

**SRSP**

SARHAD RURAL SUPPORT  
PROGRAMME

Head Office  
109, Street No.2-B  
Defence Officer's Colony  
Khyber Road, Peshawar, Pakistan

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F: +92 (91) 5276734  
E: srsc@brain.net.pk

Ref: SRSP/CEO/870

Date: August 15, 2017

**The Registrar**

National Electric Power Regulatory Authority—

NEPRA Tower, Ataturk Avenue (East), Sector G-5/1  
Islamabad, Pakistan.

SUBJECT: **APPLICATION FOR GENERATION LICENCE**

I, Mr. Masood ul Mulk, Chief Executive Officer (CEO) of Sarhad Rural Support Programme (the "Company" or "SRSP") am the duly authorized representative on behalf of the Company by virtue of a Board Resolution dated 16th Feb, 2017, appended herewith, hereby apply to the National Electric Power Regulatory Authority ("NEPRA or Authority") for \ Generation License for the Company in respect of the Company's 2 MW Hydropower plant located at Village Birmogh Golen, Union Council Koh, District Chitral, Khyber Pakhtunkhwa (the "Project") pursuant to section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

I certify that the documents-in-support attached with this application are prepared and submitted in conformity with the provision of National Electric Power Regulatory Authority (NEPRA) Licensing (Application and Modification Procedure) Regulations, 1999, and undertake to abide by the terms and provisions of above-said regulations. I further undertake and confirm that the information provided in the attached documents-in-support is true and corrected to the best of my knowledge and belief.

A pay order in the sum of Rupees (150,384/-) being the non-refundable application processing fee calculated in accordance with Schedule-II to National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999, is also attached herewith.

Masood ul Mulk  
Chief Executive Officer  
Sarhad Rural Support Programme

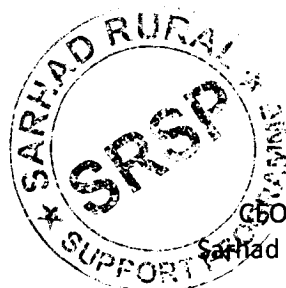
By No. ....  
Dated 12/10/17

**EXTRACTS FROM  
RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF  
SARHAD RURAL SUPPORT PROGRAMME  
DATED 16th Feb, 2017**

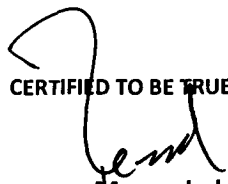
**RESOLVED** that Sarhad Rural Support Programme (the "Company") shall apply for a generation license in respect of the Company's 2 MW Small Hydro Power Project in Village Golen Birmogh, Union Council Koh, District Chitral of Khyber Pakhtunkhwa Pakistan (the "Project"), and in relation thereto, sign all requisite documentation, pay all applicable fees and undertake all other necessary and ancillary acts and deeds.

**RESOLVED FURTHER** that an application for a generation license be made to NEPRA with regards to the Project (the "License Application").

**RESOLVED FURTHER** that Mr. Masood ul Mulk S/O Khushamad ul Mulk, bearing CNIC No. 15201-8413435-9, the Chief Executive officer of the Company and Mr. Zahid Khan S/O Fazal Mehmood, bearing CNIC No.15602-0255609-3 and Mr. Shahid Abbas S/O Sultan Muhammad, bearing CNIC No. 37405-6240030-9, be and are hereby authorized to sign the License Application and any documentation ancillary thereto, represent before and provide any information required by the National Electric Power Regulatory Authority in relation to the License Application, do all lawful acts and deeds necessary and ancillary for the processing, completion and finalization of the License Application, and authorize legal advisors to represent the Company before the National Electric Power Regulatory Authority in respect of the License Application.



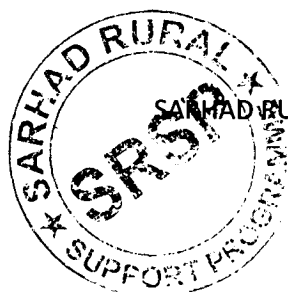
CERTIFIED TO BE TRUE COPY

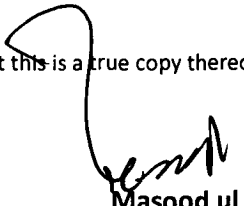
  
**Masood ul Mulk**  
CEO SRSP/Company Secretary  
Sarhad Rural Support Programme

**CERTIFICATION**

**CERTIFIED**, that, the above resolution was duly passed by the Board of Directors of Sarhad Rural Support Programme in their meeting held on 16.02.2017, for which the quorum of directors was present.

**FURTHER CERTIFIED**, that the said resolution has not been rescinded and is in operation and that this is a true copy thereof.



  
**Masood ul Mulk**  
CEO/Company secretary  
SARHAD RURAL SUPPORT PROGRAMME

**VAKALATNAMA**

I, **MR. MASOOD UL MULK S/O KHUSHAMAD UL MULK**, bearing CNIC No. **15201-8413435-9**, hereby appoint and constitute **Mr. NADIR ALTAF, Mr. HASEEB RAO, Mr. SHAZEB NAWAZ KHAN AND Ms. MICHELLE SHAHID of M/S RIAA Barker Gillette** to appear and act for Sarhad Rural Support Programme as our legal advisors in connection with preparation, filing and follow up of the application before the National Electric Power Regulatory Authority for a generation license in respect of a 2 MW hydropower project located at Village Birmogh Golen, Union Council Koh, District Chitral, Khyber Pakhtunkhwa and represent us in connection therewith.

The above mentioned legal advisors, or any of them, are also authorized to do all acts and things necessary for the processing, completion, acceptance and finalization of the application for generation license with the National Electric Power Regulatory Authority.

Dated: August 15, 2017



**Masood ul Mulk**

**For and on behalf of  
Sarhad Rural Support Programme**

**ACCEPTED**

**RIAA Barker Gillette**  
68 NAZIMUDDIN ROAD, F-8/4  
ISLAMABAD  
UAN: 111-LAWYER

**BEFORE  
THE NATIONAL ELECTRIC  
POWER REGULATORY AUTHORITY**

**APPLICATION FOR GENERATION LICENCE**

**IN RESPECT OF  
2 MW HYDROPOWER PROJECT LOCATED IN VILLAGE GOLEN BIRMOGH, UNION COUNCIL KOH, DISTRICT CHITRAL  
OF KHYBER PAKHTUNKHWA, PAKISTAN**

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Dated: 11.10.2017

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Filed for and behalf of:  
**SARHAD RURAL SUPPORT PROGRAMME**



**Through:**  
**RIAA BARKER GILLETTE**  
68, NAZIMUDDIN ROAD, F-8/4, ISLAMABAD  
UAN: (051) 111-LAWYER  
WEBSITE: [www.riaabarkergillette.com](http://www.riaabarkergillette.com)

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# **SARHAD RURAL SUPPORT PROGRAMME (SRSP) - Application for Grant of Generation License**

## **1. Introduction**

This generation license application (the "Application") is being filed by Sarhad Rural Support Programme ("SRSP", the "Applicant" or the "Company") under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") read with Regulation 3 of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "AMPR 1999") and other enabling provisions of NEPRA laws.

Information / Documents required	Remarks / Annexures
1. application fee for the consideration and processing of the Licence Application, as determined by the Authority from time to time in accordance with the Schedule-II to the Licensing Regulations;	Pay Order in the sum of Rs. 150,384/- has been attached.
2. a certified copy of the certificate of incorporation and details of the sponsors of the facility;	Annexure A
3. a certified copy of the Memorandum & Articles of Association highlighting "generation of electricity" / "distribution of electricity" / "transmission of electricity" as one of the businesses of the facility;	Annexure B
4. in case of an applicant who has submitted the annual return required to be submitted to the registrar of companies pursuant to section 156 of the Ordinance, a certified copy of the last filed annual return; OR in case of an applicant to whom sub-clause (a)(iii) of sub-regulation (5) is not applicable, a return comprising all such information, in as close a form and content as possible, laid down in the	Annexure C

*M*

third schedule to the Ordinance (certified copy, to the extent possible);	
5. a reasonably detailed profile of the experience of the applicant, its management staff and its members in the electricity industry;	Annexure D
6. the curriculum vitae of the applicant's senior management, technical and professional staff;	Annexure E
7. evidence, satisfactory to the Authority, of the availability of adequate financial and technical resources to the applicant for the purposes of the generation/distribution/transmission business;	Annexure F
8. details of any charges or encumbrances attached to the company's assets;	None.
9. in case of a first application for a licence by a going concern, technical and financial proposals in reasonable detail for the operation, maintenance, planning and development of the generation, transmission or distribution facility or system in respect of which the licence is sought;	Annexure G
10. in case of a generation license application: the type, technology, model, technical details and design of the facilities proposed to be acquired, constructed, developed or installed	Attached H
11. in case of a licence for a new facility or system, a feasibility study in respect of the project, specifying in detail: i. the type, technology, model and technical details of the facilities proposed to be constructed, developed or installed;	Feasibility Study attached as Annexure I; IEE attached as Annexure J; Grid Interconnection Report attached as Annexure K; Please note that the Applicant is in the process of filing a cost-plus tariff petition and accordingly, the tariff calculations

ii. design of the facilities proposed to be constructed, developed or installed; iii. the expected life of the facility or the system; iv. the location of the facility or the system, or the territory with outer boundaries within which the facilities or the system is proposed to be installed and operated by the licensee, along with maps and plans; v. the type and details of the services proposed to be provided; vi. environment impact assessment; vii. interconnection arrangement and design of interconnection/transmission lines; and viii. infrastructure project cost, financing plan, financing terms, tariff calculations and assumptions of financial calculations including economic/financial analysis, provided that in case where letter of intent/letter of support is issued by the relevant agency, the applicant shall submit feasibility study duly approved by the panel of experts of that agency; and	and assumptions of financial calculations including economic/financial analysis shall be incorporated in the same.
12. a prospectus.	Annexure L.

## 2. Applicant's Details

- a) **Applicant's name:** Sarhad Rural Support Programme.
- b) **Authorized representatives:** Mr. Masood ul Mulk S/O Khushamad ul Mulk, bearing CNIC No. 15201-8413435-9, the Chief Executive officer of the Company and Mr. Zahid Khan S/O Fazal Mehmood, bearing CNIC No.15602-0255609-3, the Project Manager of the Company.
- c) **Address of the Applicant:** No. 109 Street 2-B, Defense Officer's Colony, Khyber Road, Peshawar, Khyber Pakhtunkhwa, Pakistan.

### **3. Background of the Applicant**

SRSP was established in 1989, registered under Section 42 of the Companies Ordinance, 1984 (XLVII OF 1984) with Company Registration No. P-00337 and is the largest non-government, non-profit organization operational in Khyber Pakhtunkhwa and Federally Administered Tribal Areas (FATA). It is one of the 11 Rural Support Programmes established to reduce rural poverty and ensure sustainable means of livelihoods in urban and, especially, rural areas of Khyber Pakhtunkhwa Province of Pakistan.

Since its inception, it has been able to support development of over 40,733 community based organizations covering over 6.4 million population. SRSP enjoys a reputation based on its innovative initiatives undertaken as per needs of the poor and marginalized members of the society. On one hand, the investment of SRSP in the shape of programmatic, financial, technical, strategic and capacity building initiatives has led to the development of three tier level local institutions (community, village and union councils), while on the other hand, it has significantly contributed to social, economic and political development of rural areas and communities through various development packages.

SRSP's vision of development is to create a society where poverty is reduced and sustainable means of livelihood are ensured, while building social capital through mobilization of communities for poverty reduction in the Province of Khyber Pakhtunkhwa. It is the largest organization with an extensive presence in all 25 districts of Khyber Pakhtunkhwa and 13 tribal areas. Since its establishment, SRSP has expanded its programme from 2 to 25 districts and all 13 tribal areas. Extensive coverage in mentioned districts, strong presence at local level and network of established offices are few of the comparative advantages of SRSP to facilitate partners in development to initiate projects and programmes as per needs of local communities.

SRSP's core competencies 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 other stream of programme comprises responding immediately to large scale natural or man-made disasters. Recovery, relief through provision of food and non-food items and rehabilitation through delivering need based projects and programmes are some of the key aspects focused in humanitarian programmes.

For ease of reference, the core competencies of SRSP are briefly explained in a separate annex appended with this Application.

### **4. Grounds for Application**

In order to achieve the aforesaid aims and develop the 2 MW Hydropower Project at Birmogh Golen, District Chitral (the "Project"), the Company was required to raise the capital to meet the



project cost. In its efforts, the Company, *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 entered into a Grant Contract No. DCI-ASIE/2011/283-011 on 08.08.2012 with the European Union, represented by the European Commission, whereby the European Union has granted a total amount of Euros 40,000,000 to SRSP (the "Grant") under its Programme for Economic Advancement Community Empowerment (PEACE). The Implementation Period for the execution of PEACE is sixty-sixty (66) months.

By way of the aforesaid grant, SRSP, *inter alia*, intends to provide electric power to the locals of District Chitral through tapping the hydropower potential in the district and achieving the aforesaid objectives of poverty elimination and community building. The entire project cost incurred in the Project has been borne by the Company without seeking any commercial loans and debt financing. This project cost represents the 100% equity contribution. The Company will be responsible for the operations and management of the Project, which can either be undertaken itself or by engaging a competent O&M operator.

Currently, Pakistan is facing a huge electric power crisis as a result of failure of the Independent Power Producers (IPPs) to produce enough electricity to fulfill their available capacity. The country is in dire need of sustainable and reliable sources of energy generation for the social, technological and educational advancement and economic sustenance of the country. The location of Chitral as the Project site is ideal for the development of hydropower generation project due to its hilly terrain, abundance of glaciers and waterfalls. The proposed Project is on left bank of Golen Gol River in Chitral District of Khyber Pakhtunkhwa (KP) and is being developed in the private sector under the management of the Applicant. The Project is located some 34 km North-East of the city of Chitral and is expected to provide electricity to more than 25,000 households, civilians, children and military headquarter hospitals, laboratories, clinics and local administrative offices.

In continuation to the aforesaid, please note that the power purchaser of the Applicant shall be either the Central Power Purchasing Agency Guarantee Limited, ex-WAPDA DISCOs or a Bulk Power Consumer.

## **5. Prayer**

In light of the aforesaid, SRSP requests the Authority to kindly grant a generation license to allow it to achieve the abovementioned aims of poverty eradication at grass root level and help Pakistan prosper into a progressive, innovative and affluent economy.



## Core Competencies of the Applicant

### a) Formation of Community Based Three Tier Institutions

Using the principles of social guidance, SRSP has been active in obliterating constraints faced by poor and vulnerable community members. It helps in making rural communities realize their individual potential and establish viable and effective linkages with service providers for economic and social development. Following a three-tier social mobilization strategy, SRSP fosters community based organizations at *mohallah*, village and union council level. SRSP develops creative and productive partnerships with these rural/urban communities, fostering new strategies, methods and means on rural development.

To date, formation of 40,733 community based organizations (27,546 men and 13,187 women) representing 954,600 member households have been formed in 25 districts of Khyber Pakhtunkhwa. These organizations have a combined savings of PKR 184 million. Further, SRSP has facilitated formation of 150 Local Support Organizations covering almost 287,925 households in 17 districts/tribal areas have also been constituted.

### b) Developing Technical and Managerial Capacity of Local Leadership

In its work, SRSP aims to develop and strengthen social capital by providing programmatic, strategic and capacity building support to grass root institutions in achieving their goals. Capacities of the local communities are enhanced in various disciplines (managerial and technical skills) for self-reliance and resource mobilization. At least 393,000 individuals (238,000 men and 155,000 women members) have been trained in leadership, technical and vocational skills.

### c) Small Scale Community Managed Infrastructure Schemes

The communities are involved in planning, implementation and operation/maintenance of small-scale, need-based, and environment-friendly micro-infrastructure schemes. So far, SRSP has initiated/completed 9,421 small scale infrastructure projects including irrigation channels, drip irrigation, mini dams, and farm to market roads, protection /retaining walls, suspension bridges, drinking water supply, sanitation/drainage and street pavement with men and women communities. These schemes, with a total cost of PKR 5.3 billion, benefits 2.04 million members in target districts. To manage such a large portfolio of community based infrastructure schemes, SRSP has developed state of the art mechanism from identification to completion and handing over the projects to local communities. A meticulous approach with an active involvement of local communities is followed to maintain highest quality standards. The system is also augmented by a comprehensive management information system capable of tracking physical and financial progress of individual schemes initiated or completed.

### d) Community Managed Renewable/Sustainable Energy Projects

SRSP is the largest non-government organization proactive in promoting and supporting renewable, clean, and sustainable energy in areas either not connected to main grid electricity or experiencing power outages (up to 16 hours). Till December 31<sup>st</sup> 2016, SRSP has initiated 298 micro hydro projects with a cost of over PKR 3.3 billion with an active support of national and international donors across Khyber Pakhtunkhwa Province. These micro hydro units are capable of producing 23 MW electricity,



benefitting over 105,880 household or 794,000 population including women and children. For sustainable operations of initiated/completed micro hydro projects, two models of service delivery are developed and followed. Micro Hydro Projects (MHPs) with capacity up to 100 KW are categorized as small projects for which part time operators are engaged and need based cost sharing through collection from users is encouraged to provide electricity locally. However, the larger projects (100KW and above) are treated as social enterprises for which a robust approach is adopted. To manage larger ventures, power/operation and maintenance committees are constituted and their technical capacities are enhanced. These committees determine tariff for domestic/commercial users, follow-up on connections, collect revenue, and ensure continuous maintenance of all parts and structure of MHPs and regular monitoring of micro catchment area for sustained water flow.

**e) Extending Micro Loans through Innovative Packages/Products**

SRSP's Micro-Finance Programme is unique, innovative and responsive. Keeping in view the challenges of extending micro-finance in Khyber Pakhtunkhwa, SRSP has developed numerous innovative packages and products for extension of micro-credit in urban and rural areas of Khyber Pakhtunkhwa. SRSP, since inception, has been able to disburse PKR 1.17 billion to mostly women (representing 98 percent of SRSP's clientele) in rural areas of Khyber Pakhtunkhwa.

Keeping in view an unfavorable, uncertain and complex environment for delivery of micro-finance in Khyber Pakhtunkhwa, SRSP shifted from conventional to innovative approaches i.e. Community-Based Financial Intermediaries (CBFI) for delivering financial services to poor and marginalized sections of the society. Following CBFI model/methodology, based on willingness of local communities, SRSP encourages to form local institutions known as Village Banks. These local, self-managed village banks are contributing to social and economic uplift vis-à-vis empowerment of women. With support of various donors including Government of Khyber Pakhtunkhwa, SRSP to date has been able to support formation of 355 village banks/organizations in selected districts of Khyber Pakhtunkhwa addressing financial vulnerabilities of over 62,000 poor households of mostly vulnerable women. The financial assistance provided through Village Banks ranges from PKR 5,000 to 20,000 per household.

**f) Improving Natural Resource Management**

Innovations, usage of new and appropriate technologies, research and demonstration, creating an interface of communities and relevant line agencies and working through two different models i.e. arid zone model and mountain model, are few core features of SRSP natural resource management component.

**g) Improving delivery of Social Sector Services and Gender and Development**

SRSP is committed to involve both women and men for addressing poverty issues. Continuous effort is being undertaken to address both women's practical and strategic needs within the prevailing socio-cultural environment. SRSP's Gender Programme is operational at three levels i.e. organizational, programed, and external level. With gender policies and gender action plan in place, SRSP (with its gender infrastructure) has been one of the leading organizations to promote gender mainstreaming in Khyber Pakhtunkhwa. SRSP endeavors to improve delivery of social sector services through awareness raising events, establishment of community schools, establishment of adult



literacy centers and various education/health related trainings. To date, 88 community based 'model' schools benefiting almost 5,000 poor children, especially girls, have been established. To promote adult literacy, 199 literacy centers benefiting 32,900 women have also been established.

SRSP has also been supporting improvement in delivery of education at provincial level through development of district education plans, developing systems and technological packages. SRSP has been a major player in reviving the education system in disaster affected areas. Rebuilding of schools, providing access to almost 20,000 children, developing teachers' capacity and developing schools facilities have been some of its' major achievements. SRSP has also been one of the major players in Khyber Pakhtunkhwa for promotion of basic human rights. In few districts, it has delivered sessions on access to basic education covering more than 30,000 community members, while in others it has developed an innovative model of access to justice through community based paralegals. Thus far, at least 4,867 paralegals are operational in field and have delivered sessions for improving legal literacy and provided legal services in 1,215 villages of Khyber Pakhtunkhwa covering a population of 1.43 million.

#### **h) Enterprise and Value Chain Development**

SRSP is one of the leading organizations committed to develop small scale enterprises and selected value chains for improving social and economic development of poor families. SRSP is currently employing three models, developing selected value chains and small scale enterprises and developing enterprise activists to promote and support local enterprises and provide business development services. Over 100,000 members have benefited directly or indirectly from Enterprise and Value Chain Development interventions.

#### **i) Policy Advocacy and Linkages**

While support to grass root institutions continues to be pivotal, policy advocacy and linkage activities tailored to the new macro-economic environment with wide ranging political structural reforms have also been emphasized. SRSP has been actively engaged in influencing policies at provincial and national level through active collaboration with government agencies, giving them exposure to SRSP's programme areas vis-à-vis developing their capacity in participatory development approaches and creating an interface of communities and government line agencies through dialogues and technical collaboration.

#### **j) Humanitarian and Development Effort**

SRSP has also been a leading organization in Khyber Pakhtunkhwa to provide humanitarian and development services in disaster affected areas. During the 2005 earthquake operation, SRSP was able to reach over 125,000 population through its relief, rehabilitation and development efforts in 20 union councils district Mansehra, Abbottabad, Kohistan and Shangla. In the past few years, SRSP has also provided humanitarian services to over 4 million population affected by IDP crises and floods in various districts of Khyber Pakhtunkhwa and all 13 tribal areas/agencies.





# Sarhad Rural Support Programme

## **Sarhad Rural Support Programme; An Introduction**

Sarhad Rural Support Programme (SRSP) is the largest non government, non-profit organization operational in Khyber Pakhtunkhwa and Federally Administered Tribal Areas. It is one of the 11 Rural Support Programmes established to reduce rural poverty and ensure sustainable means of livelihoods in urban and, especially, rural areas of Khyber Pakhtunkhwa province of Pakistan. SRSP enjoys a reputation based on its innovative initiatives undertaken as per needs of poor and marginalized members of the society. SRSP, since its inception in 1989, has been able to support development of over 40,733 community based organizations covering over 6.4 million population. The investment of SRSP in shape of programmatic, financial, technical, strategic and capacity building initiatives, on one hand, has led to development of three tiers (community, village and union councils) level local institutions, while on the other hand it has significantly contributed to social, economic and political development of rural areas and communities through various development packages.

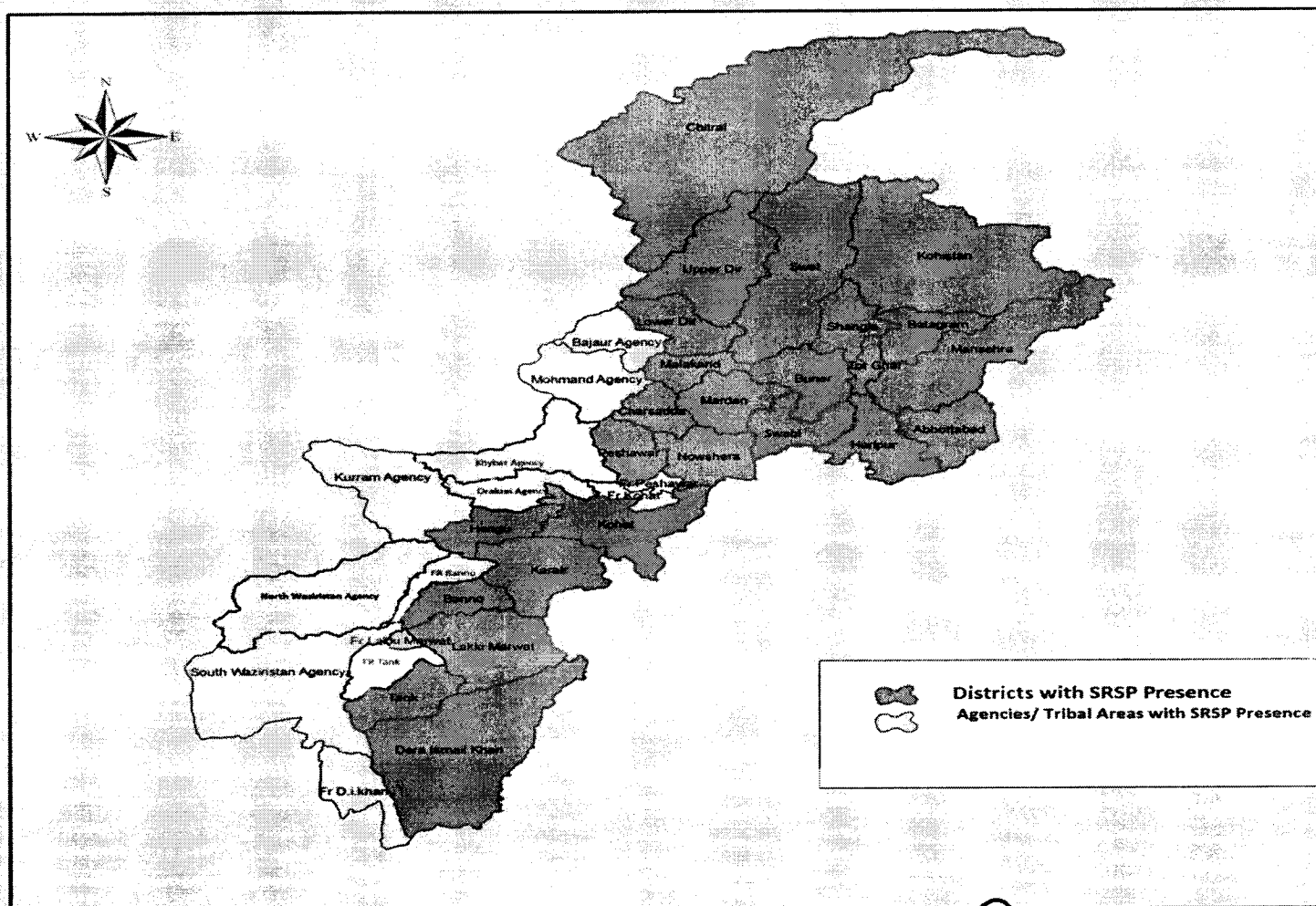
## Vision and Mission

SRSP's vision of development is 'to create a society, where poverty is reduced and sustainable means of livelihood are ensured, while the mission is 'to build social capital through mobilizing communities for poverty reduction in Khyber Pakhtunkhwa.

