting Engineers (Pvt.) Limited. The feasibility study inter alia includes, selection of equipment for the generation facility/Hydropower Plant, soil tests reports, technical details pertaining to selection of turbine generator and other allied equipment, electrical studies, and environmental study etc. According to the feasibility study, SRSP has set up a 2.00 MW generation facility/Hydropower Plant.

(vi). The Authority observes that current application of SRSP pertains to a generation facility/Hydropower Plant already set up at Birmogh Village, Golen, District Chitral in the Province of KPK. The total installed capacity of the

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generation facility/Hydropower Plant is 2.0 MW consisting of two (02) Horizontal Francis type turbines (2 x 1.0 MW). The said capacity of the project has been optimized keeping in view the design discharge of 4.0 m^3/s. The gross head of the generation facility/Hydropower Plant is 62 meters whereas the net head is 57 meters. The project is run of river type with mean annual energy of 16.47 GWh at plant factor of 95.17%.

(vii). The Authority has observed that SRSP has carried out GIS for the project through Welt Connect (Pvt.) Limited and PESCO has endorsed the same. According to said GIS the dispersal of electric power is at 33 KV voltage. The dispersal/interconnection arrangement consists of of a 33 KV Single Circuit (S/C) transmission line (on Dog Conductor) measuring about twenty six (26.00) kilometer directly connecting the generation facility/Hydropower Plant to 33 KV Jutilasht grid station of PESCO.

(viii). The Authority is encouraged that the generation facility/Hydropower Plant of SRSP utilizes water for power generation which is renewable energy source. However, the Authority has observed that the operation of the generation facility/Hydropower Plant may cause some environmental concerns including soil pollution, water pollution and noise pollution. The Authority has observed that SRSP carried out the required Initial Environment Examination and submitted the same for the consideration and approval of the Environment Protection Agency, GoKPK (EPAGoKPK). In this regard, EPAGoKPK has issued No Objection Certificate (NOC) for the construction of the project.

(ix). Regarding land of the project, the Authority observes that the total area of the power house and residential facility comprises of 3 Acres of land. The same has been already acquired by SRSP on long term lease basis. Along with the lease amount, SRSP has also committed to utilize human resource and to initiate development programmes in the area adjacent to the generation facility/Hydropower Plant.

(x). 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 subject to the requisites and criteria mention in the said rules. In this particular case under consideration, the Authority has observed that SRSP has provided details of

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location, technology, size, net capacity/energy yield, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facility/Hydropower Plant satisfying the provisions of Rule-3(2) and Rule-3(3).

(xi). 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 renewable energy or non-renewable energy 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 against the preferences indicated by the Authority; (d). the cost and right-of way considerations related to the provision of transmission and interconnection facilities; (e). the constraints on the transmission system likely to result from the proposed generation facility 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; 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.

(xii). In consideration of the above, the Authority considers that the generation facility/Hydropower Plant will result in optimum utilization of the renewable energy which was earlier untapped, resulting in pollution free electric power. The Authority is of the considered opinion that hydro is an indigenous fuel and such fuels should have a preference for the energy security. It is further clarified that SRSP carried out detailed layout alternatives study on the basis of topographic survey conducted during the feasibility study and selected the best suitable alternative which is having lesser cost per unit. The generation facility/Hydropower Plant is already connected to PESCO network and since March 15, 2017, SRSP has delivered more than three million units to PESCO without any system constraint.

(xiii). In addition, the Authority is also aware of the fact that communities at remote areas of the country (like Chitral) are experiencing a supply demand gap at the moment. The said gap can be bridged by maximum utilization of

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indigenous resources specially the hydel potential in the area. In this regard, it is relevant to mention that SRSP has already developed the generation facility/Hydropower Plant and has started delivering relatively cheap and environment friendly energy to PESCO. Foregoing in view, the Authority is of the considered that the project of SRSP fulfills the eligibility criteria for grant of generation licence as stipulated in the NEPRA Act, rules and regulations and other applicable documents.

(E). Grant of the 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 renewable energy 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 renewable energy 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 renewable energy and envisages that at least 5% of total national power generation capacity (i.e. 9700 MW) to be met through renewable energy resources by 2030.

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(iii). The Authority considers that the project of SRSP 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. As explained in the preceding paragraphs above, SRSP has provided the details of location, technology, size, net

capacity/energy yield, interconnection arrangements, technical details and other related information for the generation facility/Hydropower Plant.

(iv). Regarding land of the generation facility/Hydropower Plant, it is clarified that sponsors of the project acquired around three (03) acres of land for setting up the HPP. In this regard, the Authority directs SRSP that the aforementioned land shown in Schedule-I of the generation licence, shall exclusively be used by it for the generation facility/Hydropower Plant and SRSP cannot carry out any other activity on this land except with prior approval of the Authority.

