



BAK Consulting Engineers

We at BAK utilise our knowledge and expertise in creating affordable and sustainable solutions with the aim of maximising our contribution in improving quality of life.



Company
Profile





H. D. Bangash (Late)



Abdul Ali Khan (Late)



Karim Khan (Late)

About BAK

BAK Consulting Engineers is a multi-disciplinary design and engineering consultancy established in 1988 by H.D. Bangash (Late), Abdul Ali Khan (Late) and Karim Khan (Late). In a span of 36 years, the company has acquired extensive expertise in planning, design and construction of Dams, Renewable Energy, Irrigation, Infrastructure Development, Buildings, Roads & Highways, Water Supply, Geological, Geotechnical, Environmental and Social sectors.

We at **BAK** utilize our knowledge and expertise in creating affordable and sustainable solutions with the aim of maximizing our contribution in improving quality of life. Our delivered projects have positive impacts on the quality of life nationwide by addressing important societal challenges. With the use of latest technologies, we are efficiently meeting the client requirements driven by global trends such as urbanization, climate change, digitalization, client expectations and potential unforeseeable events.

Our Vision

Creating exceptional solutions with professional excellence and dedication keeping the community in mind.

Management

- 
- **Rizwan Ullah**
M.Sc Water Resources
B.Sc Civil Engineering
 - **Arsalan Haider**
M.Sc Water Resources
B.Sc Civil Engineering
PGD in GIS and Remote Sensing
 - **Aziz Ul Hakeem**
M.Sc Structural Engineering
B.Sc Civil Engineering
CEng MIStructE (United Kingdom)
 - **Muhammad Haroon Faruqi**
M.Sc Irrigation/Hydraulics Engineering (United Kingdom)
B.Sc Civil Engineering
 - **Muhammad Ishaq**
M.Sc Structural Engineering
B.Sc Civil Engineering
CEng MICE (United Kingdom)

Sectors We Serve

We provide Planning, Surveys, Investigations, Feasibility Studies, Detailed Design, EPC Design, Construction Supervision and Contract Management Services for:

- Hydropower Projects
- Concrete, Rockfill and Earthfill Dams
- Embankments and Dykes
- Gravity and Pressure Tunnels, Surge Shafts and Chambers
- Hydraulic and Structural Designs
- Water Supply, Irrigation & Drainage
- Buildings & Infrastructure
- Water Logging and Salinity Control
- Roads and Bridges
- Environment, Social and Resettlement
- Geological & Geotechnical Services
- Slope Stability and Protection Works
- Small Industries
- Cable Cars & Chairlifts
- Architecture
- Switchyards and Transmission Lines
- Flood Protection Works
- Electro-Mechanical Works
- Ports, Harbours and Railways
- Hydrological and Sedimentation Studies



Our Expertise

We emphasize on providing effective, sustainable, cost effective and innovative solutions to our Clients according to the industry standards. Our services and expertise gives us the ability to successfully deliver the projects with positive impacts on the quality of life.

BAK Consulting Engineers is equipped with a team of highly motivated and dynamic professionals, well aware of the project nature and capabilities in providing the resources necessary for the accomplishment of assignments with quality and professionalism. Our team of experts have the knowledge, qualification and expertise for delivering complex projects requiring:

- Planning & Investigations
- Topographic & Hydrographic Surveys
- Contract Management & Construction Supervision
- Conceptual Design
- Project Reviews
- Services as Panel of Experts
- Project Management
- Feasibility Studies
- Detailed Design & Drawings
- Engineering Procurement & Construction (EPC)
- Designs Preparation of PC-I and Engineer's Estimates
- Tender Documents



Projects



Diamer-Basha Dam Project
Consultancy Services for Implementation of Confidence Building Measures and other Allied Works

Location: Chilas, District Diamir, Gilgit-Baltistan, Pakistan
Confidence Building Measures is an Umbrella project consisting of Buildings, Roads, Hydropower, Water Supply, Sewerage, Rehabilitation & Restoration Works, Hospitals, Storm Water Drainage, Flood Protection Works, Fisheries Management Plan and other infrastructure works.