## Development Landscape

Sarhad Rural Support Programme beyond any doubt is the largest organization with an extensive presence in all 25 districts of Khyber Pakhtunkhwa and 13 tribal areas. Since its establishment in 1989, SRSP has expanded its programme from 2 to 25 districts and all 13 tribal areas (as shown on development landscape below). Extensive coverage in mentioned districts, strong presence at

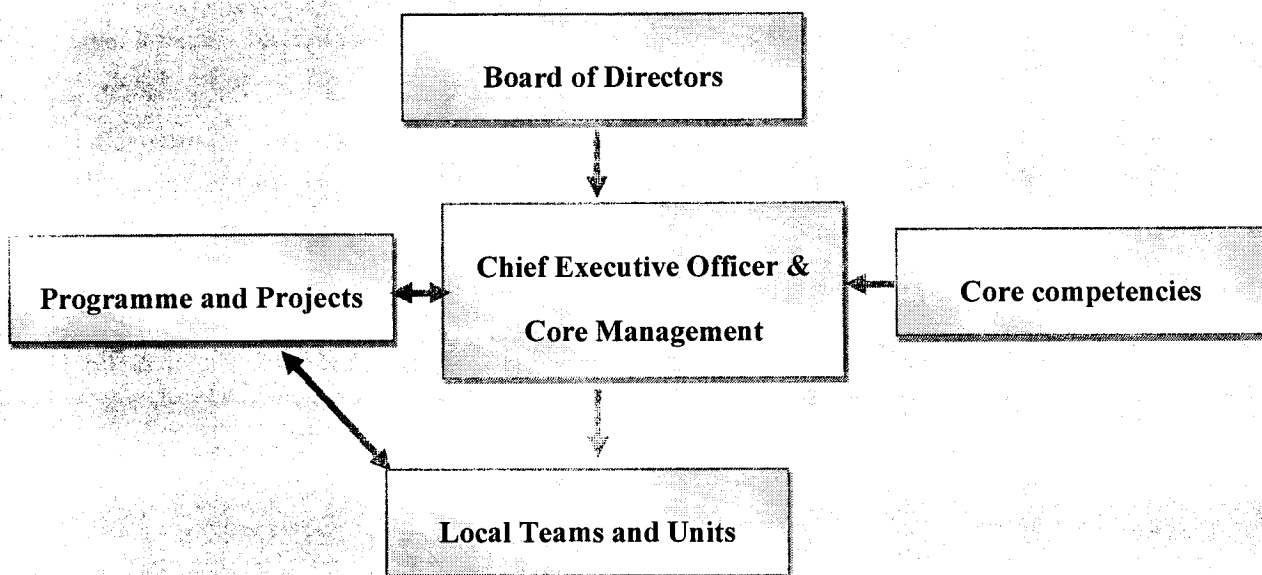
### SRSP Presence in KP Districts and FATA Agencies



local level and network of established offices are few comparative advantages of SRSP to facilitate partners in development to initiate projects and programmes as per needs of local communities.

## Organizational Structure

SRSP has three tier organizational structure including Head Office, Regional/District Offices and Field Units. In addition, separate project management units/offices are also established to manage different projects/programmes. The Head Office based at Peshawar provides technical and intellectual backstopping support to field offices, besides maintaining highest quality standards to deliver quality services, mobilizing needs/areas based resources for programme expansion/coverage, donor liaison, knowledge sharing, and overall guidance and supervision of the programme. At field level, the programme is run and managed by numerous Regional Units based in Peshawar, Kohat, Abbottabad, Mansehra, Swat, Dir, and Chitral. Each regional unit manages/supervises number of districts within defined boundaries/proximity for attaining economic of scale and maintaining a close contact with partner communities (organizational structure below).



The programme operates on principle of subsidiarity, in which regional units and district offices enjoy autonomy to make decisions at local level. The development inputs received by partner communities are need based & opportunity driven channeled through organized forums at the community, village and union council level. SRSP as a whole has a track record of planning, implementation, management, steering, monitoring and evaluating community development, improvement in physical infrastructure, micro-finance, human resource development and gender awareness and mainstreaming in rural areas of Khyber Pakhtunkhwa and tribal areas.

### **Board of Directors**

The seventeen members Board of Directors is responsible for setting strategic direction, review and approves business plans and developing guiding policies for SRSP. Day to day management of the SRSP's affairs and implementation of its strategy and policy initiatives are delegated to the Chief Executive Officer appointed by the Board. The Board is a balance mix of representatives from public and private institutions, press/intelligentsia, academia, agriculture and industries. The Board meets on quarterly basis to review physical and financial progress besides guiding implementation teams on enhancing programme efficiency and effectiveness.

### **Our Programmes**

Two streams of programme comprise:

***Development***

***Humanitarian***

## Competencies and Achievements

SRSP's core competencies 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 other stream of programme comprises responding immediately to large scale natural or human made disasters. Recovery, relief through provision of food and non food items and rehabilitation through delivering need based projects and programmes are some of the key aspects focused in humanitarian programmes. Details on achievements in abovementioned sectors/competencies are briefly elaborated below:

*i) Formation of Community Based Three Tier Institutions*

Using the principles of social guidance, SRSP has been active in obliterating constraints faced by poor and vulnerable community members. It helps in making rural communities realize their individual potential and establish viable and effective linkages with service providers for economic and social development. Following a three-tier social mobilization strategy, SRSP fosters community based organizations at mohallah, village and union council level. SRSP develops creative and productive partnerships with these rural/urban communities fostering new thinking and ways and means on rural development. So far, formation of 40,733 community based organizations (27,546 men and 13,187 women) representing 954,600 member households have been formed in 25 districts of Khyber Pakhtunkhwa. These organizations have a combined savings of PKR 184 million. So far, SRSP has facilitated formation of 150 Local Support Organizations covering almost 287,925 households in 17 districts/tribal areas have also been constituted.

*ii) Developing Technical and Managerial Capacity of Local Leadership*

In its work, SRSP aims to develop and strengthen social capital by providing programmatic, strategic and capacity building support to grass root institutions in achieving their goals. Capacities of the local communities are enhanced in various disciplines (managerial and technical skills) for self-reliance and resource mobilization. At least 393,000 individuals

(238,000 men and 155,000 women members) have been trained in leadership, technical and vocational skills.

*iii) Small Scale Community Managed Infrastructure Schemes*

The communities are involved in planning, implementation and operation/maintenance of small-scale, need-based, and environment-friendly micro-infrastructure schemes. So far, SRSP has initiated/completed 9,421 small scale infrastructure projects including irrigation channels, drip irrigation, mini dams, and farm to market roads, protection /retaining walls, suspension bridges, drinking water supply, sanitation/drainage and street pavement with men and women communities. These schemes with a total cost of PKR 5.3 billion benefits 2.04 million members in target districts. To manage such a large portfolio of community based infrastructure schemes, SRSP has developed state of the art mechanism from identification to completion and handing over the projects to local communities. A meticulous approach with an active involvement of local communities is followed to maintain highest quality standards. The system is also augmented by a comprehensive management information system capable of tracking physical and financial progress of individual schemes initiated or completed.

*iv) Community Managed Renewable/Sustainable Energy Projects*

Sarhad Rural Support Programme (SRSP), is the largest non-government organization proactive in promoting and supporting renewable, clean, and sustainable energy in areas either not connected to main grid electricity or experiencing long hours' power outages (up-to 16 hours). By December 31th, 2016, SRSP has initiated 298 micro hydro projects with a cost of over PKR 3.3 billion with an active support of national and international donors across Khyber Pakhtunkhwa province. These micro hydro units are capable of producing 23 megawatt electricity benefitting over 105,880 household or 794,000 population including women and children. For sustainable operations of initiated/completed micro hydro projects, two models of service delivery are developed and followed. Micro Hydro Projects (MHPs) with capacity up-to 100 KW are categorized as small projects for which part time operators are engaged and need based cost sharing through collection from users is encouraged to provide electricity locally. On contrary, the larger projects (100KW and above) are treated as Social Enterprises for which a robust approach is adopted.

To manage larger ventures, power/operation & maintenance committees are constituted and their technical capacities are enhanced. These committees determine tariff for domestic/commercial users, follow up on connections, collect revenue, ensure continuous maintenance of all parts and structure of MHPs and regular monitoring of micro catchment area for sustained water flow.

v) *Extending Micro Loans through Innovative Packages/Products*

SRSP's Micro Finance Programme is unique, innovative and responsive. Keeping in view challenges of extending micro finance in KP, SRSP has developed numerous innovative packages and products for extension of micro-credit in urban and rural areas of KP. SRSP, since inception, has been able to disburse PKR 1.17 one billion to mostly women (representing 98 percent of SRSP's clientele) in rural areas of Khyber Pakhtunkhwa. Keeping in view, an unfavorable, uncertain and complex environment for delivery of micro-finance in Khyber Pakhtunkhwa, SRSP shifted from conventional to innovative approaches; Community-Based Financial Intermediaries (CBFI) for delivering financial services to poor and marginalized. Following CBFI model/methodology, based on willingness of local communities, SRSP encourages to form local institutions known as Village Banks. These local, self managed village banks are contributing to social and economic uplift vis-à-vis empowerment of women. With support of various donors including Government of KP, SRSP to date has been able to support formation of 355 village banks/organizations in selected districts of Khyber Pakhtunkhwa addressing financial vulnerabilities of over 62,000 poor households mostly poor and vulnerable women. The financial assistance provided through Village Banks ranges from 5,000- 20,000 per household.

vi) *Improving Natural Resource Management*

Innovations, usage of new and appropriate technologies, research and demonstration, creating an interface of communities and relevant line agencies and working through two different models i.e. arid zone model and mountain model are few core features of SRSP natural resource management component.

**vii) *Improving delivery of Social Sector Services and Gender and Development***

SRSP is committed to involve both women & men for addressing poverty issues. A continuous effort is undertaken to address both women's practical and strategic needs within the prevailing socio-cultural environment. SRSP Gender Programme is operational at three levels i.e. organizational, programme, and external level. With gender policies and gender action plan in place, SRSP with its gender infrastructure has been one of the leading organizations to promote gender mainstreaming in Khyber Pakhtunkhwa. SRSP endeavors to improve delivery of Social Sector Services through awareness raising events, establishment of community schools, establishment of adult literacy centers and various education/health related trainings. So far, 88 community based 'model' schools benefiting almost 5,000 poor children, especially girl child, have been established. To promote adult literacy, 199 literacy centers benefiting 32,900 women have also been established. SRSP has also been supporting improvement in delivery of education at provincial level through development of district education plans, developing systems and technological packages. SRSP had been a major player in reviving the education system in disaster affected areas. Rebuilding of schools, providing access to almost 20,000 children, developing teachers' capacity and developing schools facilities had been some of its' major achievements. SRSP has also been one of the major players in KP for promotion of basic human rights. In few districts it has delivered sessions on access to basic education covering more than 30,000 community members, while in others it has developed an innovative model of access to justice through community based paralegals. Thus far, at least 4,867 paralegals are operational in field and have delivered sessions for improving legal literacy and provided legal services in 1215 villages of KP covering 1.43 million population.

**viii) *Enterprise and Value Chain Development***

SRSP is one of the leading organizations committed to develop small scale enterprises and selected value chains for improving social and economic development of poor families. SRSP is currently employing three models; developing selected value chains, developing small scale enterprises and developing enterprise activists to promote and support local

enterprises and provide business development services. Over 100,000 members have benefited directly or indirectly from Enterprise and Value Chain Development interventions.

*ix) Policy Advocacy and Linkages*

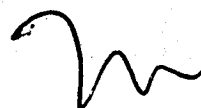
While support to grass root institutions continues to be pivotal, policy advocacy and linkage activities tailored to the new macro-economic environment with wide ranging political structural reforms have also been emphasized. SRSP has been actively engaged in influencing policies at provincial and national level through active collaboration with government agencies, giving them exposure to SRSP programme areas vis-à-vis developing their capacity in participatory development approaches and creating an interface of communities and government line agencies through dialogues and technical collaboration.

*x) Humanitarian and Development Effort*

SRSP has also been a leading organization in KP to provide humanitarian and development services in disaster affected areas. During earthquake 2005 operation, SRSP was able to reach over 125,000 population through its relief, rehabilitation and development efforts in 20 union councils district Mansehra, Abbottabad, Kohistan and Shangla. SRSP in last few years has also provided humanitarian services to over 4 million population affected by IDP crises and floods in various districts of KP and all 13 tribal areas/agencies.

## **Major Strengths**

SRSP key strengths include a highly skilled and motivated core team that brings long years of national and international experience. The team, adhering to professional integrity and excellence, is placed at three levels including field, districts/regions and head office has an inherent capacity to respond to challenges related to rural development in fragile environments. SRSP operations are supported through closely affiliated Head, Regional, District, Project and Agency Offices based in all parts of KP and selected areas of FATA. At field level, SRSP biggest asset remains a very strong network of partners communities including men and women organizations spread across the province.



SRSP's profile comprise public and private sector agencies, civil society organizations and a large number of donor institutions engaged in development. In last few years, SRSP has worked with various international donors including European Union, AusAID, CIDA, DFID, GIZ, KfW, Coffey International, SDC, UNDP, UNHCR, UNICEF, WFP, FAO, OSI, ICCO, CAFOD, ICMC, The World Bank, PPAF, Government of Khyber Pakhtunkhwa and the Federal Government. The long term relationship with donors, partner and communities is definitive indicator of SRSP performance, transparency and accountability. In addition, SRSP asset-base includes adequate/appropriate equipments (vehicles), a large IT infrastructure to support SRSP's computing, printing, networking, copying, audio/video and conferencing needs, established training and vocational skills centers and a sizeable library.

In terms of systems and procedures, SRSP relies on well-established Standard Operating Procedures (SOPs) that have been tested, audited and further developed as a result of SRSP's extensive engagement with various donors and public sector projects/programmes. SRSP policy manuals are documented while SOPs for all major areas of operations are available and are upgraded on regular basis. As a compliance protocol for contracts and agreements, renowned agencies and organization e.g. GIZ, UNICEF, UNHCR, PCP, USAID and KPMG have reviewed and certified SRSP's systems for management and internal controls. As a regulatory/legal requirement, SRSP's financial records are also independently audited through renowned chartered accountant firms on an annual basis, while a robust system for internal quality assurance (QA) further ensures that SRSP adheres to highest standards for project/programme management, administration, procurements, accounting/book keeping, internal audits, monitoring and evaluation, recruitments/appraisals, gender policies etc. An in-house capacity is also available to support the full project cycle ranging from identification to monitoring/evaluation and impact assessments. SRSP brings significant experience in design and delivery of large capacity building and training programs; policy, research and institutional analysis. SRSP projects/programmes portfolio includes a wide range of development projects/programmes focusing on livelihood improvement and strengthening initiatives contributing to socio-economic development of rural areas. On human resource front, the current payroll exceeds 1000 staff members working at various levels at head office, regional, districts or

field units. The core management, senior team members and professional are highly qualified bringing national/international experience with a diverse range of development projects.

The government of KP and Federal Government also recognize the role, which SRSP can play as a civil society organization in targeting poverty and thereby fight one of the main causes of extremism in the province or in tribal areas. Together, the provincial and federal governments has extended one time endowment fund of PKR 700 million to build SRSP's long-term capacity to deliver need based projects and programmes in the province and tribal areas. SRSP also recognizes government as an important partner in development though in its work with government SRSP preserves its independence and autonomy.

SRSP has been an active member of numerous national and international networks comprising Rural Support Programmes Network, Pakistan Micro Finance Network, Sarhad Micro Finance Network, Water Environment and Sanitation Network, IUCN, Pakistan Center for Philanthropist, Gender Voices, Energia Network Pakistan, Sarhad NGOs Ittehad, Education Policy Advocacy Forum, Social Mobilization Network, Gender think tank and HRD Network. SRSP has also been represented on a number of committees, boards and forums constituted at provincial and national levels.

In its work, SRSP is aware of and sensitized to cross cutting issues, which can be seen in its initiatives at field level. From poverty to participation, women inclusion, and undertaking environment sensitive initiatives are all evidence of its conscious efforts to support and promote sustainable development in Khyber Pakhtunkhwa and Tribal areas. SRSP is also a learning and adaptable organization. Not only it has started sharing its experiences at regional level but pragmatic steps have also been taken to further enhance development effectiveness. Developing communities and smaller organizations in Afghanistan, sharing experiences of disasters in Geneva/UK/Australia, highlighting community based education achievements and revival of education system in UK, sharing dynamics of devolution with Bangladesh and Nepal or

encouraging Swiss to develop and replicate village banking are few visible efforts of SRSP for regional and international development.

With a financial outlay of over 254.5 Million USD, SRSP in last 10 years has partnered with almost 50 national and international donors in the past ten years. These have been multi-disciplinary projects planned and implemented to address community needs. As a result, it has gained both the outreach and public credibility and the good will of the communities and the government. What it contributes in partnership is its multi-disciplinary competencies, capacity to work on scale, knowledge of the area and public credibility. This has been enabled after years' long experience of working with communities and donors in a diverse set of challenging and complex environment. The details of these projects are given below:

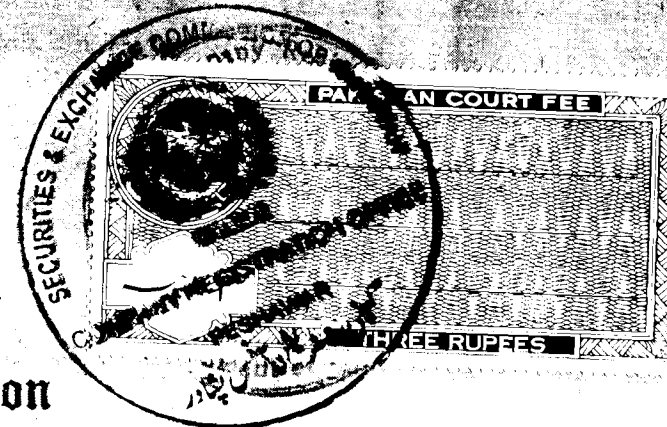
S #	Project/Programme Name	Funded by	Status	Areas of Operation (District, Tehsils, Agencies)	Total Cost
1.	Programme for Economic Advancement and Community Empowerment	European Union	Ongoing	7 districts of Malakand Division	50 million USD
2.	Community Driven Local Development	European Union	Ongoing	6 districts of Malakand Division except Buner	8 million USD
3.	KfW	KfW	Ongoing	FATA 4 Agencies(NWA, SWA, Orakzai, Khyber)	10.6 Million USD
4.	Livelihood Strengthening Programme	Aus-AID	Ongoing	Peshawar, Nowshera and Charsadda	11.9 Million AUD
5.	Programme for Poverty Reduction(PPR)	PPAF	Ongoing	Chitral, Dir Lower, Dir Upper, Bajaur Agency	6.8 Million USD
6.	Multiple projects-SM, LEP, Infrastructure development and HID, KfW	PPAF through World Bank	Ongoing	Peshawar, Nowshera, Charsadda, Chitral, Upper and Lower/Upper Dir, Swat, Kohat, Karak	7.9 Million USD
7.	Relief and Rehabilitation of Disasters affected communities	UN Agencies	Ongoing	Mohmand, South Waziristan, Orakzai	10 Million USD
8.	IDP Support Programme	UNHCR	Ongoing	Mohmand, South Waziristan, Orakzai, Bajaur, Kurram	0.32 Million USD
9.	WASH Project	UNICEF	Ongoing	Kurram, Tank	0.63 Million USD
10.	Legal Empowerment Project	FOSI-Pakistan	Ongoing	Chitral, Nowshera, Swat	0.32 Million USD
11.	EPI and SM Project	UNICEF	Ongoing	Swat, Shangla, Upper Dir, Lower Dir, Malakand	0.1 Million USD
12.	Aitebaar Project	Coffey Intl.	Ongoing	Peshawar	0.2 Million USD
13.	Alif Ailaan	RSPN	Ongoing	Mansehra, Haripur	0.05 million USD
14.	Rural Livelihood & Community Infrastructure Project	The World Bank	Completed	Mohmand, South Waziristan, Bajaur Agency	5 Million USD
15.	Restoration of Social Services and Infrastructure	GIZ	Completed	Mohmand Agency	0.22 Million USD
16.	BK Poverty Alleviation programme	Go-KP	Completed	Mardan, Karak, Upper Dir, Battagram	10 Million USD
17.	FATA Local Area Development Programme	CIDA	Completed	Kurram Agency and FR Peshawar	3 Million USD
18.	Strengthening Rule of Law in Malakand Division	UNDP	Completed	Malakand Division	0.3 Million USD
19.	Revival of Education in Swat	UK-DFID	Completed	Swat	1.6 million USD
20.	Promoting Girls Education	UNICEF	Completed	Kohistan, Torghar	0.2 Million USD
21.	Social Mobilization Project	PPAF	Completed	Upper and Lower Dir, Swat, Battagram, Shangla, Kohistan	1.65 Million USD

22.	EQ Relief and Rehabilitation Project	PPAF	Completed	Mansehra, Battagram, Kohistan, Shangla, Abbottabad	80 Million USD
23.	Empowering Vulnerable Communities	ICMC	Completed	Mansehra	0.7 million USD
24.	Promoting social cohesion & Resilience amongst Children and Adolescents (Girls and Boys)	UNICEF	Ongoing	Swat	0.15 million USD
25.	Ensuring Protection for Women	UNFPA	Ongoing	Bannu, NWA	0.09 million USD
26.	Sanitation Program	UNICEF	Ongoing	Buner	0.22 million USD
27.	Community Resilience Response	UNDP	Ongoing	Bannu	0.13 million USD
28.	Social Mobilization Project	CESSD	Ongoing	Haripur	0.09 million USD
29.	Social Mobilization Project	CESSD	Ongoing	Abbotabad	0.08 million USD
30.	ADR	Coffey Intl.	Ongoing	Peshawar	0.17 million USD
31.	Enrollment Campaign for children out of school	UNICEF	Ongoing	FATA(3 Agencies), 4 FRs, Kohat, Peshawar, DI Khan, Lakki Marwat	0.5 million USD
32.	Pakhtunkhwa Energy Development Organization	Go-KP	Ongoing	Swat, Shangla, Kohistan	15.7 million USD
33.	PTC Trainings	Go-KP	Ongoing	All Districts of KP	13.24 million USD
Total worth of ongoing and recently completed projects and programme (in USD)					254.5 Million



GOVERNMENT OF PAKISTAN

## Certificate of Incorporation



COMPANY REGISTRATION No. P-00337 of 1989-90 (GCN 01210)

I hereby certify that The Sarhad Rural Support Corporation (Guarantee) Limited  
is this day incorporated under the Companies Ordinance 1984 (XLVII of 1984) and that the Company is Limited By Guarantee

Given under my hand at Peshawar

this 27th day of November, One thousand nine hundred and Eighty Nine

Fee Rs. 250/-

( MUHAMMAD SIDDIQUE )  
Deputy Registrar of Companies  
N. W. F. P., Peshawar.

Certified to be True Copy

(Saqib Aslam)

Deputy Registrar of Companies

Securities and Exchange Commission of Pakistan

CRO, Peshawar-28-11-2016

# GOVERNMENT OF PAKISTAN



## CERTIFICATE OF INCORPORATION ON CHANGE OF NAME

[Under section 40 of the Companies Ordinance, 1984 (XLVII of 1984)]

Company Registration No. P-00337 of 1989-90 OCN-1210

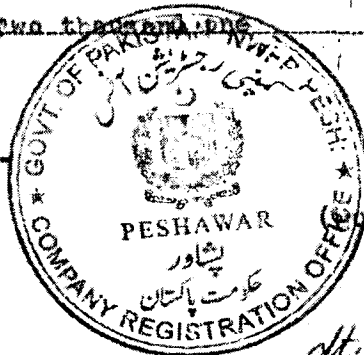
I hereby certify that pursuant to the provisions of section 38 or section 39 of the Companies Ordinance, 1984 (XLVII of 1984) the name of ~~The~~ Sarhad Rural Support Corporation (Guarantee) Limited has, with the approval of the Registrar of Companies, Pakistan, been changed to Sarhad Rural Support Programme (Guarantee) Limited and that the said company has been duly incorporated as a company limited by (Guarantee) under the provisions of the said Ordinance.

This change is subject to the condition that for period of one year from the date of issue of this certificate, the company shall continue to mention its former name alongwith its new name on the outside of every office or place in which its business is carried on and in every document or notice referred to in clauses (a) and (c) of section 143.

Given under my hand at Peshawar  
this 01st day of January one thousand nine  
hundred and two thousand one

Fee Rs. 45,000/-

C.R.O.-2



(Muhammad Ishaq Khan)  
Joint REGISTRAR  
OF COMPANIES

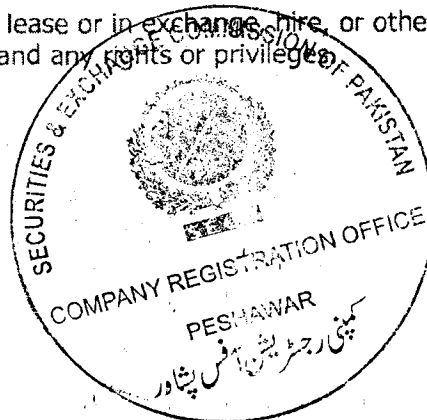
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PAKISTAN COURT FEE

THREE RUPEES

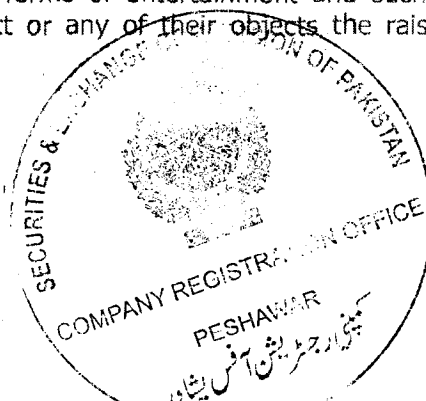
Deputy Registrar of Companies  
Securities and Exchange Commission of Pakistan  
CRO, Peshawar 28-11-2001

14. To provide all services required in agriculture, fish-culture, poultry, animal, and bee farms including but not limited to those required for pest control, salinity and water-logging control, reclamation and preservation of land crop, animal husbandry and veterinary facilities, control and cure of cattle, fish, poultry diseases and epidemics and such other services as are associated or in line therewith.
15. To own, lease, licence, purchase or otherwise acquire, maintain, work, prospect, gather, open, get in, develop, clear, improve, manage, farm, cultivate, irrigate and harvest any lands, estates, buildings, farms, orchards, gardens, forests and fishing rights or properties whether owned by the Company or not in any manner deemed desirable and to erect, build, install and maintain all workshops, godowns, storage for medicines, pharmaceutical and agricultural products, sheds, cold storage premises and other premises for storage and preservation of foodstuffs, medicines, pharmaceuticals, dwelling houses and other buildings, works and appliances, and to aid in or subscribe towards or subscribe or promote any such object.
16. To work as farmers, gardeners, grazers, breeders and dealers in livestock, arboriculturists, agriculturists, horticulturists, agronomists, dairymen, millers, nureserymen, seedsmen, raisers, growers, stockists, transporters, sellers, buyers and dealers of grain, seeds, plants, trees, shrubs, bulbs, fruits, vegetables, poultry, meat, animal feed, dairy products and provisions and arboricultural, agricultural and other allied products and equipment and things of all kinds and of whatever description.
17. To acquire, buy, sell market, distribute, exchange or otherwise dispose off, store, hold, package, transport, use, experiment with, handle, trade and generally deal in artificial manners, fertilizers, chemicals, pesticides, insecticides and agricultural products, machinery and equipment, sprays, vermifuges, fungicides, medicines and remedies of all kinds for agriculture, fruit-growing or other purposes and all products and by-products which may be derived, produced, prepared, developed, compounded, made or manufactured therefrom.
18. To undertake, support and subsidies measures, programmes, plans and schemes to provide services and act as consultants for environmental development and planning, improvement of habitats, prevention of pollution and industrial wastage, and preservation of natural landscapes, forests, and animal life.
19. To preserve, support, subsidies and encourage development of houses and buildings that represent and reflect the local architecture and heritage and to promote better utilization of local skills and materials in conjunction with modern techniques.
20. To promote tourism, facilitate traveling, provide amenities and conveniences for travelers, publish maps, act as consultants in the development of tourism and in connection therewith to encourage and assist in the establishment of hotels, tourist resorts, restaurants, cafes, motels, holiday camps and recreation centers.
21. To purchase, take on lease or in exchange, hire, or otherwise acquire any immovable or movable property and any rights or privileges.