(v). The term of a generation licence under Rule-5(1) of the Generation Rules is to be commensurate with the maximum expected useful life of the units comprised in a generating facility unless the applicant consents for a shorter term. According to the information provided by SRSP, the COD of generation facility is March 15, 2017. SRSP has submitted that the useful life of its generation facility/Hydropower Plant will be more than thirty (30) years but considering the fact that it will be entering into an Energy Purchase Agreement (EPA) with the Power Purchaser for thirty (30) years, SRSP has requested that the term of the generation licence may be fixed to thirty (30) years in consistent with the term of the proposed EPA to be signed with the Power Purchaser. The Authority considers that said submission of SRSP about the useful life of the generation facility/Hydropower Plant and the subsequent request of SRSP 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.

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(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. SRSP has submitted a tariff petition under the relevant rules for determination of tariff of its generation facility/Hydropower Plant for supplying to the Power Purchaser. The Authority has admitted the tariff petition and the same is in advanced stage of processing. Notwithstanding the said, the Authority hereby directs SRSP to charge the Power Purchaser only such tariff which has been determined, approved or specified by the Authority. In this regard, a specific article (i.e. Article-6) has been included in the generation licence.

(vii). Regarding compliance with the environmental standards, as explained above, SRSP has provided the NOC from EPAGoKPK for construction of the project. Further, in view of the importance of the issue, the Authority has included an exclusive article (i.e. Article-10) in the generation licence, making it obligatory for SRSP to comply with relevant environmental standards at all times. Further, the Authority directs SRSP to submit a report on a bi-annual basis, confirming that operation of its generation facility/Hydropower Plant is in compliance with the required environmental standards as prescribed by the concerned environmental protection agency.

(viii). Regarding NOC from IRSA, the Authority has observed that the generation facility/Hydropower Plant of SRSP is run of river type. In this regard, as clarified in Para C(ii) above, on the specific observations of IRSA, SRSP took up the matter for issuance of the required NOC. In this regard, SRSP submitted the required documents including PC-I of the project, However, reportedly due to non availability of members, the required meeting of IRSA could not be scheduled. Once the meeting is held, the NOC would be issued to SRSP. In this regard the Authority is constrained that it cannot hold the application for an indefinite time. In view of the said, the Authority hereby directs SRSP to submit the required NOC as soon as the same is received.

(ix). Regarding GIS of the project, the Authority has observed that SRSP has carried out GIS for the project according to which the dispersal/interconnection arrangement consists of a 33 KV Single Circuit (S/C) transmission line (on Dog Conductor) measuring about twenty six (26.00) kilometer directly connecting the generation facility/Hydropower Plant to 33 KV Jutilasht grid station of PESCO. The Authority has further observed that although the relevant DISCO has endorsed the GIS of the project, however being part of the national transmission system, the GIS is also required to be endorsed by NTDC. Accordingly, the Authority hereby directs SRSP to submit the approval of the GIS from NTDC, within three (03) months of grant of the generation licence.

(x). The generation facility/Hydropower Plant of SRSP will be using renewable 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. SRSP has informed that the project has achieved COD on March 15, 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 SRSP to initiate the process in this regard at the earliest so that the proceeds of carbon credits are materialized. SRSP will be required to share the proceeds of the carbon credits with the Power Purchaser as stipulated in Article-12 of the generation licence.

(xi). In view of the foregoing, the Authority hereby approves the grant of generation licence to SRSP on the terms and conditions set out in the generation licence annexed to this determination. Further, grant of the generation licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed thereunder and other applicable documents.

Authority

Syed Masood-ul-Hassan Naqvi
(Member)

Himayat Ullah Khan
(Member)

Saif Ullah Chattha
(Member/Vice Chairman)

23.1.2018

Tariq Saddozai
(Chairman)

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26.01.18

National Electric Power Regulatory Authority (NEPRA)
Islamabad – Pakistan

GENERATION LICENCE
No.SGC/123/2018

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

Sarhad Rural Support Programme/SRSP
Incorporated under Section 40 of the Companies Ordinance, 1984 (XLVII of 1984) vide company registration No. P-00337 of 1989-90 dated November 27, 1989

for its Generation Facility/Hydel Power Plant located on Golen River at Village Birmogh, Golen Gol Tehsil and District Chitral, in the Province of Khyber Pakhtunkhwa

(Installed Capacity: 02.00 MW Gross)

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

Given under my hand on 26th day of **January Two Thousand & Eighteen**, and expires on **14th** day of **March, Two Thousand & Forty Seven**.

26 01 18

Registrar

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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). "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;

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

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

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

(f). "Carbon Credits" mean the amount of carbon dioxide (CO_2) and other greenhouse gases not produced as a result of generation of electric power by the generation facility/Hydel Power Plant of the Licensee and other environmental air quality credits and related emissions reduction

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credits or benefits (economic or otherwise) related to the generation of electric power by the generation facility/Hydel Power Plant, which are available or can be obtained in relation to the generation facility/Hydel Power Plant after the COD;

(g). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility/Hydel Power Plant of the Licensee is Commissioned;

(h). "Commissioned" means the successful completion of commissioning of the generation facility/Hydel Power Plant for continuous operation and dispatch to the Power Purchaser;

(i). "Commissioning Tests" means the tests to be carried out pursuant to provisions of EPA;