Project Cost: PKR 80 billion



Raising of Baran Dam & Construction of Tochi Baran Link Canal

Location: F.R Bannu, Khyber Pakhtunkhwa, Pakistan

Weir/Dam Type: Earth Core Rockfill Dam (ECD)

Dam Height: 30 m

Raising Height: 7m

Reservoir Capacity: 12,335 ha-m

Command Area: 68,796 ha

Project Cost: PKR 5.156 billion



Feasibility, Detailed Design and Construction
Supervision of 81 MW Malakand-III Hydropower Project

Location: Dargai, Malakand, Khyber Pakhtunkhwa, Pakistan

Weir/Dam Type: Diversion Weir at Swat River

Headrace Channel: 2.6 Km

Power Generation: 81 MW

Design Discharge : 51 cumecs

Net Head: 181 m

Length of Power Tunnel: 3.3 km

Annual Energy: 549 GWh

Project Cost: USD 112 Million (In 2002)



Management Consultancy Services for
Gomal Zam Dam Multipurpose Project

Location: South Waziristan District, Khyber Pakhtunkhwa, Pakistan

Type: Roller Compacted Concrete (RCC) Gravity Dam

Dam Height: 133 m

Power Generation Capacity: 17.4 MW

Command Area: 65,964 Ha

Length of Main Canal: 60 km

Gross storage capacity: 1.140 MAF

Main Canal: (Design Discharge): 24 cumecs

Project Cost: USD 206 Million



Feasibility Study, Detail Design & Construction
Supervision of Bazai Irrigation Scheme

Location: Malakand and Mardan Districts, Khyber Pakhtunkhwa, Pakistan

Command Area: 10,117 Ha

Discharge: 5.66 cumecs

Main Canal length: 39 Km

Distributaries and Minors: 85 km

Project Cost: USD 58 Million



FATA Water Resources Development
Project (FWRDP) – ADB Funded

Location: Khyber, Bajour and Mohmand Districts, Khyber Pakhtunkhwa, Pakistan

FATA Water Resources Project (FWRDP) funded by Asian Development Bank (ADB) was an Umbrella project consisting of 4 No. Dams, 18 No. Diversion Weirs, 3 No. Command Area Development Projects, 3 No. Solar Lift Irrigation Schemes, 5 No. Infiltration Galleries.

New Command Area: 4,318 Ha

Command Area Development: 1,747 Ha

Watershed Management: 5,050 Ha

Project Cost: USD 40 Million



Panel of Experts - Review the Feasibility and Design of 40 MW Hanzel HPP

Location: Gilgit, Gilgit-Baltistan, Pakistan

Design Discharge: 74 cumecs

Power: 40 MW

Net Head: 60.4 m

Diversion Weir (Height): 19 m

Headrace Tunnel (Length): 3,680 m

Project Cost: PKR 20.5 Billion



Detailed Engineering Design, Preparation of Bidding Documents and PC-I of Hingol Dam (New Site)

Location: Lasbela, Baluchistan, Pakistan

Height: 54 m

Gross Storage Capacity: 1,974 MCM

Spillway Design Capacity: 30,813 cumec

Feeder Canal Length: 112 km

Command Area: 26,300 ha



Golen Gol Hydropower Project (108 MW)

Location: Chitral, Khyber Pakhtunkhwa, Pakistan

Weir/Dam Type: Ogee

Power Generation: 108 MW

Design Discharge: 30 cumec

Gross Head: 436 m

Headrace Tunnel: 3.8 km

Annual Energy: 442 GWh

Project Cost: USD 274 Million (In 2016)



Balakot Hydropower Project (300 MW)

Location: Balakot - Mansehra, Khyber Pakhtunkhwa, Pakistan

Weir/ Dam Type: 58 m high Concrete Gravity Dam

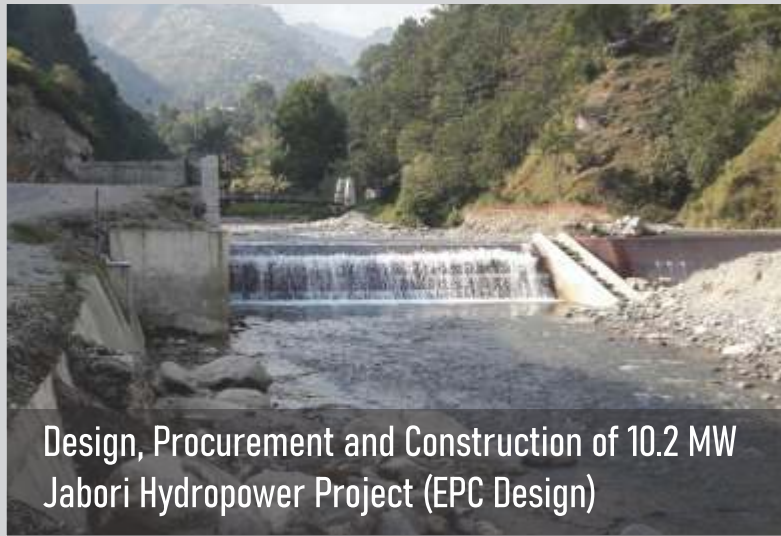
Power Generation: 300 MW Installed capacity for a 218 m net head and 154 cumec turbine flow