*Handwritten signature or mark.*

22. To construct, maintain and alter any buildings or creations and to provide the same with all proper and necessary fixtures, furniture, fittings, apparatus, appliances, conveniences and accommodations.
23. To lend and advance money or give credit, either with or without security, to such persons or companies and on such terms as may seem expedient and, in particular, where the same is desirable in the interests of the Company and to persons or companies having dealing with the Company and to guarantee the performance of any contract or obligation and the payment of money to or by any person or company and generally to give guarantees and indemnities.
24. To borrow or raise money on such terms and on such security, if any, as may be thought fit.
25. To open and operate a banking account or banking accounts and to draw, make, accept, endorse, discount, execute and issue promissory notes, bills of exchange, bills of lading, warrants, drafts, cheques, bonds, debentures, and other negotiable or transferable instruments.
26. To undertake and execute any agencies which may seem directly or indirectly conducive to the objects of the Company.
27. To print and publish any periodicals, books, or leaflets in furtherance of Company's objects.
28. To invest the monies of the Company not immediately required in such manner as the Company thinks fit.
29. To enter into any arrangements with any Governments and authorities, supreme, municipal, local or otherwise or any person or company, that may seem conducive to the objects of the Company or any of them and to obtain from any such government, authority, person or company, and rights privileges, charters, contracts, licenses and concessions which the Company may deem appropriate to obtain and to carry out, exercise and comply therewith.
30. To accept grants from any national and international governments or agencies or authorities, public bodies, corporation, companies or persons, of money, movable and immovable property, donations, gifts, subscriptions, devises, bequests and other assistance with a view to promoting the objects of the Company and in receiving any gift of property to take the same either unconditionally or subject to any special conditions which may be prescribed by the donor in writing.
31. To take such steps, by personal or written appeals or otherwise, as from time to time may be deemed expedient for the purpose of procuring contributions to the funds of the Company in the shape of donations, annual subscriptions, or otherwise and to promote, assist in the promotion of or otherwise participate in fetes, bazaars, theatrical productions, concerts and other forms of entertainment and such other schemes or things as have for their object or any of their objects the raising or money for the purposes of the Company.



32. To established and maintain or procure the establishment and maintenance of any contributory or non-contributory provident, pension or superannuating funds for the benefit of and to give or procure the giving of donations, gratuities, pensions, allowances, benefits or emoluments to any persons who are or we, at any time, in the employment of the Company or of any society or company allied to or associated with the company and the windows, families and dependents of any such persons and to make payments to or towards the insurance of any such persons as aforesaid and to do any of the matters aforesaid either alone or in connection with any such other society or company as aforesaid.

33. To establish and support or aid in the establishment and support of associations, institutions, funds, trusts and conveniences calculated to benefit employees or past employees ~~or~~ the Company or the dependents or connections of any such employees, and to grant pensions and allowances, and to make payments towards insurance, and to subscribe or guarantee money for any charitable, educational or benevolent object or for any exhibition, or for any public, general or useful object or for any purposes which may be considered likely, directly or indirectly, to further the objects of the Company.

34. To amalgamate with any other association or company having objects altogether or in part similar to those of the Company.

35. To promote or assist in the promotion of any company or association having objects similar to the objects of the company and also any company or association the objects of which are calculated either directly or indirectly to benefit the company in the attainment of any of its objects.

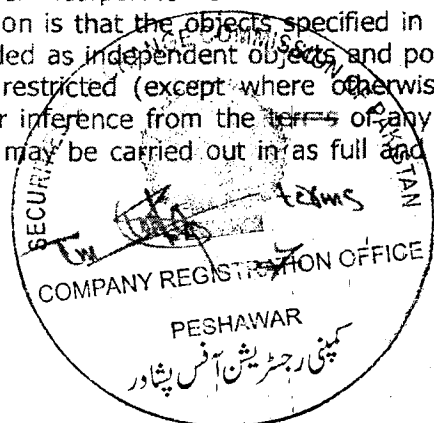
36. To promote any company or companies, body or association (whether corporate or not) for the purpose of acquiring all or any of the property, rights and liabilities of the Company.

37. To obtain any provisional Rule, Order, Statute or other legislative provision for carrying any of company's objects ~~into~~ effect or for effecting any modification of the constitution of the Company or for any other purpose which may seem expedient, and to oppose any proceedings or applications which may seem calculated directly or indirectly to prejudice the Company's interests.

38. To establish branches and offices in different parts of the Country.

39. To do all such other administrative, managerial and charitable things as are lawful and incidental or conducive to the attainment of the above-described object.

It is hereby declared that the word "Company" in this Clause, except where used reference to the Company, shall be deemed to include any partnership or other body of persons whether incorporated or not and whether domiciled in Pakistan or elsewhere and the intention is that the objects specified in each of the paragraphs of this Clause shall be regarded as independent objects and powers and accordingly, shall in no way be limited or restricted (except where otherwise expressed in such paragraphs) by reference to or inference from the terms of any other paragraph or the name of the Company, but may be carried out in as full and ample a manner and construed in as



wide a sense as if each of the said paragraphs defined the objects and powers of separate and distinct company. The meaning of any general ~~works~~ in any paragraph of this Clause shall not be restricted by being construed 'ejusdem generis' with any particular ~~work~~ or words in the same paragraph.

IV It is hereby declared that:

- a) All income of the Company shall be utilized towards the promotion of the ~~aims~~ and objects of the company.
- b) The company shall apply all its profits and other income from its business, activity or from any ~~of~~ its property, howsoever derived, solely towards the promotion of the objects of the company as set forth in this Memorandum of Associations, and the company ~~is~~ hereby specifically prohibited to pay any dividend to its members in accordance with requirement of Section 42 of the companies ordinance, 1984.

V The Company is being formed as a public company.

VI Provided further that no member of the Board of director/~~General Body~~ of the company shall be appointed to any ~~any~~ salaried office of the fund or any office of the company paid by fees and that no remuneration shall be given by the company to any member of such Board of ~~directors~~ or General Body except repayment of out of pocket expenses and interest on money lent/borrowed or rent of the premises demised to the company.

- VII a) No change in the Memorandum and the Article shall be made except with the prior approval of the corporate Law Authority.
- b) Patronage of any government or authority, express or implied shall not be claimed unless such government or authority has signified its consent thereto in writing.

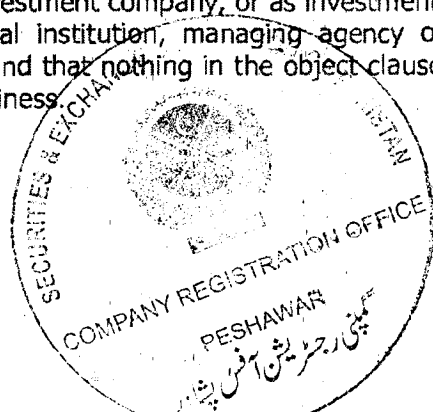
VIII The liability of the members is limited.

IX a) In the event of the company being wound up, every member of the company, presently being a member or within one year afterwards, undertakes to contribute to the assets of the company for payment of the debts and liabilities of the company and for the costs, charges and expenses of winding up, such amounts as may be required but not exceeding Rs. 1000/- (rupees one thousand, only)

b) Payment of remuneration for service<sup>s</sup> or otherwise to its members, whether holding an office in the Company or not, shall be prohibited.

c) If upon winding up and dissolution of the Company, there remains, after satisfaction of all debts, and liabilities, any property whatsoever, the same shall not be paid to or distributed amongst the members of the company but shall be given or transferred to some other institution(s) having purpose(s) similar to the purposes of the company, such institutions(s) to be determined by the members of the company ~~or~~ at or before the time of dissolution under intimation to the government.

X. It is hereby undertaken that the company shall not engage in banking, leasing or the business on any investment company, or as investment advisor, insurance company or the business of financial institution, managing agency or construction business or in any unlawful business and that nothing in the object clauses shall be construed to entitle it to engage in such business.

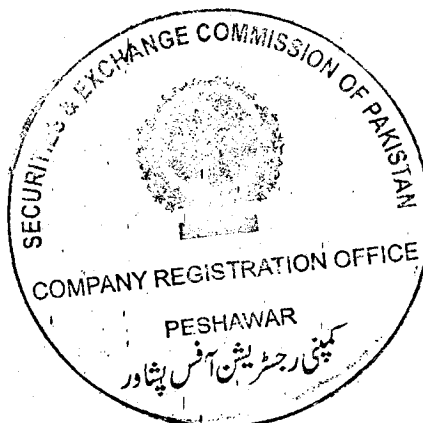


**Name, Address and  
Description of subscribers**

**Signatures  
of Subscribers**

**Witness to  
Subscribers Signatures**

1. Mr. Mohammad Azam Khan  
S/O Abdul Ghafoor Khan  
Village Parang, Charsadda
2. Mr. G.M. Khattak  
S/O Khan Jan Mohammad Khan  
445-D/1, Phase-I  
Hayatabad, Peshawar.
3. Mr. G. M Khan  
S/O Abdul Qayum Khan  
Mardan House, Par Road,  
University, Peshawar.
4. Mr. Abdul Rehman Khan  
S/O Gulabad Bacha Kallai  
Charsadda.
5. Mr. Ehsanullah  
S/O Nisar Khan  
Village Nal, Matta, Swat.
6. Mr. Asmatullah  
S/O Faizullah  
MD Argo Oil Mills, Chashma  
Road, D. I Khan
7. Maj: Gen (Rtd), Mumtaz Ahmad  
S/O Khan Bahader Ghulam  
Rabani Khan, Gulam  
Kohsar, Mansehra.
8. Mr. Sharif Khattak  
S/O Durrani, Mohalla,  
Faqir Khel, Karak.
9. Begum Zari Sarfaraz  
W/O Mohammad Azam Khan,  
Sarfaraz House, Mardan.



10. Dr. Akhter Hamid Khan  
S/O Amir Abdul Khan  
C/1/IV/Mairhair View Gulshan  
Abad, Karachi - 47

11. Mr. Shoalb Sultan Khan  
S/o Mohammad Nasim Khan  
H. No. 8 Aga Khan Road F6/4  
Islamabad.

12. Mr. Abdul Qayum Khan  
Director, Pakistan  
For Rural Development  
Pakistan

13. Mr. Abdul Rehman Khan  
Vice chancellor, Agriculture  
University, Peshawar.

Certified to be True Copy

Assistant Registrar of Companies  
Securities & Exchange Commission of Pakistan

CRO, Peshawar

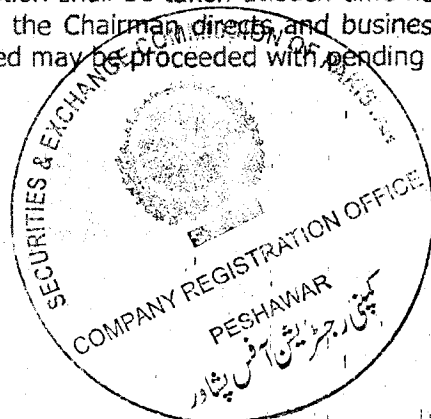
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### PROCEEDINGS AT GENERAL MEETINGS

6. All business shall be deemed special that is transacted at an Extraordinary General Meeting, with the exception of the consideration of the accounts, balance sheets and the reports of the Board and Auditors, the election of Directors, and the appointment of and the fixing of the remuneration of the Auditors.
7. ✓ No business shall be transacted at a General Meetings unless a quorum of members is present at that time when the meeting proceeds to business. The quorum shall be members having not less than twenty five percent (25%) voting power present in person.
8. ✓ If within half an hour from the time appointed for the meeting a quorum is not present, the meeting if convened by Members shall be dissolved, in any other case it shall stand adjourned to the same day in the next week at the same time and place, and if at such adjourned meeting a quorum of Members is not present, within half an hour from the time appointed for the meeting, the Members present, being not less than two, shall be a quorum.
9. ✓ The chairman may with the consent of any meeting at which a quorum is present (and shall, if so directed by the meeting) adjourn the meeting from time to time, and from place to place but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting for which the adjournment took place. When a meetings is adjourned for more than ten days, notice of the adjourned meeting and the business to be transacted thereat shall be given as in the case of an original meeting. Save as aforesaid, it shall not be necessary to give any notice of an adjournment, or of the business to be transacted at an adjourned meeting.
10. ~~At~~ any General Meeting a resolution put to the vote of the meeting shall be decided on a show of hands, unless a poll is (before or on the declaration of the result of the show of hands) demanded by Members having not less than one-tenth of total voting power. Unless a poll is so demanded, a declaration by the Chairman that a resolution has on a show of hands been carried, or carried unanimously, or by a particular majority, or lost, and an entry to that effect in the book containing minutes of proceedings of the company, shall be conclusive evidence of the fact, without proof of the number or proportion of the votes recorded in favour of or against such resolution. The demand for a poll may be withdrawn.
11. Except as provided in Articles 13 if a poll is duly demanded it shall be taken in such manner as the chairman directs, and the results of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded.
12. In The case of an equality of votes, whether on a show of hands or on a poll, the Chairman shall be entitled to a second or casting vote.
13. A poll demanded on a question of adjournment shall be taken forthwith. A poll demanded on any other question shall be taken at such time not more than 14 days from the day it was demanded as the Chairman directs, and business other than that upon which a poll has been demanded may be proceeded with pending the taking of the poll.



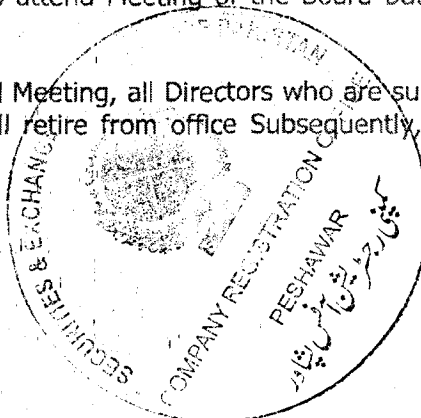
### VOTES AT GENERAL MEETINGS

14. On a show of hands every Members present in person, or in the case of a company, foundation or corporation by an authorised representative, appointed in accordance with section 162 of the ordinance, shall have one vote.
15. On a poll every Founder Member and each ordinary Member shall have one vote.
16. Notwithstanding Articles 14, a Member shall not be entitled to vote on any matter which personally affects him, even though he/she might be present, and the chairman may require him to withdraw during the discussion, and he/she shall in that case withdraw accordingly.
17. Votes (whether on a show of hands or on a poll) must be given personally or in the case of a company or corporation or foundation, by an authorized representative appointed as provided in "Articles 14 above, and not by proxy.

### THE BOARD OF DIRECTORS

18. The Board shall comprised of:
- a) The chairman of the Board for a term not exceeding five who shall be eligible for such re-appointment.
  - b) Not more than two Directors appointed by the Chairman of the Board at the time of each Annual General Meeting, who shall hold office till next Annual General Meeting.
  - c) Not less than seven other Directors (including the female directors) elected by the Member in accordance with the procedure laid down under the Ordinance.
  - d) Following are the 1<sup>st</sup> Directors of the Board:

1. Mr. Shoaib Sultan Khan	2. Mrs. Munawwar Humayun Khan
3. Mr. Muhammad Azam Khan	4. Mr. Bashir Ahmad
5. Mian Javed	6. Mr. G.M. Khan Yousafzai
7. Maj, Gen (R) M. Mumtaz Khan	8. Mr. G. M Khattak.
9. Mr. Ehsanullah Khan	10. Mr. Yar Muhammad Khan
11. Begum Zari Sarfaraz	12. Dr. Perveen Azam Khan
13. Mr. Omer Khan Afridi	
19. The first Directors shall hold office till first Annual General Meeting.
20. The Chairman of the Board may after each Annual General Meeting appoint one of the Directors appointed under Clause (b) or (c) of Article 18 to be Vice chairperson of the Board who will hold office till next Annual General Meeting.
21. The Board may appoint advisors to attend Meeting of the Board but such advisors shall not be entitled to vote thereat.
22. On the date of first Annual General Meeting, all Directors who are subject to election and nominees of chairman, if any, shall retire from office Subsequently, an elected director

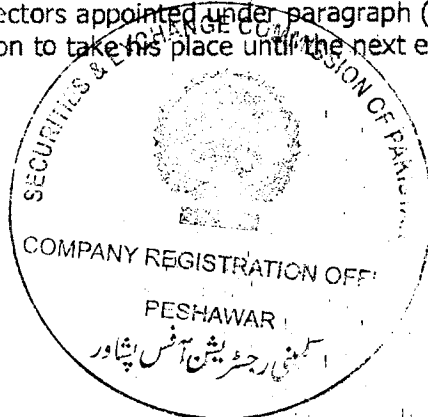


shall hold office for a period of three years unless he/she resigns earlier, becomes disqualified from being a Directors or otherwise cases to hold office or is removed form office.

23. The Directors to retire in each year shall be those who have been longest in office. As between two or more directors who have been in the office an equal length of time the Directors to retire shall, in default of arrangement between them, be determined by lot. The length of time a Director has been in office shall be computed from his last election if he/she has previously vacated office. A retiring Director shall be eligible for re-election.
24. The members of the Company shall, at the meeting at which any elected Directors shall retire in manner aforesaid or so soon thereafter as shall be practicable, elect new Directors.

### **REMOVAL OF DIRECTORS**

25. i) The Board may, by resolution, remove from office the chairman of the Board.  
ii) The chairman of the Board may remove from office Vice-chairperson or any Director appointed under Articles 20 and Clause (b) of Article 18  
iii) The Company may by a special resolution, remove from office any director elected by the Members.  
iv) The Chairman or the Vice-chairperson of the Board shall cease to hold office as such upon ceasing to be director for any reason.
26. i) Upon a director elected under clause (c) of Article 18 being removed from office under Article 25 (iii) or vacating his office under Article 41, the Board may, so soon thereafter as shall be practicable, appoint a new director to fill the casual vacancy. A person appointed director in place of a person removed from office under Article 25 (iii) or in place of person vacating his office under Article 41 shall be treated, for the purpose of determining the time at which he/she is to retire, as if he/she had become Director on the day on which the person in whose place he/she is elected was last elected as Director.
- ii) Upon the chairman of the Board appointed under paragraph (a) of Article 18 removed from office under Article 25 (i) or vacating his office under Article 40, then the Board shall appoint a new Chairman of the Board to take his place until the next Annual General Meeting.
- iii) Upon a Director appointed under paragraph (b) of Article 18 being removed from office under Article 25 (ii) or vacating his office under Article 41, then the chairman of the Board shall appoint a new director to take his place until the next Annual General Meeting.
- iv) Upon a vice-chairperson of the Board appointed under Article 20 being removed from or vacating office as aforesaid then the chairman of the Board may appoint any one of the Directors appointed under paragraph (b) and (c) of Article 18 to be a new Vice-chairperson to take his place until the next ensuing Annual General Meeting.

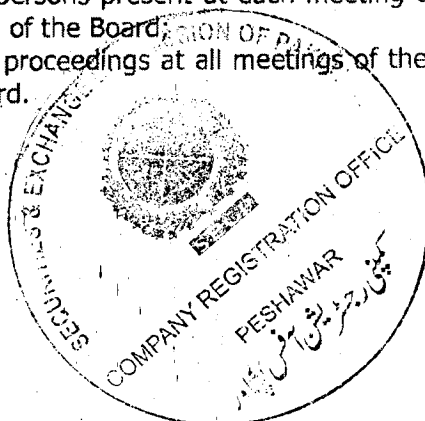


### **POWERS TO BORROW AND INCUR EXPENDITURE**

27. The Board may, with the approval of the company in a General Meeting, exercise the powers of the company to borrow money, or to mortgage or charge its undertaking and property or any part thereof, or to issue debentures, debenture stock or other securities.
28. The Board shall not be entitled without the approval of company in general meeting to incur any expenditure in excess of that estimated in the budget submitted to the Members of the company under Article 65 but nevertheless no persons dealing with the company shall be concerned to see or enquire whether this limit is observed and no debt incurred in excess of the such limit shall be invalid.

### **POWERS AND DUTIES OF DIRECTORS**

29. The business of the company shall be managed by the Board who may pay all expenses incurred in promoting and registering the company and may subject to Article 27 and 28, exercise all such powers of the company as are not, by the ordinance or by these Articles, required to be exercised by the company in General Meeting subject nevertheless to the provisions of the ordinance or these Articles and to such regulations, being not inconsistent with the aforesaid provisions, as may be prescribed by the company in General Meeting, but no regulation made by the company in General Meeting shall invalidate any prior act of the Board which would have been valid if that regulation had not been made. The Board shall exercise all such powers as are vested in them by Section 196 (2) of the ordinance.
30. The Board may, from time to time and at any time with the previous consent in writing of the Company, by power of attorney appoint any company, firm or person or body of persons, whether nominated directly or indirectly by the Board, to be the attorney or attorneys of the Company for such purposes and with such powers, authorities and discretions (not exceeding those vested in or exercisable by the Board under these Articles) and for such period and subject to such conditions as they may think fit, and any such power of attorney may contain such provisions for the protection and convenience of persons dealing with any such attorney as the Board may think fit.
31. All cheques, promissory notes, drafts, bills of exchange and other negotiable instruments and all receipts for moneys paid to the company shall be signed, drawn, accepted, endorsed, or otherwise executed, as the case may be, in such manner as the Board shall from time to time by resolution determine.
32. A provision of the ordinance or these Articles requiring a thing to be done by a director and a secretary shall not be satisfied by its being done by the same person acting both as director and as, or in place of, the secretary.
33. The Board shall cause minutes to be kept in bound volumes provided for the purpose:
- a) of the names of the persons present at each meeting of the company, the Board and of any committee of the Board;
  - b) of all resolutions and proceedings at all meetings of the company, the Board, and committee of the Board.



34. Every member present at any meeting of the company and every director present at any meeting of the Board or committee of the Board shall sign his name in a book to be kept for that purpose.
35. Minutes of every meeting of the Board shall be prepared immediately thereafter and a copy thereof in their unconfirmed state shall be sent to every director within seven days of such meeting.
36. Minutes of all General Meetings, of the Company and of all meetings of the Board shall be presented at the next ensuing meeting of the Company or the Board (as the case may be) and if confirmed, shall be signed by the chairman of the meeting.
37. Minutes of the Board meeting shall be open for inspection by any member or director during office hours but minutes of the General Meeting of the company shall be available only to the members except when they otherwise decide.

#### **CHIEF EXECUTIVE**

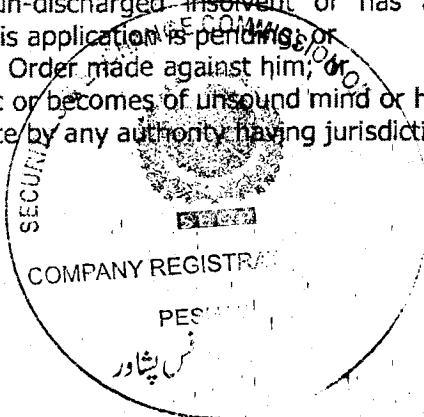
38. Subject to the provisions of the ordinance and clause IV of the Memorandum of Association, the Board shall appoint to the office of chief executive any person including any elected director, for such period not exceeding three years and on such terms as they deem fit.

#### **SEAL**

39. The secretary shall keep the seal in safe custody. It shall only be used by the authority of a resolution of the Board, and every instrument to which the seal shall be affixed shall be signed by the Chairman of the Board or in his absence by the Vice-chairperson of the Board (or in the absence of both, by such other Director as the Board shall nominate) and by one other Director and shall be countersigned by the Secretary or by the third Director. An instrument duly sealed and purporting to be signed by such three persons shall be considered as properly executed.

#### **DISQUALIFICATION OF DIRECTORS**

40. The Chairman of the Board shall cease to be the chairman and director upon
  - i. giving notice in writing to the Board resigning his office; or
  - ii. being removed from office by a resolution of the Board under Article 25 (i); or
  - iii. the occurrence of any event specified in paragraph (ii) to (xii) of Articles 41
41. The office of Vice-Chairperson or a Director shall be vacated if the Vice-chairperson or a Director;
  - i. By notice in writing to the chairman of the Board resigns his office; or
  - ii. Holds any office of profit under the company; or
  - iii. Becomes an un-discharged insolvent or has applied to be adjudicated as insolvent and his application is pending; or
  - iv. Has a receiving Order made against him; or
  - v. Is found lunatic or becomes of unsound mind or has an Order made in respect of him or his estate by any authority having jurisdiction in lunacy, or



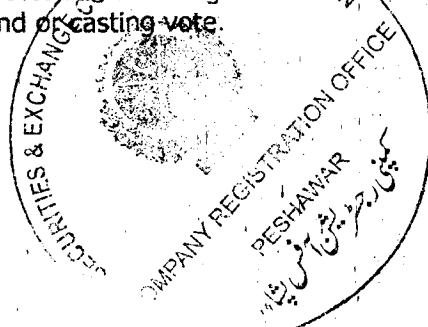
- vi. Is, by reason of mental or physical disability, incapable of performing his duties or
  - vii. Is convicted of an offence involving moral turpitude; or
  - viii. Is concerned or participates in the profits of any contract with the company having failed to disclose his interest herein in the manner required by section 214 and 219 of the ordinance; or
  - ix. Fails to attend three consecutive meetings of the Board or from all meetings of the Board for a continuous period for three months, whichever is the longer without leave of absence from the Board; or
  - x. Is prohibited from being a Director under Section 190 of the Ordinance; or
  - xi. Becomes ineligible for the post under section 187 and 188 of the Ordinance; or
  - xii. Is removed from office either by the chairman of the Board under Article 25 (ii) or (iv) or by a special Resolution of the company under Article 25 (iii) as the case may be;
- Provided, however that no Director or the Vice-Chairperson, as the case may be, shall vacate his being a member of any public company which has (without the consent of the Board) entered into contracts with, or done any work for the company, nevertheless the provisions of articles 54 shall apply or be deemed to apply to such a matter.

#### **ALTERNATE DIRECTORS**

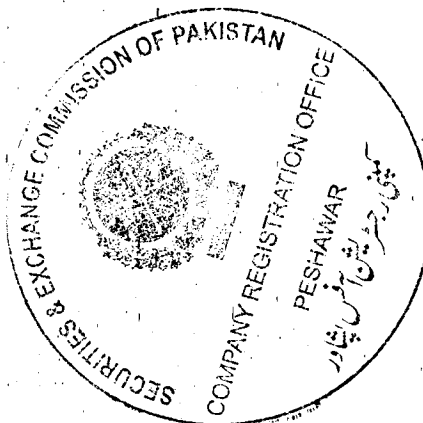
42. Any director not permanently resident in Pakistan or any Director resident but intending to be absent from Pakistan for a period not less than three months may appoint any person acceptable to the Board to be an Alternate Director of the Company to act for him. Every such appointment shall be in writing in hand of the Director making appointment. An alternate Director so appointed shall not be entitled to appoint another Director but shall otherwise be subject to the provisions of the Articles with regard to Directors. An alternate Director shall be entitled to receive notices of all meetings of the Board, and to attend and vote as a Director in the absence of such appointer. An alternate Director shall ipso facto cease to be an Alternate Director if his appointer for any reason ceases to be a Director or if and when his appointer returns to Pakistan, or if the appointee is removed from office by notice in writing under the hand of the appointer.

#### **MEETINGS AND PROCEEDINGS OF THE BOARD**

43. The Board may meet together for the despatch of business adjourn, or otherwise regulate its meetings as it thinks fit. The Board shall meet at least twice a year. The chairman of the Board or the Vice-chairperson or any three Directors may at any time summon a meeting of the Board. Not less than 14 days notice shall be given to the Directors of any such meeting and the agenda and the working papers for the meeting shall be circulated to the Directors with the notice of such meetings. With the consent of directors present in Pakistan, a meeting of Board may be held at shorter notice.
44. All questions arising at a meeting of the Board shall be decided by a majority of votes to be given by a show of hands but the chairman may order, if so requested by any Director, that voting on any specific question shall be by secret ballot. In the event of an equality of votes howsoever given the Chairman shall in addition to his deliberative vote have a second or casting vote.