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

(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/Hydel Power Plant, as may be amended by the parties thereto from time to time;

(m). "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 the approval by the Authority;

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

(o). "Hydel Power Plant" means a generation facility using water flows of canal or rivers for generation of electric power;

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

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

(r). "Licensee" means **Sarhad Rural Support Programme (SRSP)** and its successors or permitted assigns;

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

(t). "Net Delivered Energy" means the net electric energy expressed in kWh generated by the generation facility/Hydel Power Plant of the Licensee at its outgoing Bus Bar and delivered to the Power Purchaser;

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

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(v). "PESCO" means Peshawar Electric Supply Company Limited and its successors or permitted assigns;

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

(x). "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;

(y). "SCADA System" means the supervisory control and data acquisition system for gathering of data in real time from remote locations to control equipment and conditions;

(z). "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 generation facility/Hydel Power Plant of the Licensee are set out in Schedule-I of this licence.

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3.2 The net capacity/Net Delivered Energy of the generation facility/Hydel 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/Hydel 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/Hydel 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 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.

Article-10
Compliance with Environmental & Safety Standards

10.1 The generation facility/Hydel 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/Hydel Power Plant is in conformity with required environmental standards as prescribed by the relevant competent authority.

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Article-11
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/Hydel Power Plant. The Licensee shall be responsible for the up-gradation (step up) of generation voltage up to the required dispersal voltage level.

Article-12
Performance Data

12.1 The Licensee shall install SCADA System or compatible communication system at its generation facility/Hydel Power Plant as well as at the side of the Power Purchaser.

12.2 The Licensee shall transmit the data for the flow of water and electric power output data of its generation facility/Hydel Power Plant to the control room of the Power Purchaser.

Article-13
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-14
Emissions Trading/Carbon Credits

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

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Article-15
Design & Manufacturing Standards

The generation facility/Hydel Power Plant of the Licensee shall be designed, manufactured and tested according to the latest IEC or IEEE or any other equivalent standard. All the plant and equipment of the generation facility/Hydel Power Plant shall be unused and brand new.

Article-16
Power Curve

The Power Purchaser shall verify the power curve of the generation facility/Hydel Power Plant of the Licensee, as part of the Commissioning Tests according to the latest IEC or IEEE or any other equivalent standard and shall be used to measure its performance.

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SCHEDULE-I

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

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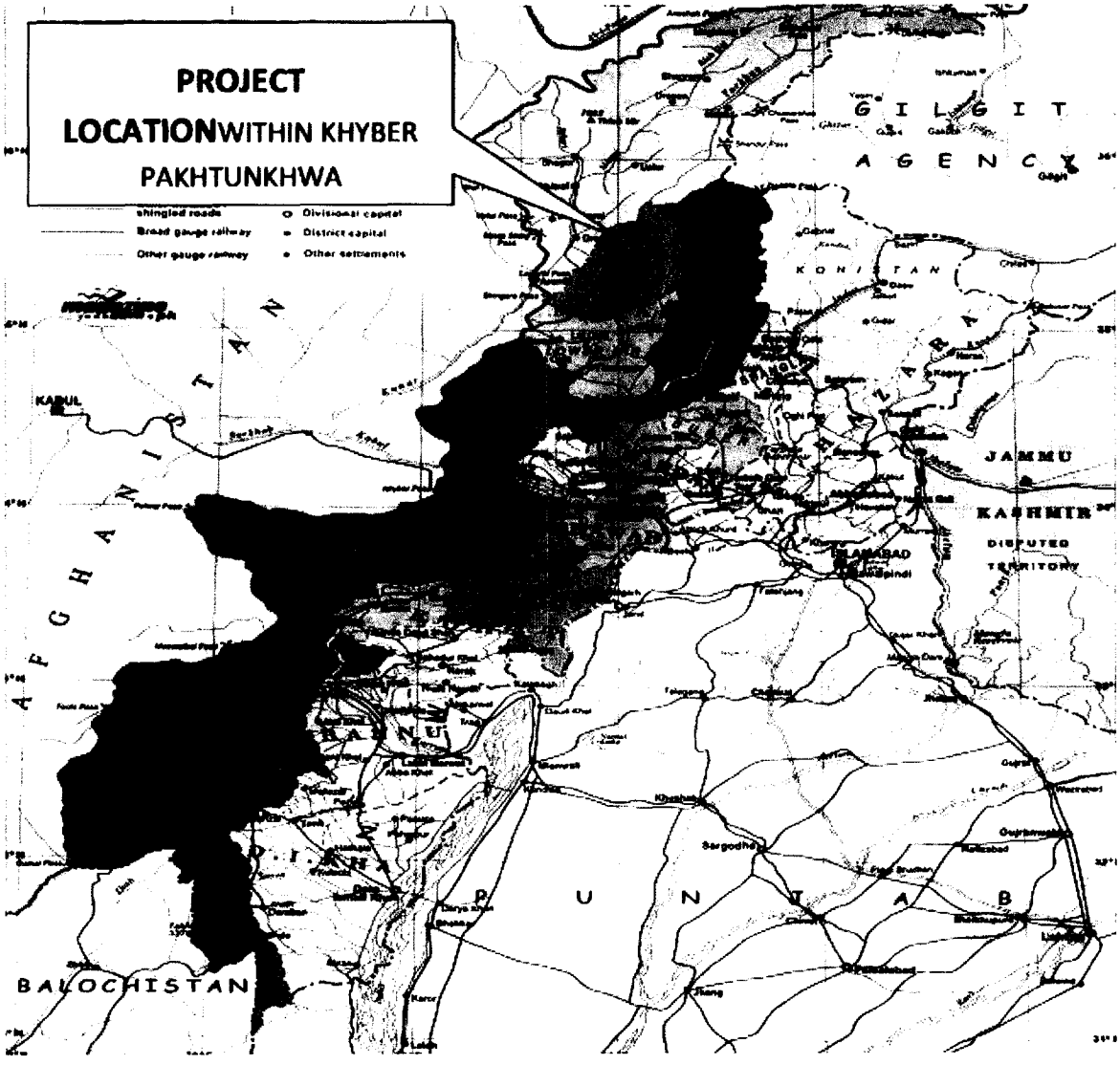
Location of the Generation Facility/Hydro Power Plant of the Licensee