Tunnel: 9.1 km

Power House: Cavern Power House

Annual Energy: 1,143 Gwh

Project Cost: USD 550 Million



Design, Procurement and Construction of 10.2 MW
Jabori Hydropower Project (EPC Design)

Location: Jabori Village, Mansehra – Khyber Pakhtunkhwa, Pakistan

Weir/ Dam Type: Tyrolean

Power Generation: 10.2 MW

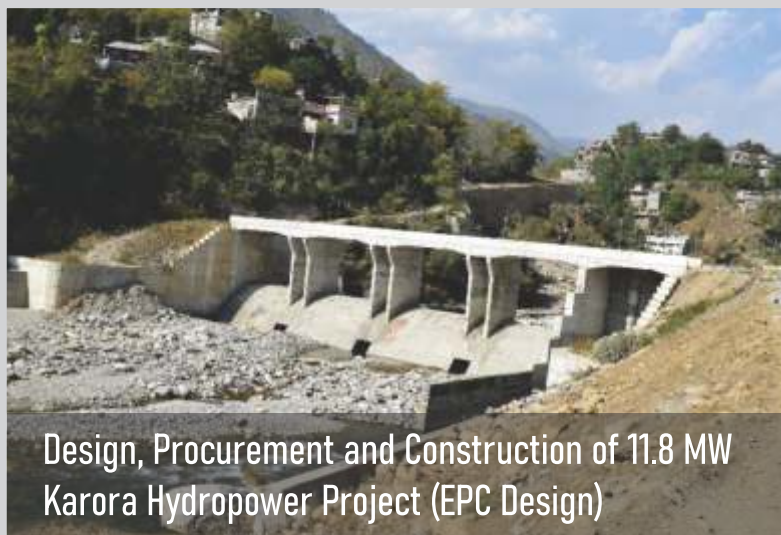
Design Discharge: 8 cumec

Gross Head: 148 m

Tunnel: 2.8 km

Annual Energy: 71.1 GWh

Project Cost: USD 28 Million



Design, Procurement and Construction of 11.8 MW
Karora Hydropower Project (EPC Design)

Location: Karora, Shangla – Khyber Pakhtunkhwa, Pakistan

Weir/ Dam Type: Tyrolean

Power Generation: 11.8 MW

Design Discharge: 9.75 cumec

Gross Head: 142 m

Tunnel: 2.94 km

Annual Energy: 71.39 GWh

Project Cost: USD 47 Million



Design, Procurement and Construction of
Gorkin-Matiltan Hydropower Project (EPC Design)

Location: Matiltan, Swat, Khyber Pakhtunkhwa, Pakistan

Weir/ Dam Type: Ogee

Power Generation: 84 MW

Design Discharge: 42 cumec

Gross Head: 253 m

Tunnel: 6.67 km

Annual Energy: 346 GWh

Project Cost: USD 195 Million



Feasibility, Detailed Engineering Design and
Construction Supervision of Jabba Dam
(Water Supply project)

Location: Khyber District, Khyber Pakhtunkhwa, Pakistan

Weir/Dam Type: Earth Core Rockfill Dam (ECRD)

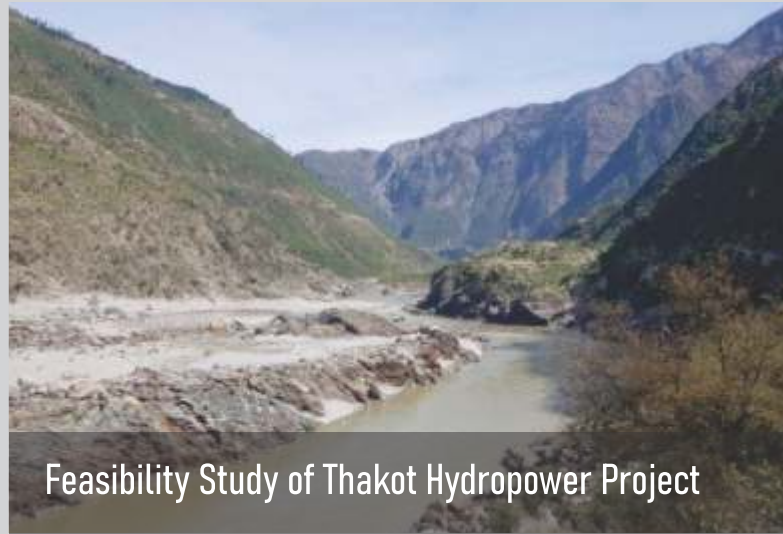
Spillway Design: 3,115 cumecs

Dam Height: 70 m

Reservoir Capacity: 4,564 Ha-m

Treatment Plant: Slow Sand Filter Plant

Project Cost: USD 63 Million



Feasibility Study of Thakot Hydropower Project

Location: Thakot, Kohistan, Khyber Pakhtunkhwa, Pakistan

Weir/Dam Type: RCC

Power Generation: 4,866 MW

Design Discharge: 3,400 cumec

Gross Head: 159 m

Tunnel: 28 km

Annual Energy: 23,125 Gwh

Project Cost: USD 7,698.34 million



Pilot Activities for Promoting Employment of
Afghan Refugees and Host Communities
(JICA Funded)