45. At least one-third (1/3rd) of the total number of directors or four (4) directors whichever is higher, for the time being of the company, shall constitute a quorum.
46. The chairman of the Board shall preside as chairman at every Board meeting. If at any meeting he/she is not present within fifteen minutes after the time appointed for holding the same, the vice-Chairperson of the Board will take the chair and, failing him, the Directors present may choose one of their number to be Chairman of the meeting.
47. The continuing directors may act notwithstanding any vacancy in their body, but if and so long as their number is reduced below seven, the continuing, Directors may act for the purpose of summoning a General Meeting, but for no other purpose.
48. The Board may at their first meeting after the Annual General Meeting in each year appoint such Standing Committees for the different branches of the company's work as it may think proper. Each standing committee shall consist of such directors and other persons as the Board may appoint. Each Standing committee shall cease to exist at the next Annual General Meeting which is held after the date of its appointment but the members thereof shall be eligible for reappointment. It shall be the duty of end standing committee to investigate, report and make suggestions upon any matter submitted to it by the Board of coming before it in any other way.
49. Any resolution which a standing committee may pass (after being duly proposed and seconded) shall be subject to confirmation or otherwise by the Board. All directors shall be entitled to attend meetings of each standing committee but only the appointed members shall have the right to vote thereat. The quorum of each standing committee shall be determined by the Board. Resolutions of meetings of standing committee shall be carried by a majority in number of members present, but when any resolution which was not passed unanimously comes up to the Board for confirmation or otherwise the fact that it was not unanimously passed shall be stated. The chairman and Vice-Chairperson of the Board shall be notified of every meeting of each standing committee. Subject to the provisions of this Article, each standing committee may conduct its proceedings in such manner as it may think proper.
50. Apart from the Standing Committees hereinbefore mentioned, the Board may refer any matter to a Sub-Committee consisting of such Directors and other persons as the Board may appoint to investigate and report to the Board thereon but the Board shall not be at liberty to delegate its powers to any such Sub-Committee. The Sub-Committee may conduct its investigation in such manner as it thinks proper and shall present a written or oral report to the Board. Such report shall state whether the Sub-Committee, in presenting it, is unanimous or otherwise.
51. Every standing committee or sub-committee shall be chaired by a Director appointed by the Board. If at any meeting the Chairman of such committee is not present within fifteen minutes after the time appointed for holding the same, the members of the committee present may choose one of their members to be the Chairman of the meeting of such committee.



52. A standing committee of sub-committee may meet and adjourn as it thinks proper. Questions arising at any meeting shall be determined by a majority of votes of the members present and in case of an equality of votes the chairman of such committee shall have a second or casting vote.

53. Apart from the standing committee and sub-committee hereinbefore mentioned, the Board may appoint a panel of advisors, consisting of such persons as the Board may decide to advise the Board on such matters as may be considered necessary by the Board.

54. A director shall not be entitled to vote on any matter which affects him personally or which he/she is obliged to disclose or declare under Section 214 of the Ordinance nor shall he/she be considered present for the purpose of forming quorum, even though he/she might be present. Chairman of the Board, may require him to withdraw during the discussion, and he/she shall in that case withdraw accordingly.

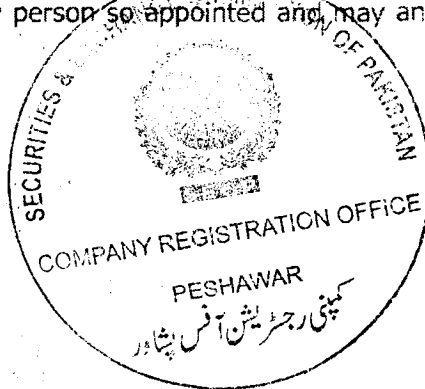
55. A Resolution in writing signed by all the Directors present in Pakistan shall be as valid and effectual as if it had been passed at a meeting of the Board duly called and constituted.

56. All acts done by any meeting of the Board, or of a standing committee or sub-committee or by any person acting as a Director, shall (notwithstanding that it be afterwards discovered that there was some defect in the appointment of any such members or of such persons acting as aforesaid, or that they or any of them were disqualified) be as valid as if every such person had been duly appointed and was qualified to be a Director or such Member.

### LOCAL MANAGEMENT

57. The following provisions shall have effect: -

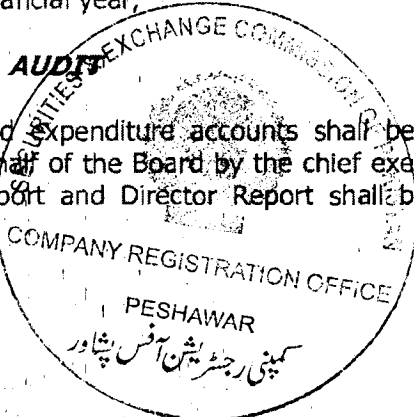
- i) The Board may from time to time provide for the management of the affairs of the company in any special locality in Pakistan, in such manner as they shall think fit and the provision contained in the two next following paragraphs shall be without prejudice to the general powers conferred by this paragraph;
- ii) The Board may from time to time at any time establish any local Boards or agencies for managing any of the affairs of the company in any specified locality in Pakistan, and may appoint any person to be member of such local Boards, or any managers or agents, and may fix their remuneration;
- iii) The Board may from time to time and at any time delegate to any person so appointed any of the powers, authorities and discretions for the time being vested in the Board, and may authorize the members for the time being of any such local Board, or any of them, to fill up any vacancies, and any such appointment or delegation may be made on such terms and subject to such conditions as the Board may think fit; and the Board may at any time remove any person so appointed and may annual or vary any such delegation.



58. Any such delegated or attorney appointed under Article 30 may be authorized by the Board to sub-delegate all or any of the powers, authorities and discretion for the time being vested in them

### ACCOUNTS

59. The Board shall cause proper books of accounts to be kept with respect to
- a) all sums of money received and expended by the company and the company and the matters in respect of which the receipts and expenditure took place;
  - b) All sales and purchases of goods by the Company; and
  - c) the assets and liabilities of the company.
60. Proper books of accounts shall not be deemed to be kept, with respect to the matters specified therein if there are not kept such books as are necessary to give a true and fair view of the state of the Company's affairs and to explain its transactions.
61. The books of accounts shall be kept at the registered office of the company or, subject to section 230 of the Ordinance, at such other place or places as the Board thinks fit, and shall always be open to inspection by the Directors or the person duly authorized by the Board.
62. The directors shall from time to time in accordance with Section 233, 234, 236, 237 and 241 of the Ordinance, cause to be prepared and to be laid before the Company in General Meeting such balance sheets, income and expenditure accounts, group account (if any) and reports as are referred to in those sections.
63. Copies of the income and Expenditure Account, Balance sheet and Reports (all of which shall be framed in accordance with any statutory requirements for the time being in force) and of any other documents required by law to be annexed or attached thereto or to accompany the same shall not less than twenty-one clear days before the date of the Annual General Meeting be sent to the Members and to all other persons entitled to receive notices of such Meeting in the manner in which notices are hereinafter directed to be given.
64. In addition to such statutory Accounts as aforesaid and without prejudice to the right of the company or the Board to require account more frequently, the Board shall cause to be prepared and sent to all the Members and Directors a quarterly statement of income and expenditure made up to the end of September, December, March and June each year. The quarterly statement and the report both signed by the Chief Executive and two Directors shall be sent to the members in all the Directors not later than one month after the date to which the statement is made up.
65. The members shall prior to the commencement of the financial year receive from the Board a budget approved by it of the estimated income and proposed expenditure of the company for the next succeeding financial year.
66. The balance sheet and income and expenditure accounts shall be approved by the Directors and shall be signed on behalf of the Board by the chief executive and at least two directors and the Auditors Report and Director Report shall be attached to the



Balance sheet, or there shall be inserted at the foot of the Balance Sheet a reference to the Report and the Report shall be read before the Company at the Annual General Meeting and shall be open to inspection by any Member or Director.

### **AUDITORS**

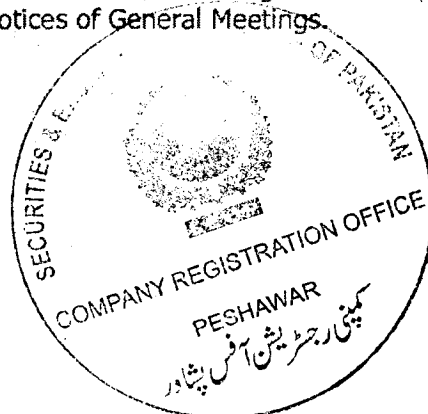
67. Auditors shall be appointed and their duties regulated in accordance with section 252 to 255 of the ordinance.

### **PUBLICATION OF COMPANY MATTERS**

68. The company shall not publish any information or make a public statement concerning the Company, and institutions under its control, or any matters whatsoever without the previous consent in writing of the Chairman.
69. No Member or Director shall, except so far as is necessary and proper in the ordinary course of his duties, make public or disclose to any person or other body any information as to the affairs of the Company or any institutions under its control or anything relating to their employees, consultants or as to any other matters which may come to his knowledge, in the course of his duties as such Members or Director as aforesaid. The service agreement of all employees and all agreements retaining the services of consultants and other persons of comparable status shall embody a clause in terms similar to this Article.

### **NOTICE**

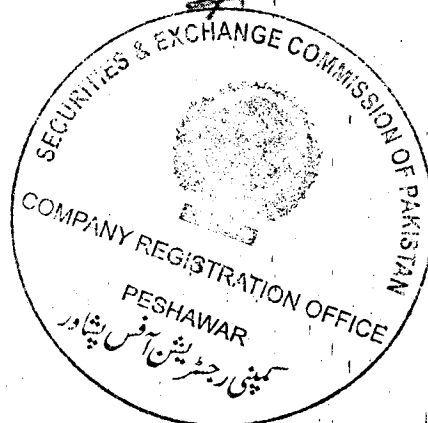
70. (a) A Notice may be given by the company or the Board to any Member or Director, either personally or by sending it by registered post to him at his registered address. Notice sent to any person residing out of Pakistan shall be sent by airmail as well as to the address, if any, within Pakistan supplied by him to the Company for the giving of notices to him.
- (b) Where a notice is sent by post, service of the Notice shall be deemed to be effected by properly addressing, prepaying and posting a letter containing the Notice unless the contrary is proved, to have been effected at the time at which the letter would be delivered in the ordinary course of post.
- (c) If a member has no registered address in Pakistan and has not supplied to the company an address within or outside Pakistan for the giving of the notice to him, a notice addressed to him in particular or to all Members in general and advertised in a newspaper circulating in the province in which the registered office of the Company is situated shall be deemed to be duly given to him on the day on which the advertisement appears.
- (d) Notice of every General Meeting shall be given in any manner hereinbefore authorized to every Member and the Auditors for the time being of the company. No other person shall be entitled to receive Notices of General Meetings.



**PROVISIONS RELATING TO TAX**

71. The company shall abide by and adhere to the following rules:

- i. The company shall get its annual accounts audited from a firm of Chartered Accounts.
- ii. The Company shall, in the event of its dissolution, after meeting all liabilities, transfer all its assets to an institution, fund, trust, society or organization, which is an approved non-profit organization, and intimation of such transfer will be given to Commissioner, Federal Board of Revenue, within three months of the dissolution.
- iii. The company shall utilize its money, property or income or any part thereof, solely for promoting its objects.
- iv. The company shall not pay or transfer any portion of its money, property or income, directly by way of dividend, bonus or profit, to any of its member(s) or the relative or relatives of member or members.
- v. The Company shall maintain its bank accounts with a scheduled Bank or in a post office or national saving organization, National Bank of Pakistan or National Commercialized Banks.
- vi. Without prejudice to the powers conferred on the Commission under section 42 of the Companies Ordinance, 1984, the association shall not change its memorandum and articles of association without approval of Commissioner, Income Tax, if it has been approved by him as a non-profit organization.
- vii. The company shall restrict the surpluses or monies validly set apart, excluding restricted funds, upto twenty five percent (25%) of the total income of the year. Provided that such surpluses or monies set apart are invested in Government Securities, a collective investment scheme authorized or registered under the Non-Banking Finance Companies (Establishment and Regulation) Rules, 2003, mutual funds, a real estate investment trust approved and authorized under Real Estates Investment Trust Regulations, 2008 or scheduled banks.



**Name, Address and  
Description of subscribers**

**Signatures  
of Subscribers**

**Witness to  
Subscribers Signatures**

1. Mr. Mohammad Azam Khan  
S/O Abdul Ghafoor Khan  
Village Parang, Charsadds

2. Mr. G.M. Khattak  
S/O Khan Jan Mohammad Khan  
45-D/1, Phase-I  
Hayatabad, Peshawar.

3. Mr. G. M Khan  
S/O Abdul Qayum Khan  
Mardan House, Par Road,  
University, Peshawar.

4. Mr. Abdul Rehman Khan  
S/O Gulabad Bacha Kallai  
Charsadda.

5. Mr. Ehsanullah  
S/O Nisar Khan  
Village Nal, Matta, Swat.

6. Mr. Asmatullah  
S/O Fazlullah  
MD Argo Oil Mills, Chashma  
Road, D. I Khan

7. Maj: Gen (Rtd), Mumtazz Ahmad  
S/O Khan Bahader Ghulam  
Rabbani Khan, Kohsar, Mansehra.

8. Mr. Sharif Khattak  
S/O Durrani, Mohalla,  
Faqir Khel, Karak.

9. Begum Zari Sarfaraz  
W/O Mohammad Azam Khan,  
Sarfaraz House, Mardan.



10. Dr. Akhter Hamid Khan  
S/O Amir Abdul Khan  
C/1/IV/Maimair View Gulshan  
Abad, Karachi - 47

11. Mr. Shoab Sultan Khan  
S/o Mohammad Nasim Khan  
H. No. 8 Aga Khan Road F6/4  
Islamabad.

12. Mr. Abdul Qayum Khan  
Director, Pakistan  
For Rural Development  
Pakistan

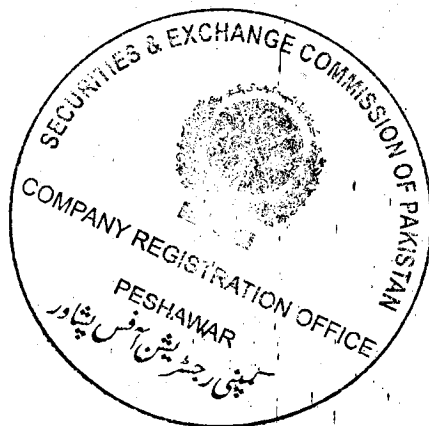
13. Mr. Abdul Rehman Khan  
Vice chancellor, Agriculture  
University Peshawar

Certified to be True Copy

Assistant Registrar of Companies  
Securities & Exchange Commission of Pakistan

CRO, Peshawar 18-11-2005

12464





Federal Board of Revenue  
Government of Pakistan

**OFFICE OF THE  
COMMISSIONER(IR) CORPORATE ZONE  
REGIONAL TAX OFFICE JAMRUD ROAD,PESHAWAR.**

No.CIR.C.ZONE/RTO-PR/2017-18/ 222

Dated: 06-09-2017.  
30/08/2017

To,

✓  
The Chief Executive,  
M/s. Sarhad Rural Supoort Programme,  
129- Defence Colony, Street No.8, Peshawar Cantt.

Subject; **ALETERED AND APPROVED MEMORANDUM OF ASSOCIATION  
AND ARTICLE OF ASSOCIATION BY SECP- APPROVAL  
REGARDING.**

Reference your letter No.SMM/SRSP/FBR/CD/2017/01 dated 29.8.20`17 on the  
above subject.

The changes in clauses of Memorandum and Article of Association of  
the above named organization(NPO) as according to the insertion of new  
sections in Companies Act 2017 Approved by the Security and Exchange  
Commission of Pakistan vide No.CLD/CCD/Co.42/RN/100/2015/170 dated  
24.07.2017 are hereby approved

  
(Dr.SHAH KHAN)  
COMMISSIONER(IR)



SECURITIES AND EXCHANGE COMMISSION OF PAKISTAN

Company Law Division  
Corporatization & Compliance Department

\*\*\*

No. CLD/CCD/Co.42/RN/100/2015-  
24<sup>th</sup> July, 2017

170

Mr. M. M. Faisal Banday, Partner  
M/s. KPMG Taseer Hadi & Co.,  
Chartered Accountants,  
Sixth Floor, State Life Building No. 5,  
Jinnah Avenue, Blue Area, Islamabad

Subject: APPLICATION SEEKING PRIOR APPROVAL FOR ALTERATION IN MEMORANDUM OF ASSOCIATION AND ARTICLES OF ASSOCIATION IN TERMS OF CONDITION OF LICENCE GRANTED UNDER SECTION 42 OF THE COMPANIES ACT, 2017 - SARHAD RURAL SUPPORT PROGRAMME

Dear Sir,

Please refer to your application regarding the captioned subject.

2. In exercise of powers conferred under sub-rule 4(iii) of rule 6 of the Companies (General Provisions and Forms) Rules, 1985, the proposed alterations in Memorandum of Association and Articles of Association as shown in the attached Annexure-A has been approved by the competent authority, subject to the condition that company through special resolution will get approved the alterations in Articles of Association from its members under the relevant provisions of the Companies Act, 2017 (the 'Act').

3. It is further pointed out that this letter conveys a prior approval of the alteration proposed by the Company to be made in its Memorandum and Articles of Association and this shall not be construed to mean that such alteration have been made in the Memorandum and Articles of association. The alterations shall be considered duly made only after compliance of relevant requirements of law by the Company in terms of passing of special resolution to alter in Memorandum and Articles of Association in terms of section 36 of the Act. The Company may take further action as required under the law in this regard.

Regards,

Khurram Shahzad  
Assistant Registrar

Enclosed: As above

Copy to:

Joint Registrar, Company Registration Office, Peshawar

**Alteration in  
Memorandum of Association  
and  
Articles of Association  
of  
Sarhad Rural Support Programme**

**Memorandum of Association:**

		<b>Existing</b>		<b>Proposed changes</b>	<b>Comments of SECP</b>
II.		The registered office of the Company shall be situated in North West Frontier Province.	II.	The registered office of the Company shall be situated in the province of Khyber Pakhtunkhwa.	As proposed by the Association.
III.		The objects of which the Company is established are as follows:	III.	No change proposed	
	1.	To develop the rural areas and the resources of land, undertake, support and subsidies measures, programmes, plans and schemes for rural upliftment, socio-economic welfare and modernization of rural areas and to construct, establish, install, layout, improve maintain, work, manage, or aid in, contribute or subscribe to the construction, erection, maintenance and improvement of town-ships, settlements and villages, houses, buildings, roads, ways, bridges, canals, water courses, wells, tanks, stores, shops, markets, warehouses, clubs, schools, colleges, hospitals, dispensaries, reading rooms, parks, gardens, playgrounds, places of amusement and recreation and plans for generation and distribution of energy at domestic and village levels and other conveniences calculated directly or indirectly to contribute to the establishment and maintenance of civic amenities and to undertake measures for improvement of conditions of housing, work, health, hygiene and sanitation and the quality	1.	To develop the rural areas and the resources of land, undertake, support and subsidies measures, programmes, plans and schemes for rural upliftment, socio-economic welfare and modernization of rural areas and to construct, establish, install, layout, improve maintain, work, manage, or aid in, contribute or subscribe to the construction, erection, maintenance and improvement of town-ships, settlements and villages, houses, buildings, roads, ways, bridges, canals, water courses, wells, tanks, stores, shops, markets, warehouses, clubs, schools, colleges, hospitals, dispensaries, reading rooms, parks, gardens, playgrounds, places of amusement and recreation and develop, construct and operate facility generation and distribution of energy at domestic and village levels and other conveniences calculated directly or indirectly to contribute to the establishment and maintenance of civic amenities and to undertake measures for improvement of	

		of life.		conditions of housing, work, health, hygiene and sanitation and the quality of life <u>subject to the approval from relevant competent authority.</u>	
	2A	Not exist	2A	To provide microfinance services (only as a Non-Bank Microfinance Company) as permitted by the Securities and Exchange Commission of Pakistan in order to uplift poor and underprivileged vicinities; to develop business of the poor families through microfinance services and to provide microfinance services to all the people, families, communities etc. of the rural areas for their sustainable development and livelihood subject to the conditions provided under the license issued by Securities and Exchange Commission of Pakistan to act as NBFC company.	
IV		It is hereby declared that:	IV	The Company shall achieve the above said objects subject to the following conditions:	
	a)	All income of the Company shall be utilized towards the promotion of the aims and objects of the company.		1. The company is formed as a public company limited by guarantee and not having a share capital.	
	b)	The company shall apply all its profits and other income from its business, activity or from any of its property, howsoever derived, solely towards the promotion of the objects of the company as set forth in this Memorandum of Associations, and the company is hereby specifically prohibited to pay any dividend to its members in accordance with requirement of Section 42 of the companies ordinance, 1984.		2. Payment of remuneration by the company or its subsidiary entity for services or otherwise to members of the company or to their family members whether holding an office in the company or its subsidiary or not, shall be prohibited provided that the prohibition shall continue to apply for a period of five years after a member quits from his membership of the company.	

				<p>3. No change in the Memorandum and Articles of Association shall be made except with the prior approval of the Securities and Exchange Commission of Pakistan.</p> <p>4. Patronage of any government or authority, express or implied, shall not be claimed unless such government or authority has signified its consent thereto in writing.</p> <p>5. The company shall not exploit or offend the religious susceptibilities of the people.</p> <p>6. The company shall not, directly or indirectly, participate in any political campaign for elective public office or other political activities akin to those of a political party or contribute any funds or resources to any political party or any individual or body for any political purpose.</p> <p>7. The subscribers to the Memorandum and Articles of Association of the Company shall continue to be the members of the Company unless allowed by the Commission on application to quit as members provided that a proposed new director in lieu thereof shall not be appointed or opted unless allowed by the Commission on application to appoint or opt him/her as director.</p> <p>8. The company in all its</p>	
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				<p>letterheads, documents, sign boards, and other modes of communication, shall with its name, state the phrase "A company set up under section 42 of the Companies Act, 2017."</p> <p>9. The income and any profits of the company, shall be applied solely towards the promotion of objects of the company and no portion thereof shall be distributed, paid or transferred directly or indirectly by way of dividend, bonus or otherwise by way of profit to the members of the company or their family members.</p> <p>10. The Company shall not appeal, solicit, receive or accept funds, grants, contributions, donations or gifts, in cash or in kind, from foreign sources except with the prior permission, clearance or approval from the relevant public authorities as may be required under any relevant statutory regulations and laws. No funds shall be received otherwise than through proper banking channels i.e., through crossed cheque, pay-order, bank draft, etc.</p> <p>11. The Association shall close its accounts on 30th of June each year.</p> <p>12. The Association shall make no investment, whatsoever, in its associated companies except with the prior</p>	
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			approval of the Commission and subject to such conditions as it may deem fit to impose.	
			13. Notwithstanding anything stated in any object clause, the company shall obtain such other licenses, permissions, or approvals of the relevant public authorities as may be required under any relevant statutory regulations and laws for the time being in force, to carry out its specific object.	
			14. The company shall comply with such conditions as may be imposed by the Securities and Exchange Commission of Pakistan from time to time.	
V		The Company is being formed as a public company.	Deleted.	
VI.		Provided further that no member of the Board of director or General Body of the company shall be appointed to any salaried office of the fund or any office of the company paid by fees and that no remuneration shall be given by the company to any member of such Board of directors or General Body except repayment of out of pocket expenses and interest on money lent/borrowed or rent of the premises demised to the company.	Deleted.	
VII	a)	No change in the Memorandum and the Article shall be made except with the prior approval of the corporate Law Authority.	Deleted.	
	b)	Patronage of any government or authority, express or implied shall not be claimed unless such government or authority has signified its	Deleted.	

		consent thereto in writing.			
			V	The Territories to which the object of the company shall extend are declared to include whole of Pakistan	
VIII		The liability of the members is limited.	VI	The liability of the members is limited.	
IX	a)	In the event of the company being wound up, every member of the company, presently being a member or within one year afterwards, undertakes to contribute to the assets or the company for payment of the debts and liabilities of the company and for the costs, charges and expenses of winding up, such amounts as may be required but not exceeding Rs. 1000/- (rupees one thousand, only)	VII	Every member of the company undertakes that he shall contribute to the assets of the company in the event of its being wound up while he is a member or within one year afterwards, for payment of the debts or liabilities of the company contracted before he ceases to be a member and the costs, charges and expenses of winding up and for adjustment of the rights of the contributories among themselves such amount as may be required but not exceeding Rs. 100,000/- (Rupees one hundred thousand only).	
	b)	Payment of remuneration for services or otherwise to its members, whether holding an office in the company or not, shall be prohibited.		Deleted as already covered at IV(2) above.	
	c)	If upon winding up and dissolution of the Company, there remains, after satisfaction of all debts, and liabilities, any property whatsoever, the same shall not be paid to or distributed amongst the members of the company but shall be given or transferred to some other institution(s) having purpose(s) similar to the purposes of the company, such institutions(s) to be determined by the members of the company at or before the time of dissolution under intimation to the government.	VIII	In the case of winding up or dissolution of the company, any surplus assets or property, after the satisfaction of all debts and liabilities, shall not be paid or disbursed among the members, but shall be given or transferred to some other company established under section 42 of the Companies Act, 2017, having similar or identical objects to those of the Company to be decided by the members of the Company in their general meeting by a special resolution, and with the approval of Commissioner of Income Tax under section 2 (36) of the Income Tax Ordinance, 2001, under intimation to the Securities	

				and Exchange Commission of Pakistan, within three months.	
X		It is hereby undertaken that the company shall not engage in banking, leasing or the business on any investment company, or as investment advisor, insurance company or the business of financial institution, managing agency or construction business or in any unlawful business and that nothing in the object clauses shall be construed to entitle it to engage in such business.	IX	It is hereby undertaken that the company shall not engage in banking, leasing or the business on any investment company, or as investment advisor, insurance company, managing agency or construction business or in any unlawful business and that nothing in the object clauses shall be construed to entitle it to engage in such business.	