Location of the Generation Facility/Hydro Power Plant of the Licensee



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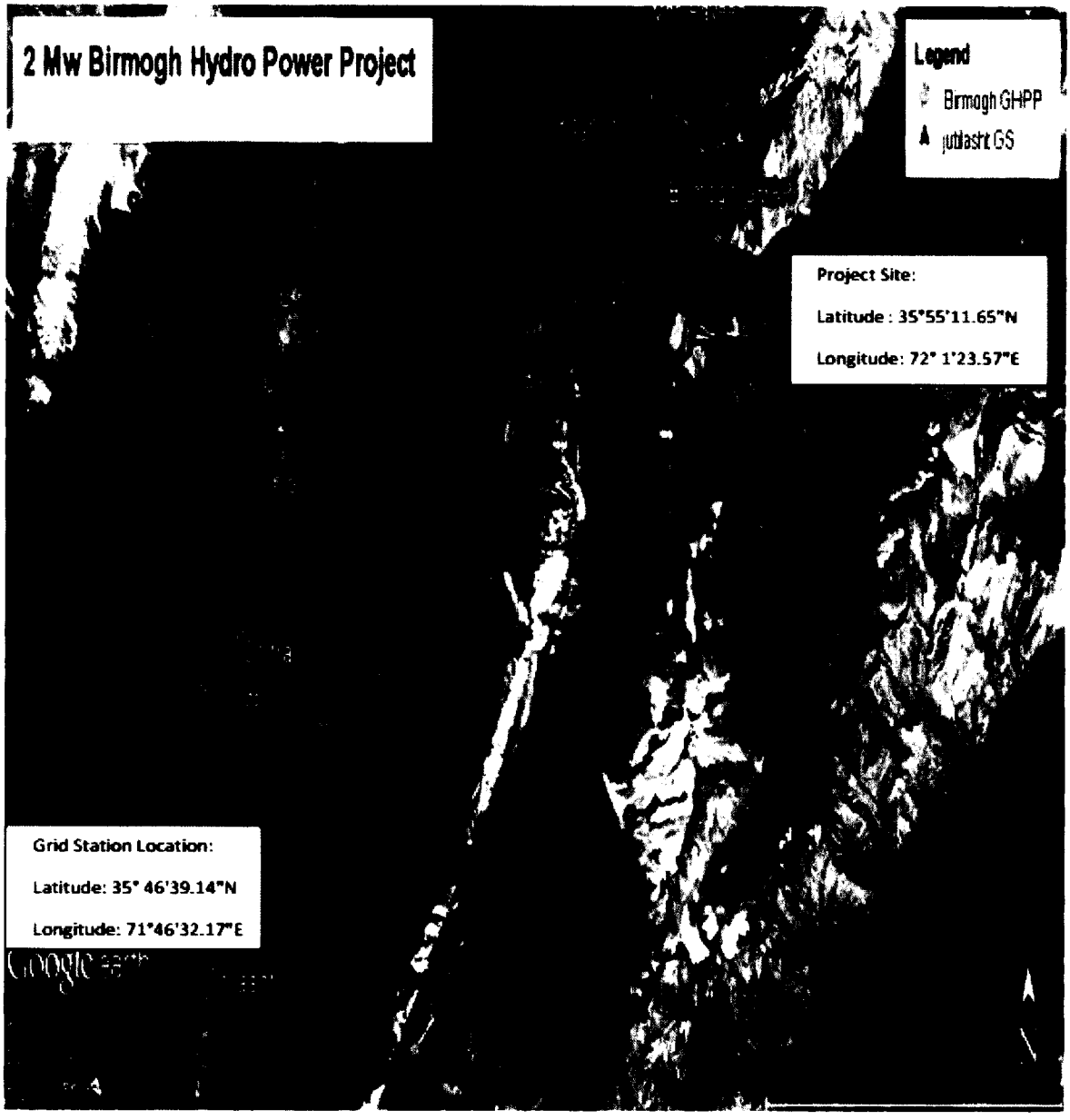
Land Coordinates of the Generation Facility/Hydro Power Plant of the Licensee



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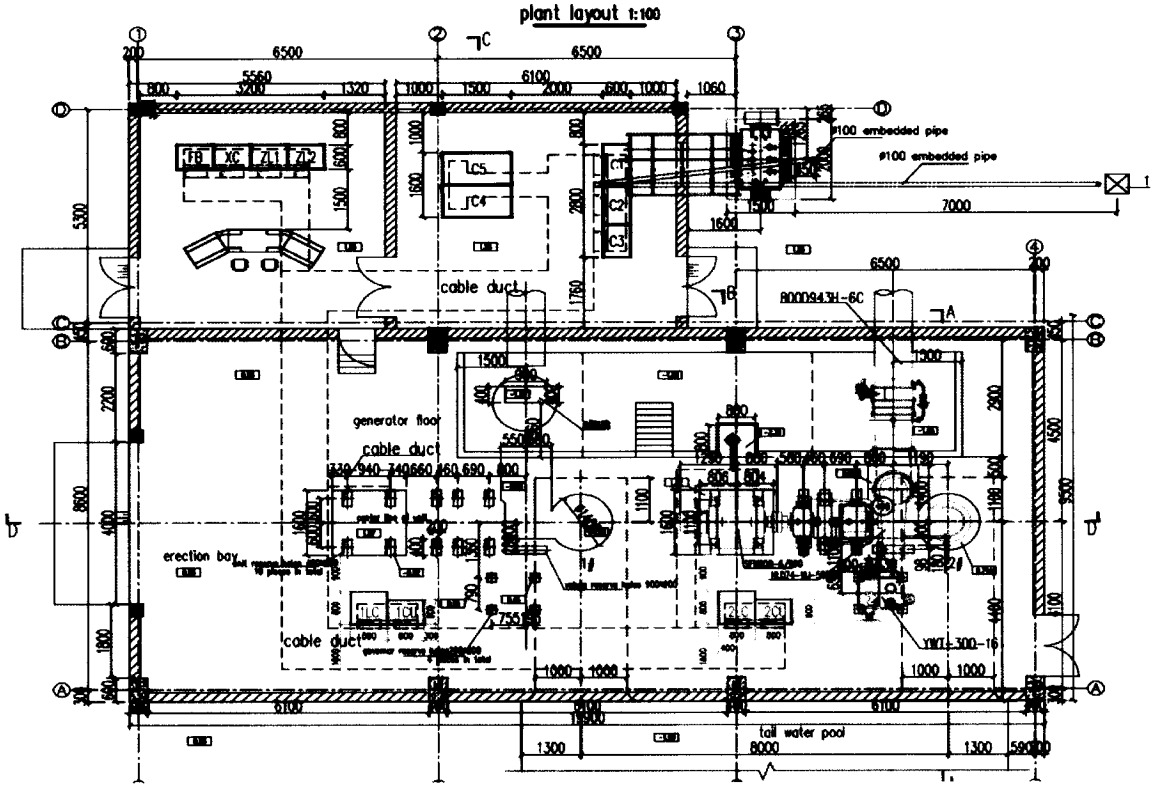
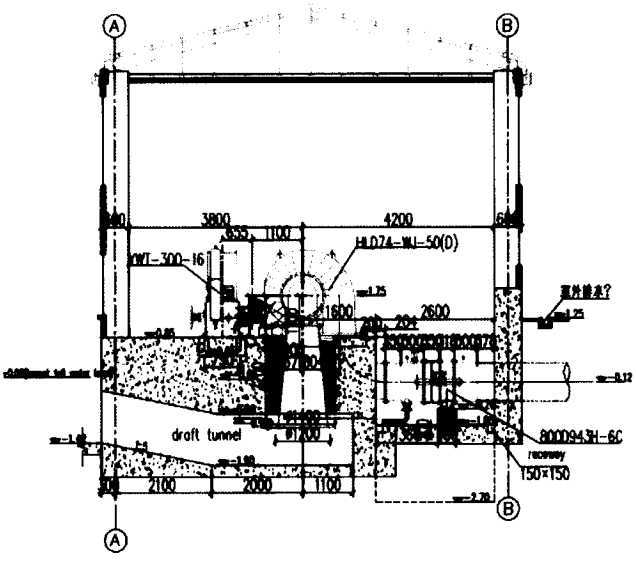
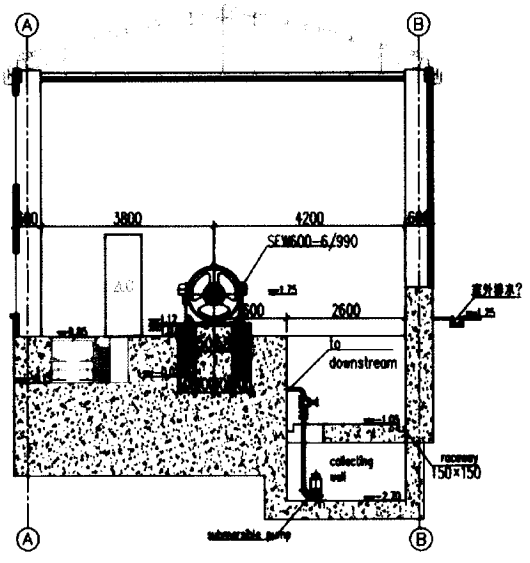
Lay-out of the Generation Facility/Hydro Power Plant of the Licensee