#### Articles of Association

	Existing		Proposed changes	Comments of SECP
	<b>PRELIMINARY</b>			As proposed by the Association
1.	<p>In these Articles:</p> <p>Unless the context otherwise requires, words or expressions contained in these Articles shall have the same meaning as in the Ordinance. Words in the singular shall include the plural and vice-versa; words importing the masculine gender shall include the feminine gender and words importing persons shall include bodies corporate.</p> <p>"The Ordinance" means the Companies Ordinance 1984 (XL VII of 1984).</p> <p>"The Board" means the Board of Directors for the time being of the Company acting at a meeting or through a Committee of Directors.</p> <p>"The Company" means the Sarhad Rural Support Programme.</p>	1.	<p>No change proposed</p> <p>"The Act" means the Companies Act, 2017.</p> <p>No change proposed</p> <p>No change proposed</p> <p>No change proposed</p> <p>"The Seal" means the common seal or the official seal of the Company as the case may be.</p> <p>No change proposed</p> <p>No change proposed</p>	

	<p>General Meeting" meeting of the Members of the time being of the Company;</p> <p>"Member" means a person, who is, for the time being a member of the Company,</p> <p>"Month" means calendar month;</p> <p>"Quarter" shall mean a period of three months terminating on any of the following dates, viz the thirty first day of March, the thirtieth day of June, the thirtieth day of September and the thirty first day of December in any year and "Quarterly" shall refer to any such period:</p> <p>"In writing" means written, typed or printed or partly written, typed or printed.</p> <p>Reference in these Articles to any provision of the Ordinance shall be construed as a reference to such provision as modified or re-enacted by any statute for the time being in force.</p>		<p>No change proposed</p> <p>No change proposed</p> <p>"In writing" and "Written" includes printing, lithography, type-writing, telex, facsimile (fax), and other modes of representing or reproducing words in a visible form by modern electronic devices including video compact disc recordings.</p> <p>No change proposed</p>	
	<b>MEMBERSHIP OF THE COMPANY</b>			
2.1	The Board may, in its absolute discretion, admit or refuse to admit any natural or legal person as member of the Company and the decision of the Board shall not be questioned at any forum. The Company is being registered with thirteen Members but Board shall have authority to increase the number of members.	2.1	The Board may, in its absolute discretion, admit or refuse to admit any natural or legal person as member of the Company and the decision of the Board shall not be questioned at any forum. The Company is being registered with thirteen Members but the minimum number of members shall not be, at any time, less than three (3). The Board may, from time to time, whenever the Company or the business of the Company requires, increase the number of members.	
2.1(A)		2.1(A)	The Company in general meeting may from time to	

			time lay down the qualifications and conditions subject to which any person or class of persons shall be admitted to membership of the Company.	
2.1(B)		2.1(B)	<p>Every person, upon applying for admission to membership, shall submit to the Company an undertaking on the stamp paper of appropriate value that:</p> <p>a. I have not been associated with any money laundering or terrorist financing activities and neither have approved receipt of nor received such monies and likewise neither have approved disbursement of nor disbursed such monies in any manner for money laundering or terrorist financing purposes; and</p> <p>b. I have not been associated with any illegal banking business, deposit taking or financial dealings or any other illegal activities.</p>	
2.2(A)	Not exist	2.2(A)	One person shall have the right to hold one membership.	
	<b>CESSATION / EXPULSION FROM MEMBERSHIP</b>			
2.3(A)	Not exist	2.3(A)	<p>A member renders himself liable to expulsion or suspension by the board if:</p> <p>(a).he refuses or neglects to give effect to any decision of the board; or</p> <p>(b).he infringes any of the regulations of the articles; or</p> <p>(c). he is declared by a court of competent jurisdiction to have committed a fraud, or to be bankrupt,</p>	

			<p>or to be insane or otherwise incompetent; or</p> <p>(d).he is held by the Committee of the Company to have been guilty of any act discreditable to a member of the Company; or</p> <p>(e).he is acting or is threatening to act in a manner prejudicial to the objects, interest or functioning of the Company or any other institute, body corporate, society, association or institution in which the Company has an interest.</p>	
2.3(B)	Not exist	2.3(B)	<p>The Company in general meeting may, on an appeal of the aggrieved member and after giving an opportunity of hearing, annul or modify the decision of the board with regard to expulsion of the member by resolution supported by two-thirds majority. The person expelled shall be reinstated as a member from the date of the resolution of the general meeting annulling the decision of the board.</p>	
2.3(C)	Not exist	2.3(C)	<p>Termination of membership shall occur automatically:</p> <p>(a).In the event of the death of a member; and</p> <p>(b).In the event a member fails to pay any amount due by him to the Company within three (3) months after such obligation has become due</p>	
	<b>GENERAL MEETINGS</b>			
3.1	The Company shall in each year hold a general meeting as the Annual General Meeting, in	3.1	A general meeting to be called annual general meeting, shall be held, in	

	shall be called Annual General Meetings and all other General Meetings shall be called extraordinary General Meetings.		members of the Company other than an annual general meeting shall be called "Extraordinary General Meetings".	
3.4(A)	Not exist	3.4(A)	If the board does not proceed to cause a meeting to be held within twenty-one days from the date of the requisition being deposited, the requisitionists, may themselves convene a meeting to be held not more than three months, from the date of the deposit of the requisition.	
	<b>NOTICE OF GENERAL MEETINGS</b>			
5.	Twenty-one day's notice at the least (exclusive of the day on which the Notice is served or deemed to be served but inclusive of the day for which it is given) specifying the place, the day and the hour of meeting and, in the case of special business, the general nature of such business shall be given in manner hereinafter mentioned, or in such other manner, if any, as may be prescribed by the company in General meeting to such persons as are under these Articles entitled to receive such Notice from the company provided that Meeting of the company shall, notwithstanding that it is called by shorter notice than that specified in this Article, be deemed to have been duly	5.	Twenty-one days notice at the least (exclusive of the day on which the Notice is served or deemed to be served but inclusive of the day for which it is given) specifying the place, the day and the hour of meeting and, in the case of special business, the general nature of such business shall be given in manner hereinafter mentioned, or in such other manner, if any, as may be prescribed by the company in General meeting to such persons as are under the Act and these Articles of the Company entitled to receive such Notice from the company provided that Meeting of the company shall, notwithstanding that it	

	called if it is so permitted by the Registrar. The accidental omission to give notice to or the non-receipt of notice of a meeting by any Member shall not invalidate the proceedings at that meeting.		is called by shorter notice than that specified in this Article, be deemed to have been duly called if it is so permitted by the Registrar. The accidental omission to give notice to or the non-receipt of notice of a meeting by any Member shall not invalidate the proceedings at that meeting.	
	<b>PROCEEDINGS AT GENERAL MEETINGS</b>			
10.	At any General Meeting a resolution put to the vote of the meeting shall be decided on a show of hands, unless a poll is (before or on the declaration of the result of the show of hands) demanded by Members having not less than one-tenth of total voting power. Unless a poll is so demanded, a declaration by the Chairman that a resolution has on a show of hands been carried, or carried unanimously, or by a particular majority, or lost, and an entry to that effect in the book containing minutes of proceedings of the company, shall be conclusive evidence of the fact, without proof of the number or proportion of the votes recorded in favour of or against such resolution. The demand for a poll may be withdrawn.	10.	At any General Meeting a resolution put to the vote of the meeting shall be decided on a show of hands, unless a poll is (before or on the declaration of the result of the show of hands) demanded by Members having not less than one-tenth of total voting power. Unless a poll is so demanded, a declaration by the Chairman of the meeting that a resolution has on a show of hands been carried, or carried unanimously, or by a particular majority, or lost, and an entry to that effect in the book containing minutes of proceedings of the company, shall be conclusive evidence of the fact, without proof of the number or proportion of the votes recorded in favour of or against such resolution. The demand for a poll may be withdrawn.	
11.	Except as provided in Articles 13 if a poll is duly demanded it shall be taken in such manner as the chairman directs, and the results of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded.	11.	Except as provided in Articles 13 if a poll is duly demanded it shall be taken in such manner laid down in section 145 of the Act, and the results of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded.	
	<b>THE BOARD OF DIRECTORS</b>			
19(A)	Not exist	19(A)	The Board shall fix the number of elected Directors of the Company not later	

			than thirty five (35) days before the convening of the general meeting at which Directors are to be elected, and the number so fixed shall not be changed except with the prior approval of the general meeting of the Company in which election to be held	
19(B)	Not exist	19(B)	No person shall be appointed as a director if he is ineligible to hold office of director of a company under section 153 of the Act.	
	<b>CHIEF EXECUTIVE</b>			
38.	Subject to the provisions of the ordinance and clause IV of the Memorandum of Association, the Board shall appoint to the office of chief executive any person including any elected director, for such period not exceeding three years and on such terms as they deem fit.	38.	Any person including any elected director shall be appointed as Chief Executive of the Company by the Board of Directors of the Company. The Directors shall within 14 days of the incorporation of the Company or from the date of election of directors or the office of the Chief Executive falling vacant, as the case may be, appoint, subject to the provisions of the Act, a Chief Executive of the Company up to the date of first annual general meeting and subsequently he will hold office for a period of three years. The Board may revoke such appointment and appoint another person in place of the Chief Executive so removed or who may vacate office by reason of death, resignation or otherwise as the case may be.	
38 (A)	Not exist	38(A)	The period for which the Chief Executive shall be appointed shall not exceed three years unless he ceases to hold office or a shorter time of appointment is fixed by the directors, or he earlier resigns or his services as Chief Executive has been terminated by the Board in accordance with the provisions of the Act. On the	

			<p>expiry of his term of office, the Chief Executive shall be eligible for re-appointment in the manner provided in these Articles or in accordance with the provisions of the Ordinance. The terms and conditions of appointment of the Chief Executive, including his powers, duties, obligations and remuneration, shall be determined by the Board, subject to the provisions of the Ordinance and these Articles.</p> <p>Provided that the chief executive appointed against a casual vacancy shall hold office till the directors elected in the next election appoint a chief executive.</p>	
38 (B)	Not exist	38(B)	<p>The Board shall have the power to assess the performance of the Chief Executive every year and shall replace the Chief Executive in accordance with provisions of the Act, if his performance is found unsatisfactory in the opinion of the Board.</p>	
38 (C)	Not exist	38(C)	<p>The Chief Executive shall hold office, enjoy and exercise such powers, duties obligations and privileges as the Board may confer upon him from time to time and shall accordingly in exercise of such powers delegated to him, conform to any limits and restrictions which may be imposed by the Board from time to time in this respect. The Chief Executive may exercise all such powers and do all acts and things on behalf of the Company as he may be authorized to do by the Board.</p>	
38(D)	Not exist	38(D)	<p>The non-members Chief Executive shall be entitled to remuneration and benefits commensurate with his performance, which</p>	

			determination shall be made by the Board.	
38(E)	Not exist	38(E)	The Board by passing resolution by not less than three-fourths of the total number of directors for the time being or the Company may by a special resolution passed in a general meeting remove the chief executive before the expiry of his term in office.	
	<b>MEETINGS AND PROCEEDINGS OF THE BOARD</b>			
43	The Board may meet together for the dispatch of business adjourn, or otherwise regulate its meetings as it thinks fit. The Board shall meet at least twice a year. The chairman of the Board or the Vice-chairperson or any three Directors may at any time summon a meeting of the Board. Not less than 14 days notice shall be given to the Directors of any such meeting and the agenda and the working papers for the meeting shall be circulated to the Directors with the notice of such meetings. With the consent of directors present in Pakistan, a meeting of Board may be held at shorter notice.	43.	The Board may meet together for the dispatch of business adjourn, or otherwise regulate its meetings as it thinks fit. The Board shall meet at least once in each quarter. The chairman of the Board or the Vice-chairperson or any three Directors may at any time summon a meeting of the Board. Not less than 14 days notice shall be given to the Directors of any such meeting and the agenda and the working papers for the meeting shall be circulated to the Directors with the notice of such meetings. With the consent of directors present in Pakistan, a meeting of Board may be held at shorter notice.	
45	At least one-third (1/3rd) of the total number of directors or four (4) directors whichever is higher, for the time being of the company, shall constitute a quorum.	45.	At least one-third (1/3rd) of the total number of directors or four (4) directors whichever is higher, for the time being of the company <b>present personally or through video-link</b> , shall constitute a quorum.	
46	The chairman of the Board shall preside as chairman at every Board meeting. If at any meeting he/she is not present within fifteen minutes after the time appointed for holding the same, the vice-Chairperson of the Board will take the chair and, failing him, the Directors	46.	<b>The directors may elect one of their members as the Chairman of the Board.</b> The chairman of the Board shall preside as chairman at every Board meeting. If at any meeting he/she is not present within fifteen minutes after the time	

	present may choose one of their number to be Chairman of the meeting.		appointed for holding the same, the vice-Chairperson of the Board will take the chair and, failing him, the Directors present may choose one of their number to be Chairman of the meeting.	
55	A Resolution in writing signed by all the Directors present in Pakistan shall be as valid and effectual as if it had been passed at a meeting of the Board duly called and constituted.	55.	A resolution in writing signed by all Directors for the time being entitled to receive notice of the meeting of Directors or affirmed by them in writing shall be as valid and effectual as if it had been passed at a meeting of the Directors duly convened and held.	
	<b>ACCOUNTS</b>			
59	<p>The Board shall cause proper books of accounts to be kept with respect to</p> <p>a) all sums of money received and expended by the company and the matters in respect of which the receipts and expenditure took place;</p> <p>b) All sales and purchases of goods by the Company; and</p> <p>c) the assets and liabilities of the company.</p>	59.	The Directors shall cause to be kept proper books of account as required under section 220 of the Act.	
	<b>AUDIT</b>			
66	The balance sheet and income and expenditure accounts shall be approved by the Directors and shall be signed on behalf of the Board by the chief executive and at least two directors and the Auditors Report and Director Report shall be attached to the Balance sheet, or there shall be inserted at the foot of the Balance Sheet a reference to the Report and the Report shall be read before the Company at the Annual General Meeting and shall be open to inspection by any Member or Director.	66.	The balance sheet and income and expenditure accounts shall be approved by the Directors and shall be signed on behalf of the Board by the chief executive and <b>at least one director</b> and the Auditors Report and Director Report shall be attached to the Balance sheet, or there shall be inserted at the foot of the Balance Sheet a reference to the Report and the Report shall be read before the Company at the Annual General Meeting and shall be open to inspection by any Member or Director.	

### Salient Features:

- Company : Sarhad Rural Support Programme
- Main Sponsors : SRSP
- Technical Partners (Civil & EME) : Fuchun Industry Development Co, Ltd.  
Shenzhen, Designmen Consultant Pvt Ltd & Mukhtiar Engineering work.
- Capacity : 2 MW
- Location : Village Birmogh District Chitral, KP
- Source : Hydly Energy
- Technology : Combined Cycle
- Plant Configuration : 2 x 1 MW
- Power Purchaser : WAPDA/PESCO
- Transmission/Distribution Interconnection: 330 kV
- Land : Local Community Donated
- Nearest Grid : Jutilasht Grid of PESCO for Chitral Town Grid
- Date of Initiation : 5<sup>th</sup> March 2015
- Date of COD : Jan 2017
- Total EPC cost : Rs. 342.11 Million





# BIRMOGH GOLEN HYDROPOWER PROJECT

## OUTLINE DESIGN REPORT



MARCH, 2015



A handwritten signature in the bottom right corner of the page.

**DESIGNMEN Consulting Engineers (Pvt) Ltd.**

1<sup>st</sup> Floor, 9-West, Rizwan Plaza, Jinnah Avenue, Sector F-6, Islamabad, Pakistan.

Tel: +92-51-2828577, +92-51-2829002 Fax: +92-51-2307615

[www.designmen.com.pk](http://www.designmen.com.pk) [designmenislamabad@gmail.com](mailto:designmenislamabad@gmail.com)

**Report Disclaimer**

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## **INTRODUCTION**

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# 1 INTRODUCTION

## 1.1 GENERAL BACKGROUND

Hydropower development is among the prime factors for improving the socio-economic conditions of the people of Pakistan. This homeland is blessed with abundance of natural available water resources upon which the development of this sector depends.

Sarhad Rural Support Program (SRSP) is (understandingly largest) non-profit/non-government organization of Khyber Pakhtunkhwa (KP). It has pro-actively promoted people-centred development by improving livelihood of poor and vulnerable communities, while maintaining a special focus on women, playing leading role in supporting poverty reduction in KP over the past two decades. Moreover, SRSP is making every endeavour to explore and harness the available water resources to achieve the goal of socio-economic development. SRSP, looking for further strengthening, intends for the improvement of the existing power generation & Distribution network.

Chitral's location is very ideal for hydro power generation and to take full advantage of this potential. District Chitral is rich in Hydel power potential due to large numbers of waterfalls as well as availability of ample water resources for electricity generation in the district, but government had not taken any step to tap this potential of Chitral.

Proposed Birmogh Golen Hydropower Project is a 2 MW project located in Birmogh Village, on left bank of Golen Gol River in Chitral District of Khyber Pakhtunkhwa (KP) that is being developed in private sector under the management of Sarhad Rural Support Programme (SRSP). The project is located some 34 km North-east of the city of Chitral.

The responsibility for the Detailed Engineering Design preparation was assigned to Designmen Consulting Engineers (Pvt) Ltd. of Islamabad. A team of Engineers & Surveyors visited the site for conducting the necessary technical surveys and collecting required information for a raw site with an estimated design capacity of around 2 MW identified by SRSP, concession starting about 11 km upstream of Golen Gol HPP Power House along Golen Gol.

This report summarizes the available technical data on the site, evaluates development alternatives and describes the proposed optimum for development.

## 1.2 PROJECT IMPLEMENTATION ARRANGEMENT AND TIMINGS

### **Funding Agency**

SRSP donors: European Union

### **Executing Agency**

Sarhad Rural support Program (SRSP).

### **Authorized Representative**

The Project Director (PD) SRSP

### **Consultants**

Designmen Consulting Engineers (Pvt) Ltd.

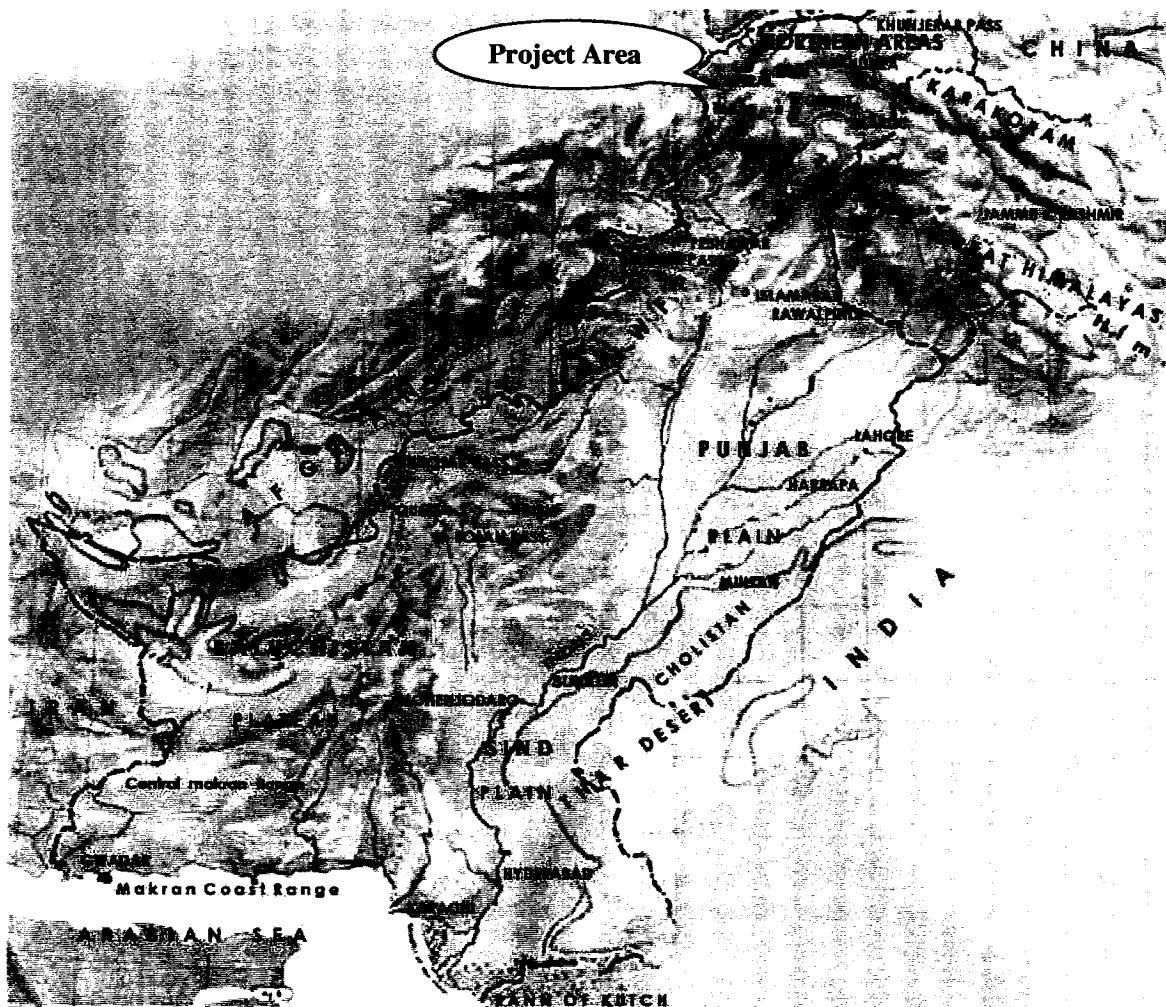
### 1.3 PROJECT LOCATION AND ACCESSIBILITY

Chitral District is located at latitude 35.12°-36.50° N and longitudes 71.20°-73.55°E, 365 kilometres km to Peshawar and 550 km to the north of Islamabad.

Chitral is an administrative district in the extreme north of Khyber Pakhtunkhwa Province of Pakistan. It has common borders with the districts of Dir and Swat in the south, Ghizer in the North-East and Afghan provinces of Badakhshan and Nuristan, in the North and North-West. It is separated from Tajakistan by the narrow Wakhan Corridor. Border villages/valleys of Chitral like Arandu, Kalash valleys, Garamchashma areas starting from Arandu up to Boroghil, are connected with Afghanistan through porous borders and mountain passes.

Total area of Chitral is 14850 Sq K.M, of which 4% has forest cover, 2% cultivable waste and about 3% cultivated area. Remaining area of the district consists of mountains, barren lands with sparse vegetation, especially in case of upper Chitral. Although mountains of upper Chitral are bare, and do not contribute any type of support in provision of fuel to local community.

Figure 1-1: PROJECT AREA



Project is located at 35° - 55' to 35° - 56' N latitude and 72° 01' to 72° 02' E longitudes near Birmogh Village located 34km from Chitral City. The access to the site is through 20km road from Chitral (Chew Bridge) up to Khogazi Police station leading towards the project location. From Khogazi police station, it continues 3km to Golen Gol Power House Site location and then further a jeepable track of about 11 Km with a couple of sharp curves leads to the Birmogh Village. In this section of the route some important improvements of road and structures are required as described below:

- Whole jeepable track needs to be improved for transport of materials and equipment for construction of Birmogh Golen HPP
- Wooden Culvert before Roahilli Gol needs to be replaced with RCC Culvert
- RCC Culvert in the start of Jeepable track near Uzghor village also needs improvement.
- Road realignment along power channel route will be required near intake area.

**Figure 1-2: PROJECT LOCATION WITHIN KHYBER PAKHTUNKHWA**

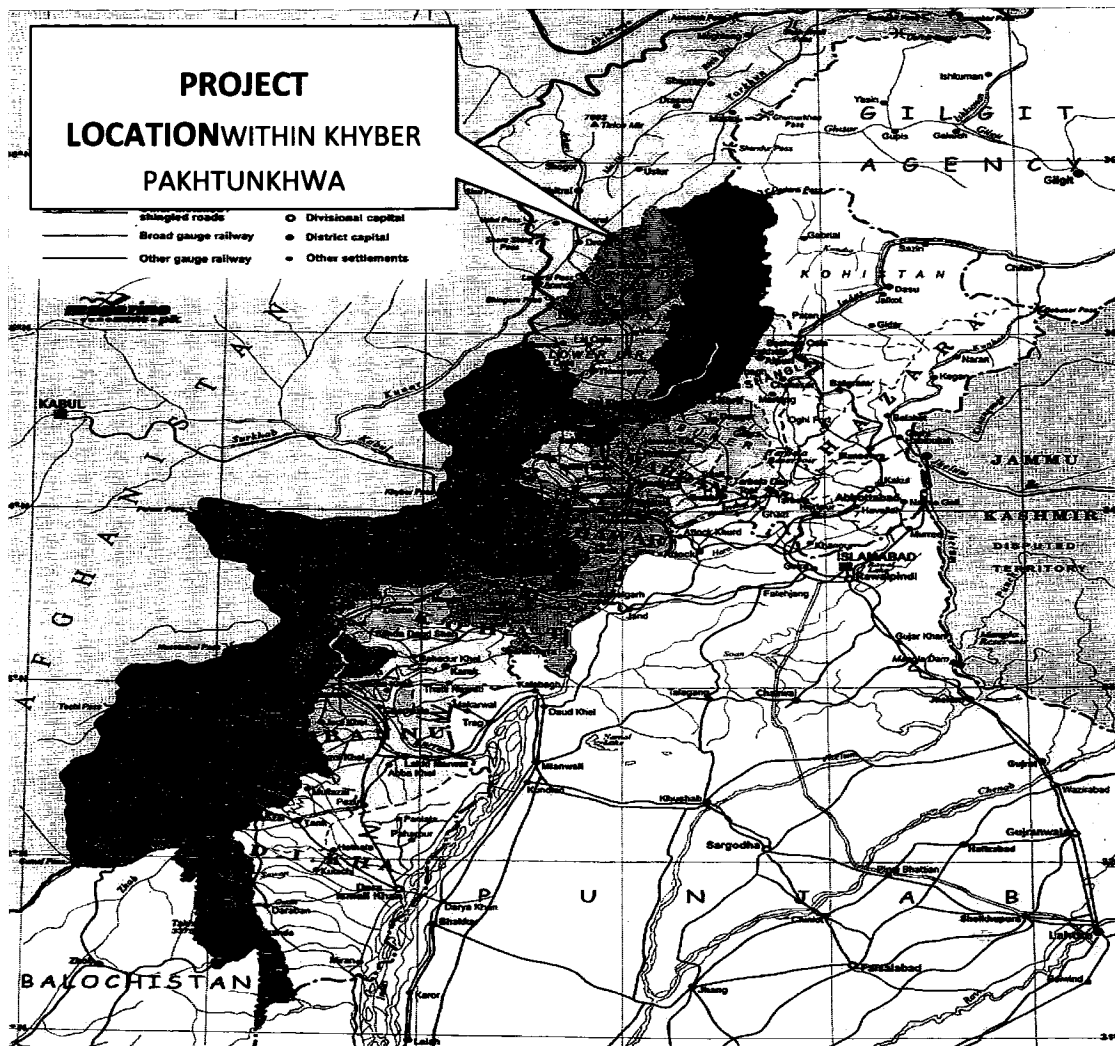
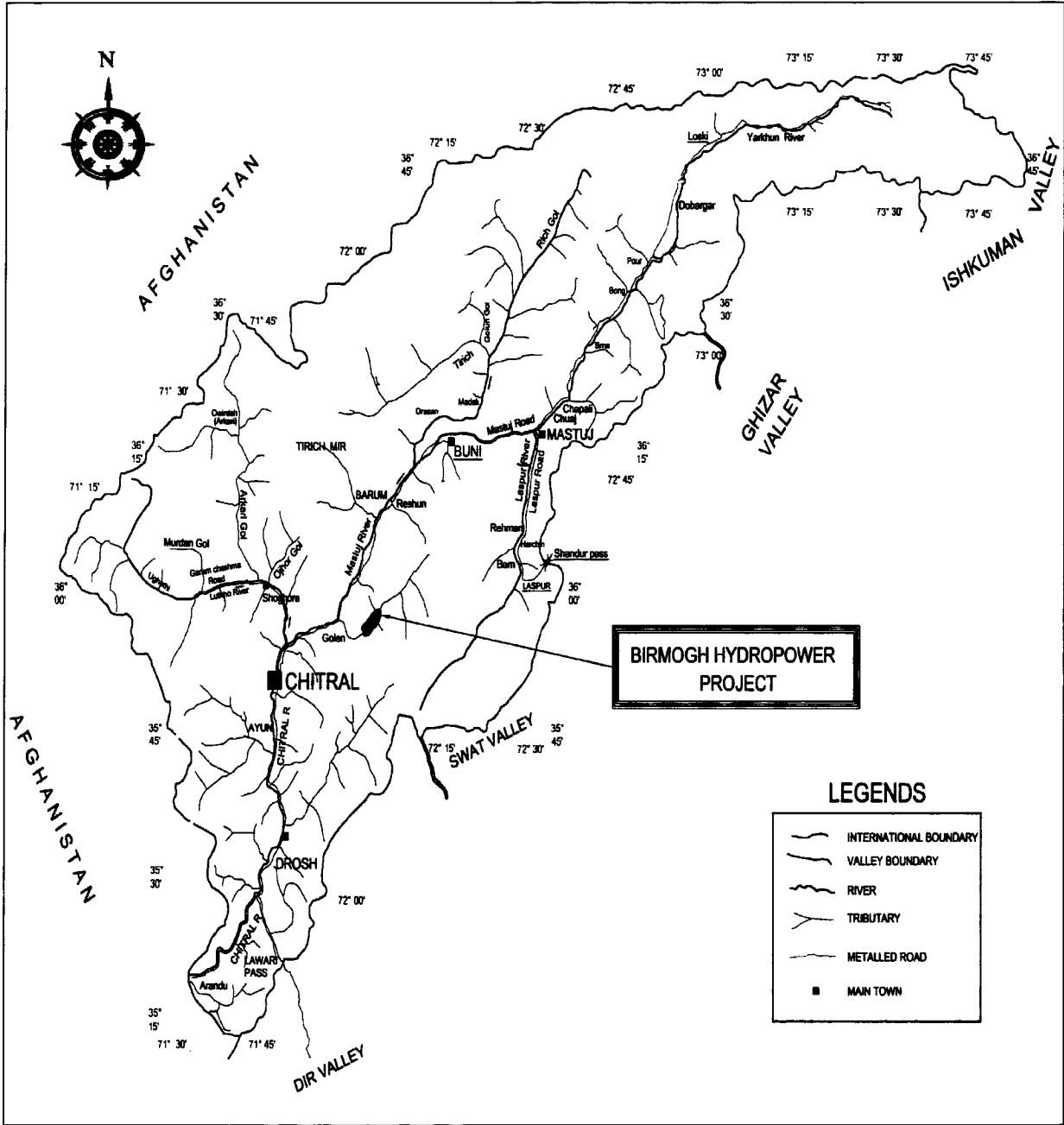