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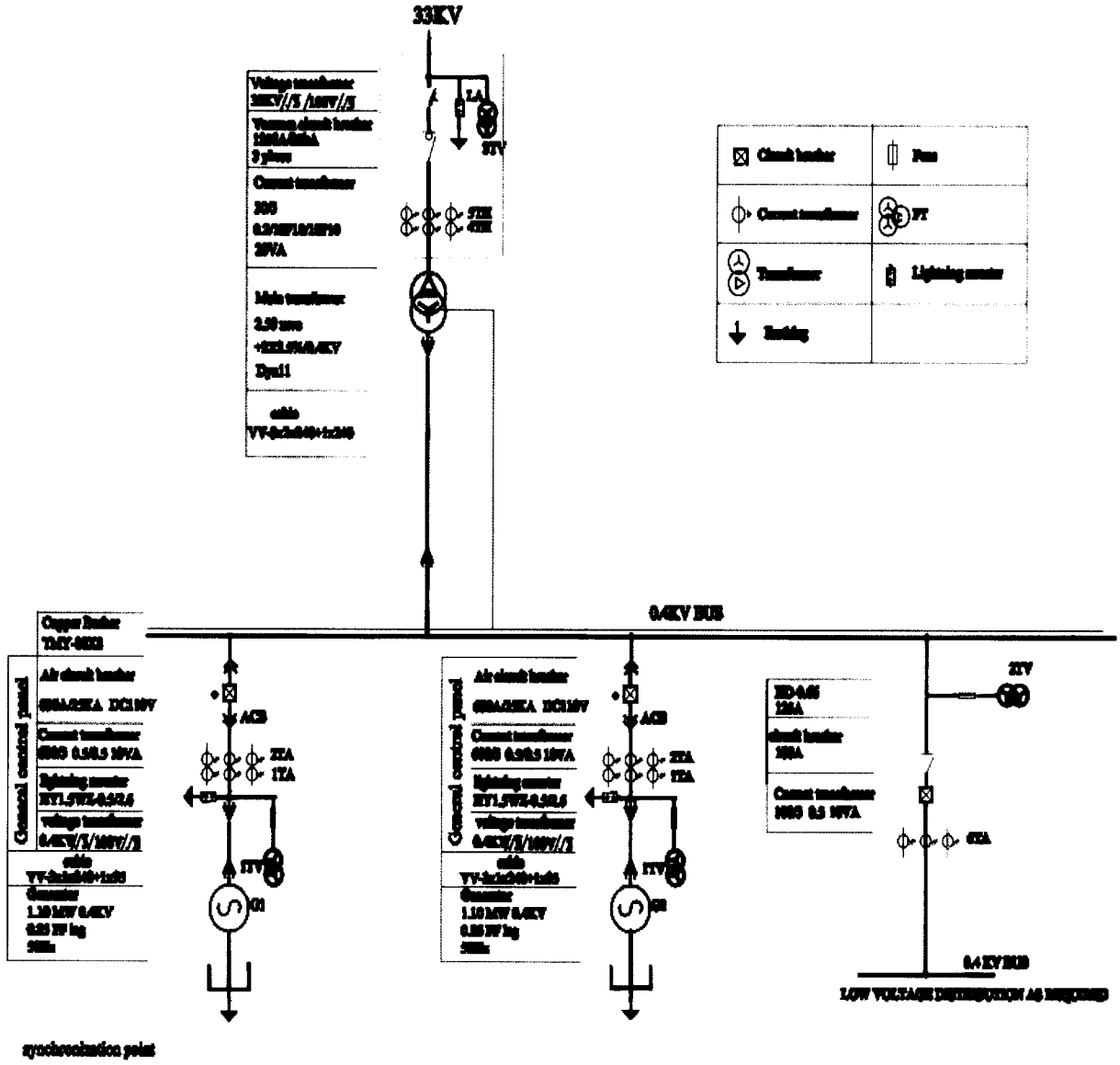
Single line Diagram (Electrical) of the Generation Facility/Hydro Power Plant of the Licensee



Interconnection Arrangement for Dispersal of Electric Energy/Power from the Generation Facility/Hydel Power Plant of the Licensee

The electric power generated from the generation facility/Hydel Power Plant of the Licensee/SRSP shall be dispersed to the load center of Peshawar Electric Supply Company Limited (PESCO).