Figure 1-3: PROJECT LOCATION WITHIN DISTRICT CHITRAL



## 1.4 SALIENT FEATURES OF THE PROJECT

	Location	Birmogh Village Distt. Chitral, KP, Pakistan
	UTM coordinates of intake	43 S, Easting = 233329.94 m Northing = 3980795.27m
	Hydropower type	Run of the River
	River Name	Golen Gol
	Purpose of the Project	Supply of electricity to Chitral Town
	Catchment area	405.5 km <sup>2</sup>
	Design discharge for power	4.00 m <sup>3</sup> /sec
	Selected Design flood for intake	100 year frequency
	Flood discharge 100year	814.44m <sup>3</sup> /sec
	Flood discharge 1000 year	1077 m <sup>3</sup> /sec
	Crest of overflow section	2562.0 masl
	Dimension of Inundation Intake	H=1.2m, B=8 m
	Design Flood	100 year frequency
	Flood discharge	814.44 m <sup>3</sup> /sec
	Size of intake gate	Lift gate (1.2 x4m) 2 Nos.
	Design Capacity	4.0 m <sup>3</sup> /sec for power house with 10% overload, 20% of design discharge for flushing through the desilting chamber & 0.7 m <sup>3</sup> /sec for Irrigation purposes.
	Dimensions	3.0 x 0.9 m waterway
	Freeboard	0.3m
	Total length	677 m, including 3 Nos. Aqueduct
	Average flow Velocity	1.90 m/sec

	Invert level at start	2561.5masl
	Water level at start of channel	2562.4masl
	Bed width	3.0m
	Bed slope	1 in 400 m
	Aqueduct No. 01	Span Length 10 m , Location RD 505 To 515
	Aqueduct No. 02	Span Length 25 m , Location RD 550 To 575
	Aqueduct No. 03	Span Length 10 m , Location RD 610 To 620
	Dimensions of duct	3.0x 1.2m (BxD)
	Free board	0.3 m
	Bed slope	1 in 400 m
	Total Length	29 m
	Length of Desilting Chamber	15 m
	Length of Surge/Forebay Chamber	9 m
	Length of Skimming Platform	5 m
	Bed Width of Desilting & Surge Chamber	5 m
	Bed Level at Start	2559.80masl
	Water level at start of Chamber	2561.00masl
	Total length of Penstock	256.61 m
	Diameter of penstock	1.2 m
	Thickness of steel penstock	12 mm
	Average velocity in penstock	3.5 m/sec
	Gross head at penstock	62 m
	Head losses in Penstock	2.31m
	Invert level of penstock at powerhouse	2494 masl
	Bifurcation length	Two pipes 24.55m each
	Diameter of Bifurcation	0.76 m

	Powerhouse	Surface powerhouse
	Size of Powerhouse	32 x 11.9 m
	Turbine	Horizontal Francis
	Number of Units	Two
	Rated Discharge per unit	2.0 m <sup>3</sup> /sec
	Generator Capacity	1.18 MVA
	Gross Head	62m
	Net Head	58 m
	Total head losses	4 m
	Installed capacity	2MW
	Average annual energy	16.019GWh
	Plant Factor	93.88 %

## 1.5 OUTLINE DESIGN REPORT

This Outline Design Report is presented in light of the consultancy scope of work as given in the terms of reference. Report highlights the basic studies and parameters of the project components.

This report mainly covers the hydrological aspects, hydraulic design criteria and description for the civil components including inundation intake, power channel, aqueduct, desilting & surge/forebay chamber, penstock and powerhouse. The electromechanical components are also presented in the separate section.

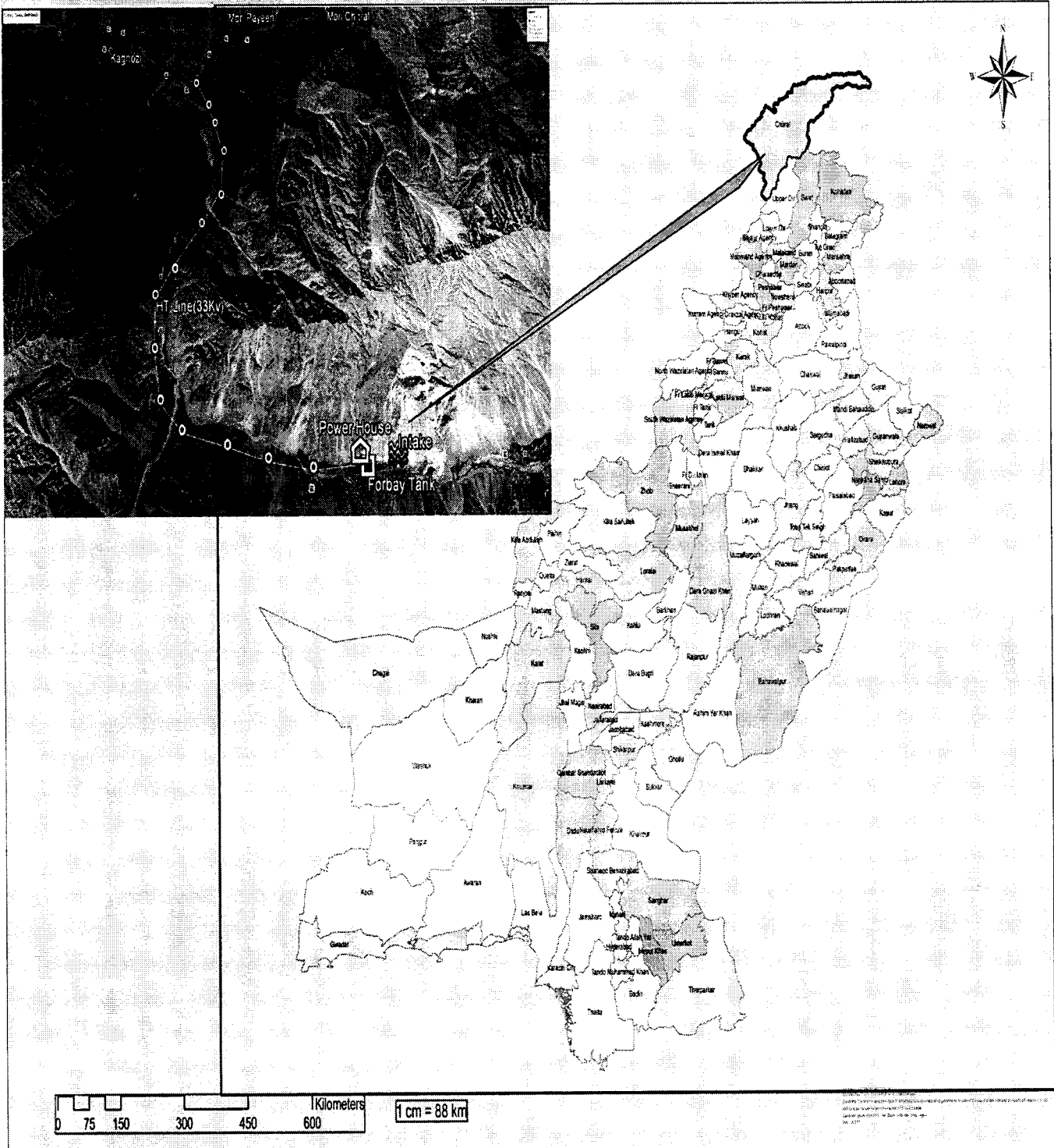


**Salient Features:**

- Company : Sarhad Rural Support Programme
- Main Sponsors : SRSP
- Technical Partners (Civil & EME) : Fuchun Industry Development Co, Ltd.  
Shenzhen, Designmen Consultant Pvt Ltd & Mukhtiar Engineering work.
- Capacity : 2 MW
- Location : Village Birmogh District Chitral, KP
- Source : Hydle Energy
- Technology : Combined Cycle
- Plant Configuration : 2 x 1 MW
- Power Purchaser : WAPDA/PESCO
- Transmission/Distribution Interconnection: 330 kV
- Land : Local Community Donated
- Nearest Grid : Jutilasht Grid of PESCO for Chitral Town Grid
- Date of Initiation : 5<sup>th</sup> March 2015
- Date of COD : Jan 2017
- Total EPC cost : Rs. 342.11 Million

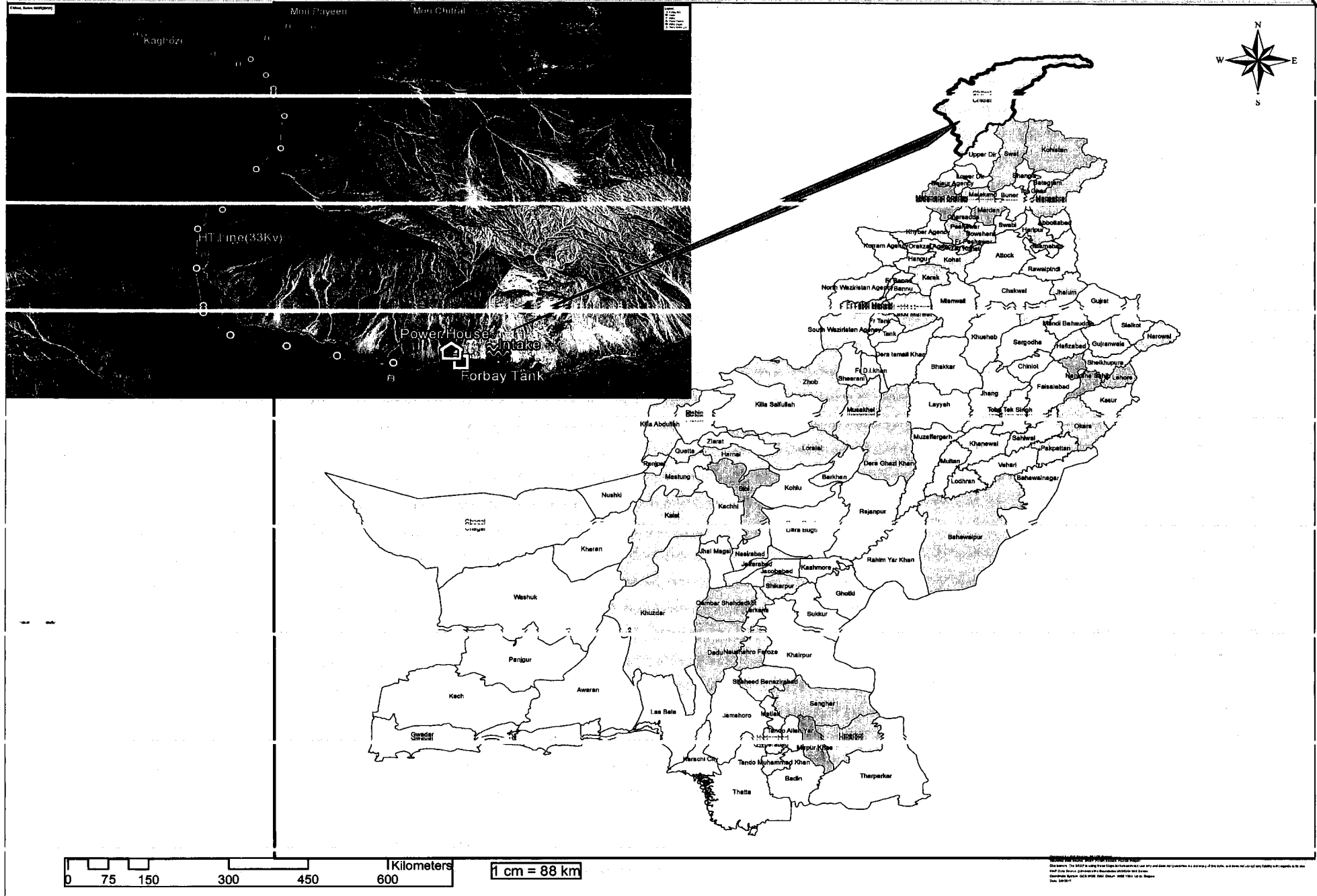


# Chitral, Golen MHP (2 MW)



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# Chitral, Golen MHP (2 MW)



## 1) Location (maps, site map), land



## 2) Plant: run of the river, storage, weir

The 2MW Birmogh Golain Hydro Power Project has been designed on run of the river with proper design of intake system to divert the required volume of water discharge.

## 3) Head: minimum, maximum

The 2MW Birmogh Golain Hydro Power Project has been designed with Gross head of 62 meters and Net head 57 meters.

## 4) Turbine Technology:

The Installed Turbine type Francis Turbine horizontal type with two units, each unit capacity is 1MW with gross total capacity of 2MW for 2 units. This is combine cycle technology with 750 Rpm speed controlled by PLC base hydraulic governors and operated by SCADA system.

## 5) Tunnel (if proposed): length, diameter

No tunnel has been constructed for this hydro power as the water diverted from river through open head race Canal which length is 615 meter and size is 3m width and 1.2m depth.

## 6) Resettlement issues

No Resettlement issue faced as the project implemented in a remote valley of chitral where no commercial or domestic infrastructure affected. The land for the development of the Project has

been obtained on a long term lease by the Sarhad Rural Support Programme (SRSP), which comprises of lease amount together with commitment of the Sarhad Rural Support Programme (SRSP) to utilize local human resource and development programmes in the territories close to the Project site.

The total area comprising of the Complex, the power house, administrative and residential facility utilized for the Project roughly comprises of three (3) acres and without any resettlement costs or construction of tunnel etc. The Sarhad Rural Support Programme (SRSP) has already established a 50Kw small hydro power for the said village which is operational since Jan 2017.

## **7) Consents**

In the Province of Khyber Pukhtunkhwa, Peshawar Electric Supply Company (PESCO) has the exclusive license (Distribution License No. 07/DL/2002 dated 30.04.2002) to engage in distribution service and to make sales of electric power to consumers in its Service Territory and its Concession Territory (as prescribed by its aforementioned Distribution License) subject to and in accordance with the terms and conditions of its Distribution License. By way of this exclusivity solely exercised in Khyber Pukhtunkhwa, PESCO is the only body to evacuate power from SRSP's Project.

PESCO vide letter **No. 1670/Hydel/Birmogh Golain** dated 19.02.2017 has issued its No Objection Certificate (NOC) for power evacuation from SRSP's 2 MW Hydropower Project. However, the aforesaid NOC is conditional upon; inter alia, Generation License from NEPRA, signing of Power Purchase Agreement (PPA) with Central Power Purchasing Agency Guarantee Limited (CPPA-G).

## **8) Infrastructure development**

A proper designed structures have been constructed according to engineering principles, detail of structures attached with GL application Petition.

## **9) Interconnection with national grid company, length of transmission line(s)**

Interconnection will be made through 33kV with National grid at Jutilasht Grid of PESCO for Chitral Town. The SRSP has established a distribution line of 33 kV stretched over an area of 7 KM which links the SRSP with the nearest distribution line owned and operated by Pukhtunkhwa Energy Development organization (PEDO), and which is further connected with the PESCO substation located at a distance of 33 KM at Jutilasht.

## **10) Project cost, information regarding sources and amounts of equity and debt**

Total Project at stage of COD is Rs.325.06 million with Rs.97.52 million of Equity and Rs.227.54 as Debt.

## **11) Project schedule, expected life**

The construction of the Project was commenced on December 2014. The procurement process for the purchase of equipment and construction related works was initiated through transparent bidding. Tenders were floated and advertised in leading national dailies and after careful evaluation, the most competitive bidder was selected on the basis of suitability and technical experience.



The Project implementation schedule highlighting the key milestones from the inception till the Commercial Operations Date (COD). The construction period comprises of twenty-six (26) months, which the learned Authority would appreciate is a reasonably quick time considering the nature of the Project. The expected life of the aforementioned project is considered 25 years base on designs & specifications.

The details of procurement process, copies of advertisement, the tender documents, the bid evaluation report and the executed contracts are a part of GL Petition and annexed with it.

## 12) Peaking/base load operation

After conducting and analysing the Load Flow Analysis no incremental pre-contingent system overloads or voltage violations resulting from interconnection of 2 MW Birmogh Golen Hydro Power Plant were found within the local study area or across bulk 33 kV transmission systems in either of the simulated alternatives. This finding was also validated through associated pre-contingent steady state system and post-contingency steady state system, overload and voltage violation screening outputs generated for the system model. Thus, it can be concluded that the power flow on all the circuits in all the cases with and without connecting 2 MW Birmogh Golen Hydro Power Plant are within defined limits and the voltages and loadings are in acceptable range of defined study criteria. All the proposed and simulated alternatives meet the technical requirements specified under the NEPRA/NTDC grid code and other planning criteria. Based on load flow study results, it is concluded that the proposed interconnection of the 2 MW Birmogh Golen Hydro Power Plant with PESCO grid network meets all applicable grid code and planning criteria and has no adverse effect on the national grid.

## 13) Plant characteristics: generation voltage, power factor, frequency, automatic generation control, ramping rate, control metering and instrumentation

Plant Characteristics	
Type	Francis Turbine – Horizontal type
No. of units	2 Units
Generation Voltage	3.3 Kv
Power Factor	0.80
System frequency	50 Hz
Automatic generation control	AVR DT-1/200 (SHANGHAI SHANGJI TEC CO China)
Ramping rate	1MW/Min
Control metering and instrumentation	Relays (DTSD341, DY-32 Etc.)
Capacity of plant	1MW x 2= 2MW

## 14) System studies load flow, short circuit, stability

The local grid network of PESCO and the national grid at large was analysed for load flow and short circuit/fault stability after interconnection with the 2 MW Birmogh Golen Hydro Power Plant to examine and confirm compliance with the NEPRA/NTDC Grid Code requirements.

## 15) Training and development

The Birmogh Golain 2MW HPP is operational since April 2017, before the operationalization the staff were oriented and trained by technical team of 18MW PEHUR Hydro Power complex located at Gadoon Amzai of district Swabi, KP. Beside the above mentioned trainings the Manufacturer Company JV Fuchun Industry Development Co, Ltd. Shenzhen China & Mukhtiar Engineering work

have also carried out operational training for operators and plant technicians. The SRSP is still in development phase and arranging advance levels of technology trainings for the 2MW Birmogh Golain project.

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2017

# Grid Interconnection Study Of The 100 MW Birmogh Golen Hydro Power Project

Conducted For

Sarhad Rural Support Program

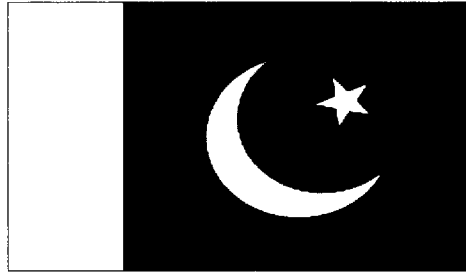
(The Client)

By

Welt Konnect (Pvt) Ltd

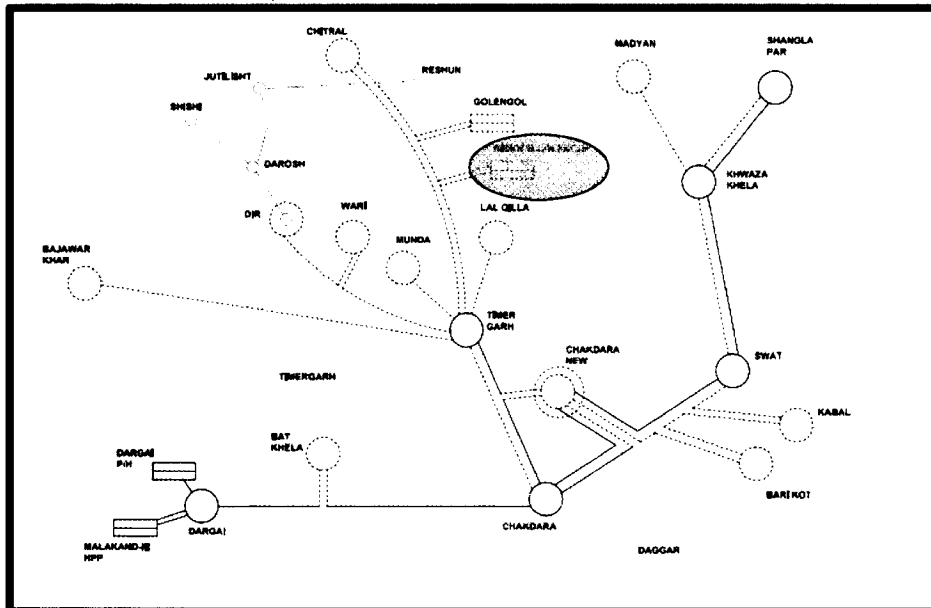
(Project Consultant)

06/01/2017



# Grid Interconnection Study Of The 2 MW Birmogh Golen Hydro Power Project

February, 2017



BY

WELT KONNECT PVT LTD

A SUBSIDIARY OF THE TRANSTECH GROUP

FOR

SARHAD RURAL SUPPORT PORGRAM



## APPROVAL SHEET

**TITLE** : Grid Interconnection Studies for Evacuation of Power from 2 MW Birmogh Golen Hydro Power Project to National Grid.

**DOCUMENT NUMBER** : 508-0786-01

**CLASSIFICATION** : Un-Classified

### SYNOPSIS

This document is a Grid interconnection Study (GIS) Report for the 2 MW Birmogh Golen Hydro Power Project being developed by Sarhad Rural support Program. Please find below an overview of the report followed by a chapter wise synopsis:

**GIS-Report** This GIS report contains numerical analysis, data visualizations and simulations based on complex algorithms in various modules of PSSE V.34, for the proposed/engineered interconnection scheme, depicting (i) the load flow analysis (ii) contingency analysis (iii) fault (short-circuit) analysis of the 2 MW Birmogh Golen Hydro Power Project for the given network of Peshawar Electric Supply Company (PESCO) in tandem with the National Grid of Pakistan at large.

**Chapter 1** **Introduction:** provides the background, objectives and planning criteria of the Grid interconnection Study for the Birmogh Golen Hydro Power Project.

**Chapter 2** **Assumptions and Technical Data:** describes the data assumptions employed in conducting the Grid Interconnection study, general information about the equipment used in the subject power plant and the network data.

**Chapter 3** **Study Approach and Methodology:** this chapter provides an understanding of the problem at hand, the various scenarios under consideration and further explains the approach/methodology used for performing the Grid interconnection study in compliance with the NEPRA grid code criteria which has been satisfied for the subject power plant in the subsequent chapters of this GIS.

**Chapter 4** **Development of Scheme of Interconnection:** this section begins by presenting the existing network, further stipulating and focusing on the proposed interconnection scheme of the subject power project allowing for evacuation of power from the 2 MW Birmogh Golen Hydro power project to the national



grid, wherein the most efficient and viable scenario is proposed in subsequent sections after taking into consideration the various analysis conducted herein, limits and constraints of the transmission lines and the other technical equipment.

- Chapter 5: Load Flow Studies:** this section provides a detailed analysis of the proposed interconnection scheme using the latest power system simulation tools of PSSE V.34 to project and check the load flow of the subject power system in a single line diagram, whereas the results/sketches of the simulation analysis are provided in Appendix-3.
- Chapter 6: Short Circuit Studies:** this section provides information regarding the short circuit/fault analysis of the subject power system under operational conditions on the national grid of Pakistan for the given evacuation scheme, while the simulation results of the fault analysis are attached as Appendix-4.
- Chapter 7: Conclusion:** In this study, a stable and reliable interconnection of the 2 MW Birmogh Golen Hydro Power Plant is considered for the 33 KV PESCO transmission network circuits in compliance with the planning criteria of the applicable NEPRA Grid Code, which shows that the power flow under the prescribed interconnection scheme is feasible with short circuit ratings within limits, having no adverse effect on the local network or National Grid.

**DATE:** 17<sup>th</sup> February 2017

## Grid Interconnection Study of 2 MW Birmogh Golen Hydro Power Project

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Mr. Yousuf Khan

REVIEWED BY: Mr. Habil Ahmed Khan

APPROVED BY: Mr. Fiaz Ahmad

## Revisions

				SECTION	DESCRIPTION OF CHANGE

## **DISTRIBUTION**

1. Central Power Purchase Authority (CPPA-G)
2. National Transmission Dispatch Company (NTDC)
3. Sarhad Rural Support Program (SRSP)
4. Weltkonnect (Pvt) Ltd

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Golen HPP

**Table 6.5.1** : Minimum Short Circuit Levels With Birmogh Golen

HPP



## LIST OF ABBREVIATIONS

<b>AC</b>	Alternate Current
<b>AEDB</b>	Alternative Energy Development Board
<b>Approx.</b>	Approximately
<b>BOR</b>	Board of Revenue
<b>CCGT</b>	Combined Cycle Gas Turbine
<b>CDM</b>	Clean Development Mechanism
<b>CERs</b>	Certified Emission Reductions
<b>CNG</b>	Compressed natural Gas
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>COD</b>	Commercial Operational Date
<b>CoP</b>	Conference of the Parties
<b>CPPA</b>	Central Power Purchasing Agency
<b>CPV</b>	Concentrator photovoltaic
<b>DAE GOS</b>	Directorate of Alternate Energy, Government of Sindh
<b>DC</b>	Direct Current
<b>deg</b>	Degree
<b>DG</b>	Diesel Generator

<b>DISCOs</b>	Distribution Companies
<b>EE</b>	Energy Efficiency
<b>EF<sub>y</sub></b>	Baseline Emission Factor
<b>EIA</b>	Environmental Impact Analysis
<b>EMC</b>	Electromagnetic Compatibility
<b>EMP</b>	Environment Plan
<b>EPA</b>	Energy Purchase Agreement
<b>EPC</b>	Engineering Procurement Construction
<b>FESCO</b>	Faisalabad Electric Supply Company
<b>FSR</b>	Feasibility Study Report
<b>GDP</b>	Gross Domestic Product
<b>GIS</b>	Grid Interconnection Study
<b>GEPCO</b>	Gujranwala Electric Power Company
<b>GENCOs</b>	Generation Companies
<b>GHG</b>	Green Gas
<b>GS</b>	Grid Station
<b>GoP</b>	Government of Pakistan
<b>GPS</b>	Global Positioning System



<b>GSM</b>	Global System for Mobile Communications
<b>HCA</b>	Host Country Approval
<b>HESCO</b>	Hyderabad Electric Supply Corporation
<b>HFCs</b>	Hydro Fluorocarbons
<b>HOMER</b>	Hybrid Optimization Model for Electric Renewables
<b>HSE</b>	Health Safety and Environment
<b>Hz</b>	Hertz
<b>IA</b>	Implementation Agreement
<b>IDC</b>	Interest During Construction
<b>IEE</b>	Initial Environmental Examination
<b>IESCO</b>	Islamabad Electric Supply Company
<b>IEEE</b>	Institute of Electrical and Electronic Engineers
<b>IFC</b>	International Finance Cooperation
<b>IPPs</b>	Independent Power Producers
<b>IRR</b>	Internal Rate of Return
<b>JEDI</b>	Jobs and Economic Development Impact
<b>JI</b>	Joint Implementation
<b>JRC</b>	European Joint Research Centre

<b>Km</b>	Kilometer
<b>KV</b>	Kilovolt
<b>KW</b>	Kilowatt
<b>LESCO</b>	Lahore Electric Supply Company
<b>LNG</b>	Liquefied Natural Gas
<b>LOI</b>	Letter of Intent
<b>LOS</b>	Letter of Support
<b>LPG</b>	Liquefied Petroleum Gas
<b>LUC</b>	Local Control Unit
<b>m<sup>2</sup></b>	Meter Square
<b>m<sup>3</sup>/h</b>	Meter cube per hour
<b>mm</b>	Millimeters
<b>MEPCO</b>	Multan Electric Power Company
<b>mmcft</b>	Million Cubic Feet
<b>MoU</b>	Memorandum of Understanding
<b>MTDF</b>	Medium Term Development Framework
<b>MVA</b>	Million Volt-Ampere
<b>MW</b>	Megawatt

<b>NAPWD</b>	Northern Area Public Works Department
<b>NCS</b>	National Conservation Strategy
<b>NEC</b>	National Energy Conservation
<b>NEPRA</b>	National Electricity Power Regulatory Authority
<b>NEQs</b>	National Environmental Quality Standards
<b>NGOs</b>	Non-Government Organizations
<b>NOCs</b>	No Objection Certificate
<b>NOCT</b>	Nominal Operating Cell Temperature
<b>NREL</b>	National Renewable Energy Laboratories
<b>NTDC</b>	National Transmission and Dispatch Company
<b>O &amp; M</b>	Operation & Management
<b>OECD</b>	Organization for Economic Cooperation and Development
<b>OEMs</b>	Original Equipment Manufacturer
<b>OHL</b>	Overhead Lines
<b>OLTC</b>	On-Load Tap Changer
<b>OM</b>	Operating Margin
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PCRET</b>	Pakistan Council of Renewable Energy and technology

PDD	Project Design Document
PEPA	Pakistan Environment Protection Act
PESCO	Peshawar Electric Supply Company
PINs	Project Idea Note
PLC	Programmable Logic Control
PMD	Pakistan Meteorological Department
POE	Panel of Experts
PPDB	Punjab Power Development Board
PPIB	Private Power Infrastructure Board
QESCO	Quetta Electric Supply Company
QC	Quality Control
R & D	Research and Development
RE	Renewable Energy
RFP	Request for Proposal
RFQ	Request for Quotation
RMP	Risk Management of Project
ROC	Return on Capital
ROE	Return on Equity

<b>RQD</b>	Rock Quality Designation
<b>SEPCO</b>	Sukkar Electric Supply Company
<b>SOP</b>	Standard Operating Procedure
<b>SRSP</b>	Sarhad Rural Support Program
<b>TESCO</b>	Tribal Electric Supply Company
<b>TOE</b>	Tons Oil Equivalent
<b>tsf</b>	Tones/square foot
<b>TTG</b>	Trans Tech Group
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>UPS</b>	Uninterruptible Power Supply
<b>WAPDA</b>	Water & Power Development Authority
<b>WKPL</b>	Welt Konnect (Pvt) Ltd
<b>WMO</b>	World Metrological Organization

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## DISCLAIMERS

This document is intended for use by the Sarhad Rural Support Program for understanding and effective decision making regarding 2 MW Birmogh Golen Hydro Power Project located in Birmogh village, on left bank of Golen Gol River in Chitral District of Khyber Puhtunkhuwa (KP), Pakistan.

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### DOCUMENT INFORMATION

The purpose of this report is to conduct analysis of the proposed interconnection scheme of the 2 MW Birmogh Golen Hydro Power Project being developed by Sarhad Rural Support Program in Birmogh village, Chitral and provide information relevant for the concerned Government Entities to make an informed decision regarding the Power Project.

### STRUCTURE OF THE DOCUMENT

The **Grid Interconnection Study Report** has been divided into the following chapters/sections:

- ❖ **Chapter 1:** Introduction
- ❖ **Chapter 2:** Assumptions and Technical Data
- ❖ **Chapter 3:** Study Approach and Methodology
- ❖ **Chapter 4:** Development of Scheme of Interconnection
- ❖ **Chapter 5:** Load flow Studies
- ❖ **Chapter 6:** Short circuit Studies
- ❖ **Chapter 7:** Conclusion

Each Section is further sub-divided into sub-sections for ease of reviewing and understanding.



### EXECUTIVE SUMMARY OF THE PROJECT

The 2 MW Birmogh Golen Hydro Power Plant is situated in Birmogh village, on left bank of Golen Gol River in Chitral District of Khyber Puhtunkhuwa (KP).

The Grid Interconnection Study (GIS) takes into consideration the requirements of, simulates and analyzes the interconnection of the 2 MW Birmogh Golen Hydro Power Plant with the local PESCO network and the national grid at large.

The Commercial Operational Date (COD) of the subject power project is in 2017, whereby the interconnection analysis has been conducted for 2017 and 2018 and the results are documented.

The base cases prepared and provided by the Peshawar Electric Supply Company (PESCO) was updated to account for the addition of the Birmogh Golen HPP and other upcoming IPPs in the region, following which it was used for conducting simulation analysis of the subject GIS.

A number of interconnection schemes for interfacing the 2 MW Birmogh Golen Hydro Power Plant to the PESCO grid were reviewed and evaluated during the course of the GIS, following which the most efficient, technical viable solution was modelled and simulated for detailed scrutiny while ensuring compliance with the NEPRA grid code planning criteria.

The preferred interconnection scheme envisages connection of subject hydro power Project in proposed string, with the selected string evacuating power to the national grid through the 33 KV Jutilisht Grid Station (GS).

The modelling and simulation of the subject Power Project was conducted keeping in view all technical requirements, grid complexities and requirements of the NEPRA grid code planning criteria. The interconnection scheme was found to be stable, reliable and feasible complying with all applicable standards. The proposed interconnection scheme of the Project is shown in Appendix-1, whereas the geographical location of the Project is shown in Appendix-2.

Furthermore the local grid network of PESCO and the national grid at large was analyzed for load flow and short circuit/fault stability after interconnection with the 2 MW Birmogh Golen Hydro Power Plant to examine and confirm compliance with the NEPRA/NTDC Grid Code requirements.

The steady state of the 2 MW Birmogh Golen Hydro Power Plant was scrutinized and processed to build the steady state and short circuit models in the formats provided

in PSSE V.34. Whereas the latest network base cases were used to show NTDC and PESCO networks for 2017 and 2018.

The load flow analysis performed for the year 2017 and 2018 after addition of the subject power project shows that the line loadings and bus voltages in all the cases remain within acceptable limits of the Grid Code. The results were further examined against standards of line loading and bus voltage limits in associated N-1 post-contingency conditions and proved compliant.

In order to simulate and observe the short circuit current contributions by the subject project to the 33KV local network of PESCO, the maximum short circuit levels of all the buses of the plant were computed, along with the maximum short circuit levels at the substations located in vicinity of the project. Whereby the results revealed that the fault levels are within the stipulated circuit breaker duties.

Keeping in view the results of the above GIS analysis it is hereby concluded that the proposed interconnection of the 2 MW Birmogh Golen Hydro Power Plant with PESCO/NTDC networks has no adverse effect on the national grid which remains stable and robust, in compliance with the applicable Grid Code and Planning Criteria.

## 1 INTRODUCTION

### 1.1 Background

Hydropower development is among the prime factors for improving the socio-economic conditions of the people of Pakistan. This homeland is blessed with abundance of natural available water resources upon which the development of this sector depends. Sarhad Rural Support Program (SRSP) is non-profit/non-government organization of Khyber Pakhtunkhwa (KP). SRSP is making every endeavour to explore and harness the available water resources to achieve the goal of socio-economic development. SRSP, looking for further strengthening, intends for the improvement of the existing power generation & Distribution network.

Chitral's location is very ideal for hydro power generation and to take full advantage of this potential. District Chitral is rich in Hydel power potential due to large numbers of waterfalls as well as availability of ample water resources for electricity generation in the district, but government had not taken any step to tap this potential of Chitral.

Proposed Birmogh Golen Hydropower Project is a 2 MW project located in Birmogh Village, on left bank of Golen Gol River in Chitral District of Khyber Pakhtunkhwa (KP) that is being developed in private sector under the management of Sarhad Rural Support Programme (SRSP). The project is located some 34 km North-east of the city of Chitral.

### 1.2 Objectives

The primary purpose of this GIS is to investigate the given network scenario and propose/engineer an interconnection scheme for the 2MW Birmogh Golen HPP whereby the generated power is transmitted in such a way so as to ensure stability and reliability of the national grid, while complying with the N-1 Contingency requirements and other applicable planning criteria of the Grid Code.

Whereas specific tasks undertaken in this GIS are stipulated below:

- ❖ Create a scheme for the interconnection at 33 KV, keeping in mind the availability of space at terminal substations and right of way (ROW).
- ❖ To conduct and scrutinize the load flow analysis of the proposed interconnection scheme under steady state, normal and N-1 contingency conditions of the system so as to ensure an efficient power evacuation scheme.

- ❖ To simulate the fault current from the Birmogh Golen HPP to see its effect on the proposed Birmogh Golen HPP sub-station and determine whether it remains within the short circuit ratings of the specified equipment.
- ❖ Furthermore to model the impact of the fault current on the increase of short circuit current in the adjoining and adjacent 132KV and 33KV substations/networks and determine whether they remain within their equipment ratings.

## 1.3 Planning Criteria

The interconnection studies have been carried out keeping in view of the following system operating criteria/limits in accordance with NEPRA Grid Code:

<b>Voltage Limits</b>	±5% under normal and ±10% under contingency conditions. However, voltages at some generation buses and some substations may be kept up to +8% under normal operating conditions as per network configuration and/or system requirements.
<b>Transmission Line Loading Limits</b>	80% under normal and 100% under N-1 contingency conditions.
<b>Transformer Loading Limits</b>	80% under normal and 110% under N-1 contingency conditions.
<b>Frequency Limits</b>	50 Hz ± 1% variation under normal condition and 2.2 – 50.5 Hz under N-1 condition.
<b>Power Factor</b>	0.85 Lagging; 0.9 Leading

## 2 ASSUMPTIONS AND TECHNICAL DATA

The detailed assumptions, generator data and the network data of the subject power project considered in this GIS are provided below:

### 2.1. General Assumptions

Following are some of the important assumptions that were used for this study:

- The generation plan used for the subject study is up-to-date, as it has an important role in planning of power system.
- The transmission expansion plans of NTDC and PESCO are the optimal ones as per load demand and generation requirements.
- The transmission plans of NTDC and PESCO would optimistically be implemented as per their expected CODs, especially around the subject study region.
- Load demand forecast is most recent and revised.
- The existing and already proposed shunt compensation capacitors of PESCO are considered.
- Applicable seasonal conditions and appropriate study year for the subject System study are taken, which is peak load scenario 2017 and 2018.

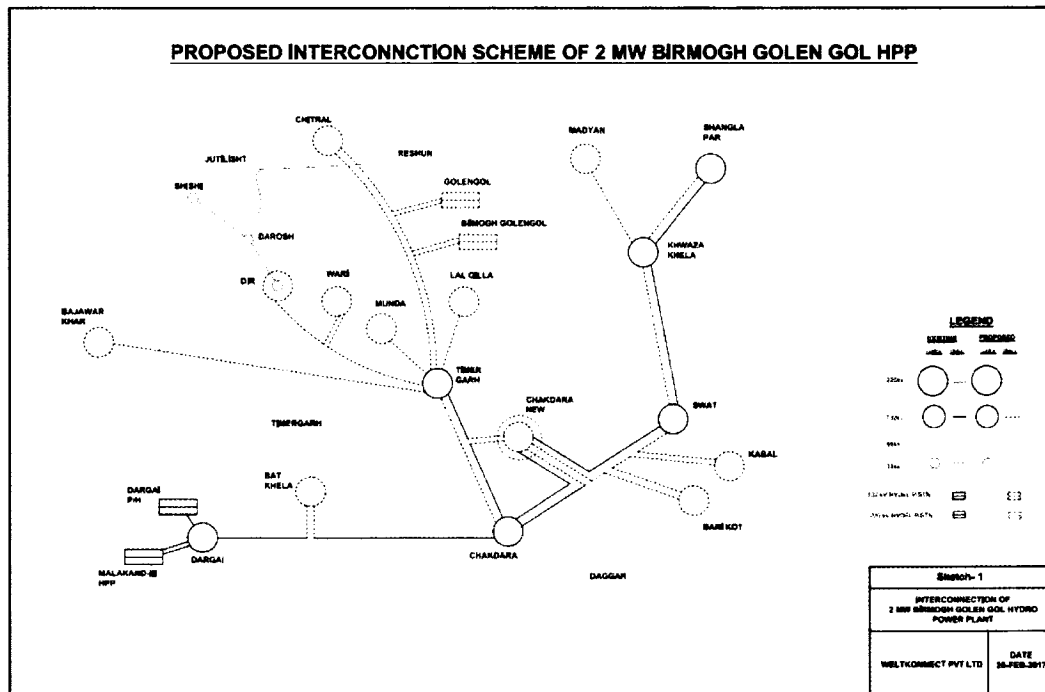
### 2.2. Generator Data

- Number of Generating Units=2
- Gross output power of each unit=1.25 MVA
- Net maximum generation capacity=2 MW
- Power factor=0.85 lagging, 0.9 leading
- Generating Voltage=3.3 KV
- GSU transformer=2x 2 MVA

### 2.3. Network Data

The existing 33 KV network in the vicinity of the Birmogh Golen HPP wherein it's interconnection to the national grid of Pakistan has been engineered is provided in Appendix-1.

GS and other 220 KV Grid station in the vicinity of Islamabad area. Such a system assists in stable operation of power plant.



**Figure 4.1.1 Power Evacuation Scheme**

#### 4.2. The Evacuation/Interconnection Scheme Of Birmogh Golen-HPP

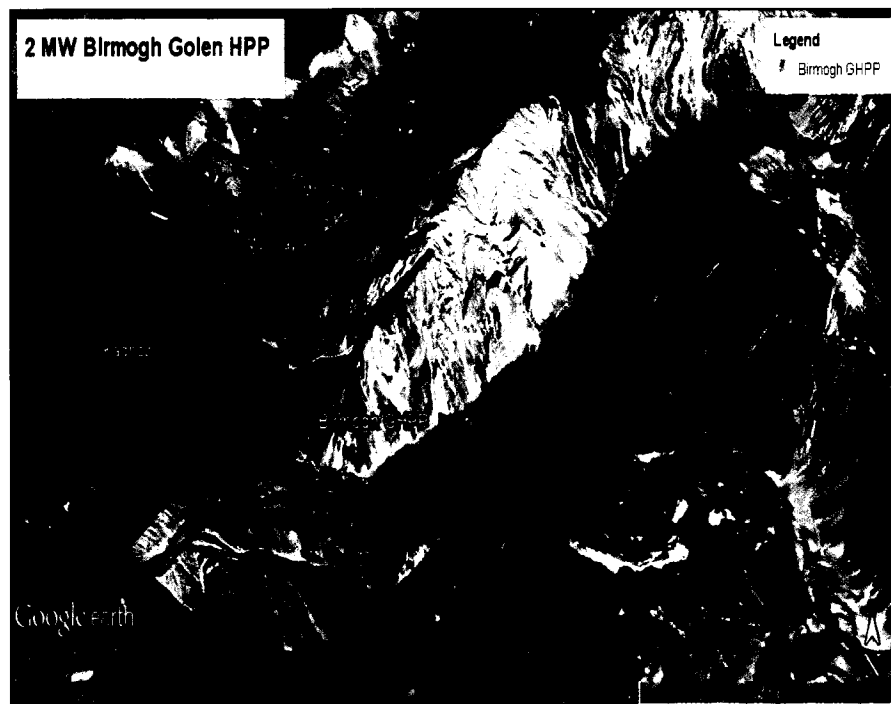
The proposed interconnection scheme for the subject power plant is given as under:

The 33 KV single circuit from Birmogh Golen HPP to jutlisht grid station is connected by the Dog conductor.

The following equipment shall be required for the proposed evacuation solution 33 kV GS of Birmogh Golen:

- One 33KV line bay for connecting circuit of 33KV Jutlisht GS with the Birmogh Golen-GS.
- One 33KV breaker panel for connection.

Furthermore in case of 2018 a single circuit line consisting of lynx conductor is proposed for conducting power from chakdara new to swat grid station respectively.



**Figure 4.2.1** Coordinates of Birmogh Golen-HPP

The coordinates of the site are at 35° - 55' to 35° - 56' N latitude and 72° 01' to 72° 02' E longitudes.

### 3 STUDY APPROACH

The following approach was applied in this Grid interconnection Study:

- a) A base case for the year 2017 and 2018 consisting of all the, 132 KV and 33 KV networks in addition to predicted load forecasts and additional generation plants was upgraded to account for all additional HPPs including the Birmogh Golen HPP.
- b) The month of September 2017 was selected to represent the peak generation case due to the high water flow during this time of the year resulting in the Plants to run at their maximum capacity.
- c) Development of an interconnection scheme for the Birmogh Golen HPP to evacuate power without physical constraints such as right of way (ROW) or availability of space on the terminal substations.
- d) Conduction of technical feasibility tests that include load flow and short circuit analysis in order to evaluate the robustness of the proposed interconnection scheme.
- e) Determination of the correct equipment for the proposed interconnection scheme.
- f) Recommendation of the most feasible interconnection scheme for the project.
- g) Determination and suggestions for the reinforcement of the transmission system to accommodate the cumulatively generated power of 2 MW from Birmogh Golen HPP.

Furthermore in case of 2018 a single circuit line consisting of lynx conductor is proposed for conducting power from chakdara new to swat grid station respectively.



## 4 DEVELOPMENT OF SCHEME OF INTERCONNECTION

### 4.1. The Existing Network

The proposed scheme will have the upcoming subject power project connected through a single circuit which will evacuate the power to the national grid through the 33 KV Jutilisht GS.

The 4 MW Reshun Power plant in the vicinity of Birmogh HPP is connected at 33 KV Reshun Grid station and 1.5 MW Shishi Power Plant is connected at 33 KV Shishi Grid station. In base case of 2018 a 106 MW GolenGol HPP is connected to Timergara 132 KV grid station through double circuit rail conductor.

There are a total of twelve power projects starting from Taobat HPP to Nagdar HPP that are proposed to be located along the Neelum River. All of the twelve HPPs attached in strings will be connected using double circuit. Taobat and Janawahi are modelled at 33KV Grid Stations due to their low generations of 10 MW and 12 MW.

The first string consists of Taobat and Janawahi are modelled at 33KV Grid Stations. After this the string will be stepped up to 33 KV at the Shontar HPP 33 KV Grid Station to which the Shontar HPP of 48 MW will be connected. The Shontar Grid Station of 33 KV will be connected to Gomat Nar HPP of 2 MW using Lynx conductor. Following this there will be four HPPs including Shadra-II 22 MW, Changan 9 MW, Doarian 40 MW and Luat 49 MW connected using double circuit Rail conductor till Doarian after this Twin Bundle Rail conductor will be used due to the increased power of these plants. Last power plant of this string would be Nagdar HPP of 35 MW. The Nagdar Grid Station would be connected to Muzaffarabad-II Grid Station through Jagran-III Grid Station using Twin bundle rail conductors.

The second string will have Jagran-IV connected to Jagran-II and Jagran-III using single circuit rail conductor. Jagran-II will be connected to Jagran-III using single circuit rail conductor and finally Jagran-III will evacuate power to the Muzaffarabad-II Grid Station.

The third string will have Jhing-III, Jhing-II and Jhing-I connected using double circuit by Dog Conductor except for Jhing-III which will be connected to Jhing-II using single circuit by Dog conductor. The string will evacuate power into the National Grid by stepping up the 33 kV to 33 kV at the Muzaffarabad-33 Grid Station.

Besides, a robust and strong network of 220 KV transmission lines is connecting the Mansehra New 220/33 KV Grid Station to the 220 KV Islamabad New GS, 220 KV Allai

## 5 DETAILED LOAD FLOW STUDIES

The detailed load flow studies have been carried out with the proposed interconnection scheme for various operating scenarios with maximum dispatch from all the existing/under-construction/planned HPPs in the surrounding area to evaluate the adequacy of the proposed interconnection scheme for Birmogh Golen HPP for its reliable power evacuation to the National Grid. In this regard, system scenarios for peak and off-peak load conditions in year 2017 and 2018 have been simulated to evaluate the adequacy of the proposed interconnection scheme and performance of Birmogh Golen HPP on the system under normal and N-1 contingency conditions.

It is to be noted that all the load flow study Exhibits referred in the following sections of this chapter are attached in Appendix-3.

### 5.1. Base Case Load Flow 2017 With Out Birmogh Golen HPP

Load flow study for the peak load condition in 2017 under normal system conditions have been carried out without the addition of 2 MW Birmogh Golen HPP and is attached in Appendix-3 and discussed below.

The normal case is provided as Exhibit 0.0 in Appendix-3. The system plotted in this exhibit comprises all the HPPs of Chitral valley around Birmogh Golen HPP and surrounding substations including Reshun, Darosh and Jutilisht. The load flow results show that the power flow on all the circuits are within their normal ratings. The voltage profile of these surrounding substations is also within the normal limits.

For N-1 contingency conditions, we have performed the following cases:

EXHIBIT #	Contingency Conditions
0.1	Chakdara to Timergara out
0.2	Chakdara to swat out
0.3	Chakdara new to swat out
0.4	Chakdara new to barikot out
0.5	Barikot to swat out
0.6	Chakdara new to chakdara out

**Table 5.1.1** Peak Load Case 2017 Contingency Conditions Without Birmogh Golen

In this case described above the power flow on all the circuits remained within the limits and no capacity constraint in terms of MVA (reactive power flow) or MW (real power flow) flow were observed in the vicinity of Birmogh Golen HPP for its connectivity under normal and N-1 contingency conditions.

## 5.2. Peak Case Load Flow 2017 With Birmogh Golen HPP

Load flow study for the peak load condition in 2017 under normal system conditions have been carried out with the addition of 2 MW Birmogh Golen HPP and is attached in Appendix-3 and discussed below.

The normal case is provided as Exhibit 1.0 in Appendix-3. The system plotted in this exhibit comprises all the HPPs of Chitral valley around Birmogh Golen HPP and surrounding substations including Reshun, Darosh and Jutlisht. The load flow results show that the power flow on all the circuits are within their normal ratings. The voltage profile of these surrounding substations is also within the normal limits.

For N-1 contingency conditions, we have performed the following cases:

EXHIBIT #	Contingency Conditions
1.1	One Machine Out
1.2	Switchyard out at Birmogh Golen HPP
1.3	Birmogh to Jutlisht out
1.4	Chakdara to Timergara out
1.5	Chakdara to swat out
1.6	Chakdara new to swat out
1.7	Chakdara new to barikot out
1.8	Barikot to swat out
1.9	Chakdara new to Chakdara out

**Table 5.2.1** Peak Load Case 2017 Contingency Conditions With Birmogh Golen

In all cases described above the power flow on all the circuits remained within the limits and no capacity constraint in terms of MVA (reactive power flow) or MW (real power flow) flow were observed in the vicinity of Birmogh Golen HPP for its connectivity under normal and N-1 contingency conditions.

## 5.3. Off Peak Case Load Flow 2017 With Birmogh Golen HPP

Load flow study for the Off Peak load condition in 2017 under normal system conditions have been carried out with the addition of 2 MW Birmogh Golen HPP and is attached in Appendix-3 and discussed below.

The normal case is provided as Exhibit 1.0 in Appendix-3. The system plotted in this exhibit comprises all the HPPs of Chitral valley around Birmogh Golen HPP and surrounding substations including Reshun, Darosh and Jutilisht.. The load flow results show that the power flow on all the circuits are within their normal ratings. The voltage profile of these surrounding substations is also within the normal limits.

For N-1 contingency conditions, we have performed the following cases:

EXHIBIT #	Contingency Conditions
2.1	One Machine Out
2.2	Switchyard out at Birmogh Golen HPP
2.3	Birmogh to Jutilisht
2.4	Chakdara to Timergara out
2.5	Chakdara to swat out
2.6	Chakdara new to swat out
2.7	Chakdara new to barikot out
2.8	Barikot to swat out
2.9	Chakdara new to Chakdara out

**Table 5.3.1 Off Peak Load Case 2017 Contingency Conditions With Birmogh Golen**

In all cases described above the power flow on all the circuits remained within the limits and no capacity constraint in terms of MVA (reactive power flow) or MW (real power flow) flow were observed in the vicinity of Birmogh Golen HPP for its connectivity under normal and N-1 contingency conditions.



## 5.4. Peak Case Load Flow 2018 With Birmogh Golen HPP

Load flow study for the peak load condition in 2018 under normal system conditions have been carried out with the addition of 2 MW Birmogh Golen HPP and is attached as Appendix-3.

The load flow analysis has been carried out for normal case and N-1 contingency conditions during peak load scenario of 2018. The load flow analysis reveals that the active and reactive power flow from Birmogh Golen HPP and other upcoming HPPs in its vicinity remain within limits.

The load flow analysis of the normal case is attached as Exhibit#3.0. Whereas the load flow analysis has also been carried out for N-1 contingency conditions during peak load condition in 2018.

The results of contingency studies are attached as Exhibit #3.1 to 3.9 and are summarized as under:

EXHIBIT #	Contingency Conditions
3.1	One Machine Out
3.2	Switchyard out
3.3	Birmogh to Jutilisht out
3.4	Chakdara To Timergara out
3.5	Chakdara new To swat out
3.6	Chakdara new to barikot
3.7	Barikot to Swat out
3.8	Chakdara new to chakdara out
3.9	Golengol to Timergara out

**Table 5.4.1** Contingency Conditions Peak Load Case 2021 With Birmogh Golen HPP

The results of the load flow analysis under Normal and N-1 Contingency Analysis reveal that the Power flow through the transmission lines and transformers, and the voltage profile of the network remain within the required limits.

In general, the study shows that the voltage profile of the network and the switchyard of the subject project lies within the given limits and there is no adverse effect or constraints on the transmission network during the flow of power from the subject project to the national grid under normal and N-1 contingency conditions.