(2). The interconnection facilities/transmission arrangement for supplying to PESCO shall be at 33 KV level. The dispersal/interconnection arrangement will be consisting of a 33 KV Single Circuit (S/C) Transmission Line (on Dog Conductor measuring about twenty six (26) Kilo Meters in length) directly connecting the generation facility to 33 KV Jutilasht grid station of PESCO.

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

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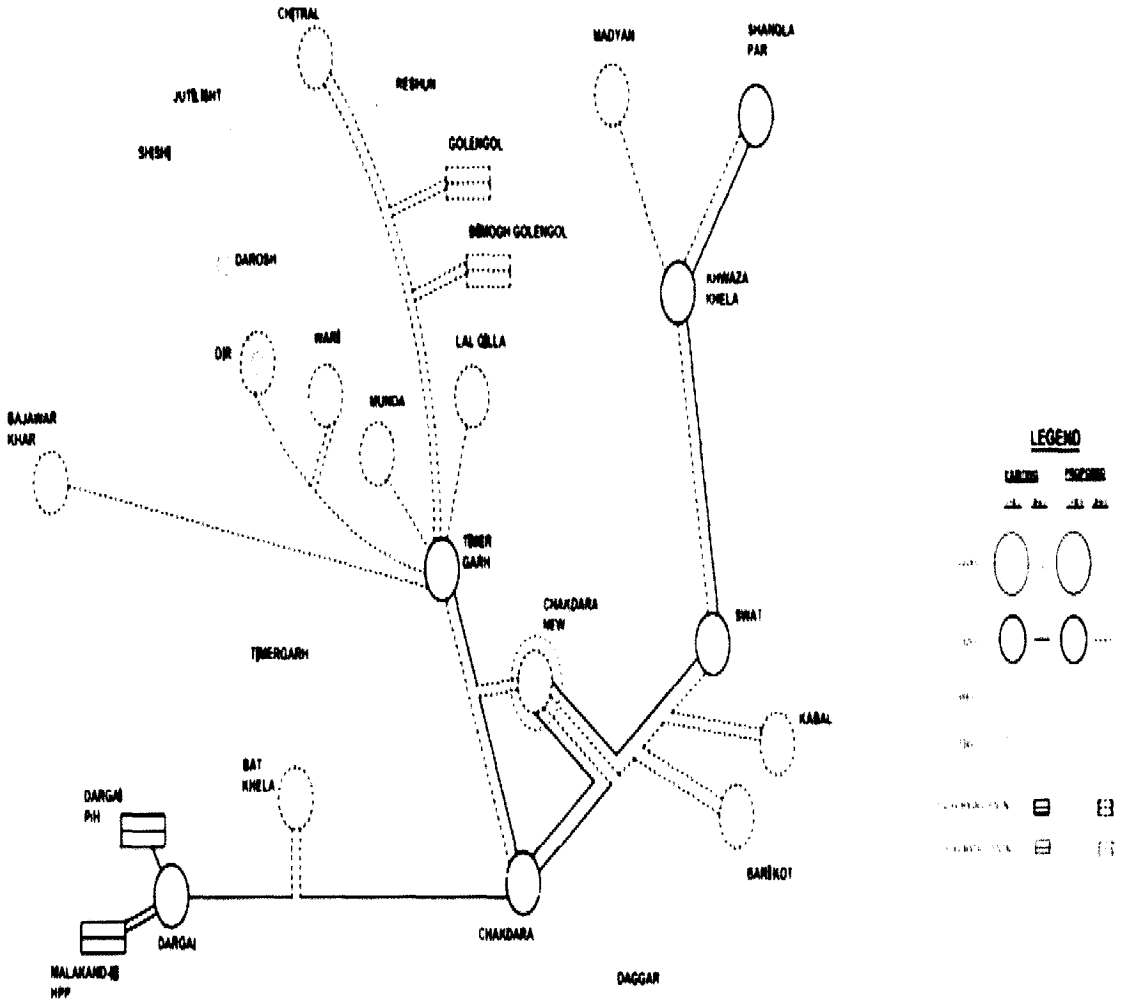
Schematic Diagram for Dispersal of Electric Energy/Power from Generation Facility/Hydro Power Plant of the Licensee



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Details of Generation Facility/Hydel Power Plant Of the Licensee

(A). General Information

(i).	Name of the Licensee/ Company	Sarhad Rural Support Programme (SRSP)
(ii).	Registered/Business Office of the Licensee/ Company	House# 109, Street No. 2B, Defence Officer's Colony, Khyber Road, Peshawar
(iii).	Location of the Generation Facility	Village Birmogh, Golen Gol, Tehsil & District Chitral, in the Province of Khyber Pakhtunkhwa
(iv).	Type of Generation Facility	Run of River Hydro Power Plant

(B). Hydrology

(i).	Name of River	Golen River
(ii).	Catchment area	405 km^2
(iii).	Normal Reservoir Level	3284 Meter
(iv).	Design discharge for power	4.00 m^3/sec
(v).	Flood discharge 100 yr	814.44 m^3/sec
(vi).	Flood discharge 1000 yr	1077 m^3/sec

(C). Diversion Weir

(i).	Type	Tyrolean Weir Type
(ii).	Crest level of Tyrolean section	2560.25 m.a.s.l.
(iii).	Crest of overflow section	2561.75 m a.s.l.