### 5.5. Off Peak Case Load Flow 2018 With Birmogh Golen HPP

Load flow study for the Off Peak load condition in 2018 under normal system conditions have been carried out with the addition of 2 MW Birmogh Golen HPP and is attached as Appendix-3.

The load flow analysis has been carried out for normal case and N-1 contingency conditions during off peak load scenario of 2018. The load flow analysis reveals that the active and reactive power flow from Birmogh Golen HPP and other upcoming HPPs in its vicinity remain within limits.

The load flow analysis of the normal case is attached as Exhibit#4.0. Whereas the load flow analysis has also been carried out for N-1 contingency conditions during peak load condition in 2018.

The results of contingency studies are attached as Exhibit #4.1 to 4.9 and are summarized as under:

EXHIBIT #	Contingency Conditions
4.1	One Machine Out
4.2	Switchyard out
4.3	Birmogh to Jutlisht out
4.4	Chakdara To Timergara out
4.5	Chakdara new To swat out
4.6	Chakdara new to barikot
4.7	Barikot to Swat out



4.8	Chakdara new to chakdara out
4.9	Golengol to Timergara out

**Table 5.5.1** Contingency Conditions Off Peak Load Case 2018 With Birmogh Golen HPP

The results of the load flow analysis under Normal and N-1 Contingency Analysis reveal that the Power flow through the transmission lines and transformers, and the voltage profile of the network remain within the required limits.

In general, the study shows that the voltage profile of the network and the switchyard of the subject project lies within the given limits and there is no adverse effect or constraints on the transmission network during the flow of power from the subject project to the national grid under normal and N-1 contingency conditions.

## 5.6. Conclusions Of Load Flow Analysis

After conducting and analyzing the Load Flow Analysis no incremental pre-contingent system overloads or voltage violations resulting from interconnection of 2 MW Birmogh Golen Hydro Power Plant were found within the local study area or across bulk 33 kV transmission systems in either of the simulated alternatives.

This finding was also validated through associated pre-contingent steady state system and post-contingency steady state system, overload and voltage violation screening outputs generated for the system model.

Thus, it can be concluded that the power flow on all the circuits in all the cases with and without connecting 2 MW Birmogh Golen Hydro Power Plant are within defined limits and the voltages and loadings are in acceptable range of defined study criteria.

All the proposed and simulated alternatives meet the technical requirements specified under the NEPRA/NTDC grid code and other planning criteria.

Based on load flow study results, it is concluded that the proposed interconnection of the 2 MW Birmogh Golen Hydro Power Plant with PESCO grid network meets all applicable grid code and planning criteria and has no adverse effect on the national grid.

## 6 SHORT CIRCUIT ANALYSIS

The short circuit analysis have been carried out with proposed Interconnection scheme of Birmogh Golen HPP to compute the maximum three phase and single phase short circuit levels at the switchyard of Birmogh Golen HPP and substations in its vicinity with and without the addition of Birmogh Golen HPP. The studies have been carried out with all the existing and planned generation in operation and with interconnected transmission system. The minimum three phase and single phase short circuit levels have also been carried out at the 33 kV switchyard of Birmogh Golen HPP for various number of turbines in operation and reduced generation in its vicinity.

### 6.1. Methodology and Assumptions

The IEC 60909 methodology provided in PSSE V.34 was applied while conducting the short circuit analysis of the Birmogh Golen HPP. Under IEC 60909 the following assumptions are deployed during the calculation of the maximum and minimum short circuit currents:

- ❖ The tap ratios set to unity
- ❖ The line charging set to Zero
- ❖ The shunt set to zero in positive sequence
- ❖ Set voltage magnitude at bus bars equal to 1.10 p.u for maximum short circuit analysis and 0.9 p.u for minimum short circuit analysis.

In the short circuit analysis, the parameters of generator and step-up transformer for Birmogh Golen HPP, have been assumed as per information provided by its sponsor, mentioned in chapter #2. The results of maximum and minimum short circuit studies with necessary details are presented in Appendix-4.

The short circuit studies have been carried out with proposed Interconnection scheme and by using the specified parameters for generator and step-up transformer to compute the maximum three phase and single phase short circuit levels at the switchyard of Birmogh Golen HPP and other substations in its vicinity. The studies have been carried out for the year 2017-18 with all the existing and planned generation in operation and with interconnected transmission system.

### 6.2. Maximum Fault Current Calculations With Birmogh Golen HPP

In order to check the short circuit strengths of 33 kV network after including Birmogh Golen Hydro Power Project in this scenario for the grid of PESCO in the vicinity of the power plant, the fault current has been calculated for balanced 3-phase and unbalanced single phase short circuit conditions. These levels will provide the fault levels after including the Birmogh Golen Hydro Power project in the amount on how much the contribution of fault current from Birmogh Golen Hydro Power project would be added to the existing levels.

The polar coordinates of the fault current are given in the Appendix-4 such as the magnitude and the angle of the current.

The total maximum fault current for 3-phase and 1-phase short circuit at these substations are also summarized in table 6.3.1. From this table, it is evident that the maximum fault current does not exceed the short circuit rating in this scenario.

S.No	Name Of Faulted Bus Bars	3-Phase Short Circuit Level (kA)	Single Phase Short Circuit Level (kA)
1	Golen s/y	4.727	3.044
2	Reshun 33Kv	5.138	4.133
3	Jutlisht 33KV	5.343	4.137
4	Darosh Kv	4.835	4.278
5	Shishi 33Kv	4.799	4.268
6	Dir 33Kv	2.482	2.666
7	Dir 66Kv	1.848	1.072
8	Warai 66Kv	2.820	1.765
9	Timergara 66Kv	6.556	4.665
10	Timergara 132Kv	11.568	7.748

11	Chakdara new 132Kv	18.792	14.028
12	Golen Gol 132Kv	3.193	1.647
13	Swat 132Kv	9.721	6.555
14	Barikot 132Kv	8.911	5.985
15	Chakdara 220Kv	13.741	9.590
16	Chakdara 132Kv	18.449	13.764

**Table 6.3.1** Maximum Short Circuit Levels With Birmogh Golen HPP

The results of the fault analysis with the addition of the Birmogh Golen-HPP to the network are provided in Appendix-4.

### 6.3. Minimum Fault Current Calculations With Birmogh Golen HPP

In order to check the short circuit strengths of 33 kV network after including Birmogh Golen Hydro Power Project in this scenario for the grid of PESCO in the vicinity of the power plant, the minimum fault current has been calculated for balanced 3-phase and unbalanced single phase short circuit conditions. These levels will provide the fault levels after including the Birmogh Golen Hydro Power project in the amount on how much the contribution of fault current from Birmogh Golen Hydro Power project would be added to the existing levels.

The polar coordinates of the fault current are given in the Appendix-4 such as the magnitude and the angle of the current.

The total minimum fault current for 3-phase and 1-phase short circuit at these substations are also summarized in table 6.5.1. From this table, it is evident that the minimum fault current does not exceed the short circuit rating in this scenario.

S.No	Name Of Faulted Bus Bars	3-Phase Short Circuit Level (kA)	Single Phase Short Circuit Level (kA)
------	--------------------------	----------------------------------	---------------------------------------

1	Golen s/y	4.613	2.971
2	Reshun 33Kv	5.0	4.023
3	Jutlisht 33KV	5.186	4.015
4	Darosh 33 Kv	4.542	4.020
5	Shishi 33Kv	4.512	4.013
6	Dir 33Kv	2.045	2.196
7	Dir 66Kv	1.252	.726
8	Warai 66Kv	1.841	1.152
9	Timergara 66Kv	4.133	2.941
10	Timergara 132Kv	7.155	4.793
11	Chakdara new 132Kv	11.343	8.469
12	Golen Gol 132Kv	2.316	1.195
13	Swat 132Kv	5.871	3.959
14	Barikot 132Kv	5.381	3.614
15	Chakdara 220Kv	8.168	5.703
16	Chakdara 132Kv	11.152	8.322

**Table 6.5.1** Minimum Short Circuit Levels With Birmogh Golen HPP

The results of the fault analysis with the addition of the Birmogh Golen-HPP to the network are provided in Appendix-4.

## 6.4. Conclusions of Short Circuit Analysis

It is evident from the short circuit analysis that the induction of Birmogh Golen HPP and its surrounding HPPs have no adverse impact on the existing and proposed substations in their vicinity as far as short circuit levels are concerned. The maximum three phase and single phase short circuit levels at the 33 kV switchyard of Birmogh Golen HPP are 4.3 kA and 2.3 kA respectively in the year 2021-22 but these are expected to rise due to future grid system. Consequently, the short circuit rating of 20 kA would be adequate for the 33 kV switchyard equipment of Birmogh Golen HPP.

Therefore on the basis of short circuit analysis as well, it is concluded that the proposed interconnection scheme remains viable and stable.



## 7 DYNAMIC STABILITY ANALYSIS

Dynamic stability studies have been carried out with the proposed interconnection scheme to evaluate the dynamic response of generators and the power system after occurrences of faults. The dynamic stability simulations are used to check in time domain whether the generators at and in the vicinity of Birmogh Golen HPP as well as the power system remain stable after subjected to severe disturbances as per the Grid Code requirement.

### 7.1 Assumptions & Methodology

The dynamic simulation model of the entire network has been developed in PSSE software. The dynamic model parameters used for Birmogh Golen HPP study are attached in Appendix-5.

On the other hand, the dynamic models/parameters of generators, exciters and governors of all the other power plants, already available in Planning (Power) NTDC, have been used in the analysis.

The two severe types of disturbances simulated to assess the stability of the Birmogh Golen HPP and the power system as per the applicable NEPA grid code criteria are given as under:

- 3-phase fault at bus bar cleared in 5-cycles (100 ms) and tripping of the associated circuit.
- 3-phase fault at bus bar cleared in 9 cycles (180 ms) (delayed clearing or stuck breaker condition) and tripping of the associated circuit.

The simulations have been run in the time domain in the following sequence:

- Running simulation for initial one second for pre-fault steady state condition.
- Fault application at 1.0 second and running the simulation up to 1.1 second for 5 cycle fault (up to 1.18 second for 9 cycle fault).
- Fault clearance at 1.1 second for 5 cycle fault (1.18 second for 9 cycle fault) and tripping of the associated circuit.
- Running simulation up to 10 seconds after fault clearance.

The following generator and network parameters are monitored in the simulations and have been presented in the report through the following stability plots for each type of disturbance:

- i. Bus Frequency
- ii. Bus Voltage
- iii. Power
- iv. VAR

In order to interpret the stability plots, the bus numbers assigned to the bus bars and the voltage levels, are given as under:

BUS NUMBER	BUS NAME/VOLTAGE
74304	Birmogh Golen HPP 3.3kV
74305	Birmogh Golen HPP 33kV
5017	Reshun 33KV
5011	Shishi 33KV

**Table 7.1.1** Stability Analysis

## 7.2 Dynamic Stability Simulations

The Dynamic stability analysis for Birmogh Golen HPP with the proposed interconnection scheme has been carried out for peak load 2018 scenario. The stability of the Birmogh Golen HPP and the power system has been tested with application of different disturbances on the Birmogh Golen HPP and at the substations in its vicinity. The plotted results of the stability simulations are attached in Appendix-5 and described as under:

### 7.2.1. For Normal Clearing Time (100 ms)

The Dynamic stability studies for faults with normal clearing time of 100 ms corresponding to 5 cycles, have been carried out. The details of the faults & the associated outages, monitored variables, respective exhibits and stability behavior of Birmogh Golen HPP & other generators as well as the power system are mentioned and presented in the following table:



3-Phase Fault Location	Circuit Outage	Exhibit #	Monitored Variable
Birmogh Golen HPP 3.3kV	Birmogh Switch Yard	1.1	Bus Frequency
		1.2	Bus Voltage
		1.3	Power
		1.4	VAR
Birmogh Golen HPP 33kV	Jutlisht 33KV to Darosh 33KV	1.5	Bus Frequency
		1.6	Bus Voltage
		1.7	Power
		1.8	VAR
Reshun 33KV	Jutlisht 33KV to Darosh 33KV	1.9	Bus Frequency
		1.10	Bus Voltage
		1.11	Power
		1.12	VAR
Shishi 33KV	Darosh 33KV to Dir 33KV	1.13	Bus Frequency
		1.14	Bus Voltage
		1.15	Power
		1.16	VAR

**Table 7.2.1.1** Stability Analysis for 5 cycles

Three phase faults were applied on the Birmogh Golen HPP 3.3KV bus bar, Birmogh Golen HPP 33 KV bus bar, Reshun 33KV bus bar and Shishi 33KV bus bar which the simulations reveal to be cleared in 5 cycles (100 ms).

Following which the Switch Yard of Birmogh Golen HPP , 33 kV circuit of Jutlisht to Darosh and 33 KV circuit of Darosh to Dir were tripped respectively and after removal of the fault a steady state analysis was conducted and plotted in Appendix-5.

Different quantities such as Bus Frequency, Voltage, Power and VAR were monitored for pre-fault and post fault conditions and the results have been plotted in Appendix-5.

It is evident from the above stability Exhibits that Birmogh Golen HPP meets the requirements as mentioned in the NEPRA Grid Code Addendum for HPPs.

## 7.2.2. For Delayed Clearing Time (180 ms)

The Dynamic stability studies for faults with delayed clearing time of 180 ms corresponding to 9-cycle fault (stuck breaker condition) have been carried out. The details of the faults & the associated outages, monitored variables, respective exhibits and stability behavior of Birmogh Golen HPP & other generators as well as the power system are mentioned and presented in the following table:

3-Phase Fault Location	Circuit Outage	Exhibit #	Monitored Variable
Birmogh Golen HPP 3.3kV	Birmogh Switch Yard	2.1	Bus Frequency
		2.2	Bus Voltage
		2.3	Power
		2.4	VAR
Birmogh Golen HPP 33kV	Jutlisht 33KV to Darosh 33KV	2.5	Bus Frequency
		2.6	Bus Voltage
		2.7	Power
		2.8	VAR
Reshun 33KV	Jutlisht 33KV to Darosh 33KV	2.9	Bus Frequency
		2.10	Bus Voltage
		2.11	Power
		2.12	VAR
Shishi 33KV	Darosh 33KV to Dir 33KV	2.13	Bus Frequency
		2.14	Bus Voltage
		2.15	Power
		2.16	VAR

**Table 7.2.2.1** Stability Analysis for 9 cycles

Three phase faults were applied on the Birmogh Golen HPP 3.3KV bus bar, Birmogh Golen HPP 33 KV bus bar, Reshun 33KV bus bar and Shishi 33KV bus bar which the simulations reveal to be cleared in 9 cycles (180 ms).

Following which the Switch Yard of Birmogh Golen HPP, 33 kV circuit of Jutlisht to Darosh and 33 KV circuit of Darosh to Dir were tripped respectively and after removal of the fault a steady state analysis was conducted and plotted in Appendix-5



Different quantities such as Bus Frequency, Voltage, Power and VAR were monitored for pre-fault and post fault conditions and the results have been plotted in Appendix-5.

It is evident from the above stability Exhibits that Birmogh Golen HPP meets the requirements as mentioned in the NEPA Grid Code Addendum for HPPs.

### 7.3 Conclusions of Dynamic Stability Analysis

The results of Dynamic stability analysis indicate that Birmogh Golen HPP & other generators in its vicinity and the power system remain stable with no adverse effects after subjected to severe disturbances either on Birmogh Golen HPP or at the other substations in its vicinity. The stability simulations also proved that the proposed Birmogh Golen HPP fulfills all the criteria's as mentioned in the NEPA's Grid Code Addendum for HPPs.

## 8 CONCLUSIONS

Taking into consideration all applicable standards, equipment specifications and requirements a scheme has been proposed for the interconnection of the 2 MW Birmogh Golen Hydro Power Project with the national grid through the local PESCO network.

Keeping in view the interconnection scheme described in Chapter 4 the Birmogh Golen-HPP is connected through a single circuit Dog conductor with jultilisht 33 KV grid station.

Whereas the impact of addition of the Birmogh Golen HPP on the network of PESCO was analyzed through load flow and short circuit study analysis.

The power/load flow analysis reveals that the power on all the circuits/networks in all the cases with and without the 2 MW Birmogh Golen Hydro Power Plant and the voltages that appear at the bus bars remain within acceptable limit of the defined study criteria. The Load flow analysis is further validated by the given standards of line loading and bus voltage limits in the associated N-1 post contingency conditions.

Whereas the short circuit/fault study carried out to determine and analyze the impact of the 2 MW Birmogh Golen Hydro Power Plant to the fault levels of the existing substations in its vicinity, shows that with the addition of this project, fault levels do not exceed the standard circuit breaker ratings of existing installed equipment at the neighboring substations. The study also quantifies the maximum and minimum short circuit levels at buses of 2 MW Birmogh Golen Hydro Power Plant.

It is evident from the short circuit analysis that the induction of Birmogh Golen HPP and its surrounding HPPs have no adverse impact on the existing and proposed substations in their vicinity as far as short circuit levels are concerned. The maximum three phase and single phase short circuit levels at the 33 kV switchyard of Birmogh Golen HPP are 8.7 kA and 7.1 kA respectively in the year 2021-22 but these are expected to rise due to future grid system. Consequently, the short circuit rating of 20 kA would be adequate for the 33 kV switchyard equipment of Birmogh Golen HPP.

Therefore on the basis of short circuit analysis as well, it is concluded that the proposed interconnection scheme remains viable and stable.

All requisite standards specified by the Grid Code/Planning Criteria have been satisfied in the alternative evacuation scheme and it is open for review by the competent planning department of NTDC.



Therefore on the basis of the results of all the system studies provided in this study and summarized above, it is concluded that the proposed interconnection scheme of the 2 MW Birmogh Golen Hydro Power Project on the 33 KV Network through connection of the Birmogh Golen substation with the 33 kV Jutilisht GS has no adverse effect on the local PESCO network or the national grid at large, which remains robust with the addition of the Birmogh Golen HPP.

Hence it can be seen that there are no constraints with respect to the technical analysis performed under steady state load flow, contingency load flows and short circuit currents and dynamic stability, thus this proposed Grid Interconnection Scheme fulfils all the criteria of stability and reliability, and is recommended to be adopted.

## Brief history of SRSP

Sarhad Rural Support Programme (SRSP) is the largest non-government organization operational in Khyber Pakhtunkhwa and Federally Administered Tribal Areas. It is one of the 11 Rural Support Programmes established to reduce rural poverty and ensure sustainable means of livelihoods in urban and, especially, rural areas of Khyber Pakhtunkhwa province of Pakistan. SRSP enjoys a reputation based on its innovative initiatives undertaken as per needs of poor and marginalized members of the society.

SRSP is registered under the Companies Ordinance 1984 (XLVII OF 1984) with companies registration No. P-00337. SRSP was established in 1989 and since then it has been able to support development of over 40,733 community based organizations covering over 6.4 million population. The investment of SRSP in shape of programmatic, financial, technical, strategic and capacity building initiatives, on one hand, has led to development of three tiers (community, village and union councils) level local institutions, while on the other hand it has significantly contributed to social, economic and political development of rural areas and communities through various development packages.

SRSP's vision of development is 'to create a society, where poverty is reduced and sustainable means of livelihood are ensured, while the mission is 'to build social capital through mobilizing communities for poverty reduction in Khyber Pakhtunkhwa. Sarhad Rural Support Programme beyond any doubt is the largest organization with an extensive presence in all 25 districts of Khyber Pakhtunkhwa and 13 tribal areas. Since its establishment in 1989, SRSP has expanded its programme from 2 to 25 districts and all 13 tribal areas. Extensive coverage in mentioned districts, strong presence at local level and network of established offices are few comparative advantages of SRSP to facilitate partners in development to initiate projects and programmes as per needs of local communities.

SRSP's core competencies include strengthening and improving rural livelihoods through formation of community based three tier institutions (40,733 hamlet/village level community organizations (27,546 men and 13,187 women) representing 954,600 member households and 157 union council level Local support organizations), developing the technical and managerial capacities (393,000 individuals (238,000 men and 155,000 women members), undertake community physical infrastructure schemes (9,421 small scale infrastructure projects with men and women communities), establishing community managed renewable/sustainable energy projects (298 micro hydro projects are in different phase of completion with an electricity generation capacity of 23 megawatt, benefiting 105,880 household or 794,000 population including women and children), extending micro credit loans through innovative products and packages (355 village banks/organizations established in selected districts of Khyber Pakhtunkhwa addressing financial vulnerabilities of over 62,000 poor households mostly poor and vulnerable women), improving management of natural resources, support gender development and environment preservation, Enterprise and Value Chain Development, Policy Advocacy and Linkages. The other stream of programme comprises responding immediately to large scale natural or human made disasters. Recovery, relief through provision of food and non-food items and rehabilitation through delivering need based projects and programmes are some of the key aspects focused in humanitarian programmes (During earthquake 2005 operation, SRSP was able to reach over 125,000 population through its relief, rehabilitation and development efforts in 20 union councils district Mansehra, Abbottabad, Kohistan and Shangla. SRSP has also provided humanitarian services to over 4 million population affected by IDP crises and floods in IDP crises and floods in various districts of KP and all 13 tribal areas/agencies).



### Salient Feature of Golen 2 megawatt Hydro Power Project

Chitral Town serves as an economic hub for the whole district and contains largest concentration of population (more than 25,000 households). Additionally, the civil/children/civil military hospitals, medical laborites and clinics, educational institutions, local industries, shops, markets, judicial institutions and local administrative offices are the other factors resulting in huge influx of people from around the district all year long. Being the center for all kind of merchandising and other social activities supply of electricity for this particular area is vital for the survival of every segment of the society residing within the frontiers of this district.

Chitral town is presently supplied electricity from two sources. Both sources are owned and run by WAPDA/PESCO. The major source is the National Grid, which covers 80% of town area but due to its poor voltage and unscheduled load shedding, Chitral town is faced with acute shortage of power supply particularly in winter. Besides, the 66 KV transmission lines from Dir connecting the national grid suffer from acute maintenance problem in winter season. The other source of power supply for Chitral town is from local power station of WAPDA with a maximum capacity of 800 kW at present. This power station was constructed in 1975 with an initial designed capacity of 400 kW. Its capacity was then enhanced in 1984 up to 1.0 MW by commissioning two new units of 300 KW each. Presently, this power station is covering 20% of Chitral town for its power needs.

Keeping in view the aforementioned realities and to provide some relief from energy shortage, SRSP established a 2 megawatt hydro power plant in Birmogh Village, which is located on left bank of Golen Gol River in Chitral District of Khyber Pakhtunkhwa (KP) province. The project is being developed in private sector and is located at some 34 km North-east of the city of Chitral. It is proposed that the electricity would be transmitted to the PESCP/WAPDA's sub-station at Jutilasht Chitral through PEDO transmission lines from the production site. It would be distributed in Chitral Town through PESCO/WAPDA distribution system.

### Salient features of the Project:

District	Chitral
Village/Union Council	Golen/Koh
Capacity (KW)	2,000
Beneficiary Households	2,5000
Total cost (PKR)	328,060,000
Date of initiation	4 <sup>th</sup> April 2015
Date of Completion	February, 2017
Head	58 Meters
Discharge	4 Cusec
Type of turbine	Horizontal Francis
Intake structure dimension	W=15 m, L=10 m, H=5.3 m
Power channel length	618 m
Sand trap dimension	L=15 m, W=5 m, H=5.3 m
Fore bay Size	W=5 m, L=9 m, H=7.3 m
Penstock length	L=2084 m, Diameter=1.2 m
Power House area	L=22 m, W=15 m, H=19 m
Spillway pipes length & diameter	L=180 m, W=2.5 m
Transformers in design	2
Tail race length	L=40 m



## **Investment in 2 megawatt Golen hydro power project**

In response to severe energy crisis in Malakand Division, SRSP initiated a five and half year years' (Oct 2012 to March 2018) integrated programme with the financial support of European Union (EU). The programme namely 'Programme for community Advancement and Economic Development (PEACE)' comprise five components i.e. establishment of community institutions, infrastructure development, establishment of community managed micro hydro projects, women empowerment and growth of economic activities. Among these establishment of community managed hydro projects (MHPs) occupies more than of the budget share. The major focuses of establishing MHPs is to utilize immense potential of hydro resources available in Malakand division to produce clean, renewable, sustainable and affordable electricity through initiation and completion of 165 mini/micro/small hydro projects ranging from 25 kilowatt to 2 megawatt. These projects are expected produce 21 megawatt of electricity and provide clean 24/7 un-interrupted electricity to more than 75,000 households with a total cost of PKR 2.22 billion generating 21.7 MW and benefitting, predominantly, off-grid households at low cost when compared with national level tariff. SRSP's PEACE programme would, therefore, essentially focus on expanding energy infrastructure in underserved areas to benefit impoverished population. SRSP is making every endeavor to explore and harness the available water resources to achieve the goal socio-economic up-lift of rural communities and local development through construction of new power projects and improve the existing power generation & Distribution network of electricity.

The location of Chitral is very ideal for hydro power generation due to its hilly terrain, abundance of glaciers and waterfalls as ample resources for electricity generation. The 2 megawatt hydro power plant in Birmogh Village is being developed in private sector under the management of Sarhad Rural Support Programme. The funding for the 2 mw Golen HPP in Chitral has been made available from the PEACE programme. A total of PKR 325.06 million has been made available with PKR 97.52 million as Equity and PKR 227.54 million as Debt. A total of 155.36 million PKR is being spent on purchase and installation of Electromechanical Equipment, whereas 169.7 million PKR has been allocated for civil construction.



## Social and environmental impact of the project

The clean, sustainable and renewable energy from Golen HPP is likely to contribute to overall social and economic development of this area, which in recent past had been severely affected by natural and human made disasters. Apart from the providing clean energy 25,000 households of Chitral Town, the HPP would also benefit civil, children and military headquarter hospitals, medical laboratories/pathologies labs and clinics, educational institutions, local industries, shops, markets, judicial institutions and local administrative offices. The computer labs would again be functional with the availability of electricity. With improved conditions via connectivity to HPP, the social sector services facilities, would become more attractive for teachers and health workers thus improving health and education in local areas.

Access to electricity has considerably contributed in improving living conditions of programme beneficiaries. Different electronic gadgets including washing machines, butter churners, satellite televisions, computer, cell phones, fans etc, which were becoming liabilities, would now be valuable assets resulting in adding to the comfort local and their access to international media for information and entertainment. These gadgets would also decrease workload on either gender through replacement of labor intensive activities.

As far as the environmental impacts of the project are concerned, the finding of IEE shows that the adverse impacts on physical, biological, socio economic and cultural environment due to the implementation of the proposed GHPP are mostly low, local and short term, whereas the impacts of biological components of the project is low and short term. The adverse impacts on physical and socio-cultural environment are also low and short term. On the other hand the beneficial impacts, like support to local and national economy and addressing the energy crisis in the district are, of the project are more pronounced as compared to its adverse effects.

Due to better management at planning stages, the adverse impacts on environment have been limited by selecting environmentally friendly design options and otherwise suggesting appropriate mitigation measures for all identified/predicted adverse impacts and enhancement measures to maximize the project benefits. The environmental impact mitigation measures were incorporated in detail design of the proposed project and so on, contract documents and in overall, the IEE study concluded that the proposed project had not have significant impacts on physical, biological and socio-economic & cultural environment of the project area; hence the proposed project was environmentally and socially feasible.

The project would make a remarkable contribution in providing renewable, clean and sustainable energy to 25,000 locals Chitral Town, and would reduce usage of fossil fuels, besides reducing pressure on precious forests. The irrigation channels to channelize water to the HPP would further improve vegetation and help in developing social cohesion. Increasing reliability of electricity in the areas would encourage households/businesses to stop use of other makeshift measures, such as costly diesel/gasoline generators.