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(iv).	Min. Head on crest	1.5m
(v).	Length of weir	N/A build on runoff river
(vi).	Design Flood	100 year frequency
(vii).	Flood discharge	686 m3/sec
(viii).	Surcharge due to design flood	3.38 m
(ix).	Weir height	N/A
(x).	Stilling Basin	Available
(xi).	Size of basin	45 x 18 m
(xii).	Embedded channel design	25% extra over discharge (6.5 m^3/s)
(xiii).	Size of embedded channel	6 x 4.0 m
(xiv).	Size of intake gate	Lift gate (1.2 x4m) 2Nos
(xv).	Water level in embedded channel	2560.35 m.a.s.l.

(D). Sand Trap

(i).	No of Chambers	One
(ii).	Limit particle size	0.2 mm
(iii).	Average velocity in chambers	0.2.16 m/sec
(iv).	Length of chamber	15 m
(v).	Length of upstream transition	9 m
(vi).	Length of downstream transition	6.0 m
(vii).	Freed board	0.4 m
(viii).	Size of Chamber at start	B = 5m , D = 5.45 m

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(ix).	Control valve	1 No
(xii).	Flushing Arrangement	Chamber valve with MS pipe of 1m
(xiii).	Flushing discharge	2.0 m3/sec, i.e. 25% of design discharge
(xiv).	Spillway section	Overflow (open channel)
(xv).	Crest level of spill section	1412.10 m.a.s.l.
(xvi).	Length of spill section	150 m
(xvii).	Surcharge due to overflow	0.2 m

(E). Headrace Channel

(i).	Type	Concrete lined Rectangular section
(ii).	Design discharge	6.50 m^3/sec
(iii).	Invert level	2558.95 m.a.s.l.
(iv).	Water level at start	2560.45 m.a.s.l.
(v).	Size of channel	3 x 1.57 m
(vi).	Bed slope	1 in 1000 m
(vii).	Free board	0.25 m
(viii).	Flow velocity in Headrace channel	1.67 m/sec
(ix).	Total length of Headrace channel	615 m

(F). Surge Tank

(i).	Type	Simple orifice type
(ii).	Maximum Surge level	2559.95 m.a.s.l.

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(iii).	Minimum Surge level	2554.70 m.a.s.l.
(iv).	Head losses	0.05 m
(v).	Length of surge tank	5 m
(vi).	Height of surge tank	5.450 m

(G). Penstock Steel

(i).	Invert level of Penstock	2565 m.a.s.l.
(ii).	Total length of Penstock	266 m
(iii).	Diameter of penstock	1.2 m
(iv).	Thickness of penstock	09 ~10 mm
(v).	Average velocity in penstock	3.5 m/sec
(vi).	Gross head at penstock	65 m
(vii).	Head losses in Penstock	2.31 m
(viii).	Invert level of penstock at powerhouse	2500 m.a.s.l.
(ix).	Bifurcation length	Main line 266m with Y-Section 8meter each
(x).	Diameter of Bifurcation	0.6 m

(H). Power Facilities

(i).	Powerhouse	Surface powerhouse
(ii).	Size of Powerhouse	22.60 x 14.40 m
(iii).	Turbine	Horizontal Francis
(iv).	Number of Units	Two

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(v).	Turbine Capacity	4.0 m^3/sec
(vi).	Generator Capacity	(1.18 x2 MVA)
(vii).	Gross Head	65.0 m
(viii).	Net Head	59.00 m
(ix).	Net head losses	6 m
(x).	Installed capacity	2.20 MW
(xi).	Average annual energy	16.47 GWh
(xii).	Plant Factor	95.17 %

(I). Tailrace Channel

(i).	Type	Rectangular concrete channel
(ii).	Dimension	4.0 x 2.60 m
(iii).	Average velocity	1.7 m/sec
(iv).	Flow depth	2.35 m
(v).	Length of channel	70 m
(vi).	Free board	0.25 m

(J). Other Information

(i).	COD of the Generation Facility/Hydel Power Plant	March 15, 2017
(ii).	Expected Minimum Useful Life of the Generation Facility from COD	30 Years

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SCHEDULE-II

The Total Installed Gross Capacity (MW), De-Rated Capacity at Reference Site Conditions (MW), Auxiliary Consumption (MW) and the Net Capacity at Reference Site Conditions (MW) of the Generation Facility of Licensee are given in this Schedule

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SCHEDULE-II

(1).	Total Installed Gross Capacity of the Generation Facility (2 x 1 MW horizontal Francis Turbines)	2.0 MW
(2).	De-Rated Capacity of the Generation Facility at Reference Site Conditions	2.0 MW
(3).	Total Auxiliary Consumption of the Generation Facility	00.20 MW
(4).	Net Capacity of the Generation Facility at Reference Site Conditions	1.80 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 (EPA) or any other applicable document(s).

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