A Data collection/Survey on livelihood improvement through vocational training for Afghan refugees and host communities.

Social Survey for Pilot Studies: Sept 2022-July 2024



Barakas Dam

Location: Khyber District, Khyber Pakhtunkhwa, Pakistan

Dam Type: Face Symmetrical Soft fill Dam (FSSD)

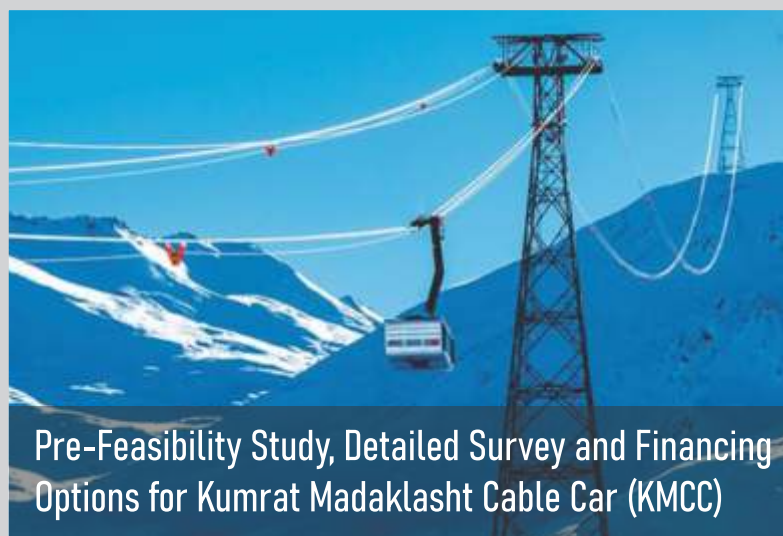
Dam Height: 15 m

Dam Crest Length: 131m

Gross Storage: 27 ha-m

Spillway Design: 230 cumecs

Project Cost: USD 1.88 Million



Pre-Feasibility Study, Detailed Survey and Financing Options for Kumrat Madaklasht Cable Car (KMCC)

Location: Dir & Chitral, Khyber Pakhtunkhwa, Pakistan

Length of Cable Car: 14 Km

Maximum Altitude : 5,200 masl

Type: Back and Forth

Facilities: Cable Car, Infrastructure Development & Allied Facilities include Car parking plaza for 500 vehicles. Hotels at Base Station, Intermediate Stations and End Station. Skiing facilities at Intermediate Stations. Mosques and Walking Track. Surveillance roads between Base and End Stations. Hydropower plants of sufficient capacity.

Project Cost: USD 275 Million



Town View Apartments

Location: Peshawar, Khyber Pakhtunkhwa, Pakistan

Building: 11 Storey

Covered area: 220,000 Sq Ft

Purpose: High Rise Mixed Use Building



Detailed Engineering Design, Construction Design, Construction Supervision and Contract Management of 800 MW Mohmand Dam Hydropower Project

Location: Mohmand District, Khyber Pakhtunkhwa, Pakistan

Dam Type: Concrete Face Rockfill Dam

Dam Height: 213 m

Gross Storage: 1.239 MAF

Power Generation: 800 MW

Annual Energy: 2,862 GWh

CCA: 6,773 ha

Cost: USD 2,623 Million

Major Dams Projects

FS: Feasibility Study

DD: Detailed Engineering Design

CS: Construction Supervision

MC: Management Consultant

DR: Design Review

KP: Khyber Pakhtunkhwa

GB: Gilgit Baltistan

JV: Joint Venture

S.No	Project Name	Location	Type	Handled As
1	Hingol Dam	Lasbela Baluchistan	DD	Lead
2	Tank Zam Dam	Tank - KP	DD	JV
3	Daraban Zam, Chaudwan Zam & Kora Nullah Dam D. I. Khan	D. I. Khan - KP	DD	Lead
4	Jabba Dam	Khyber - KP	FS, DD & CS	Lead
5	Raising of Baran Dam	Bannu - KP	FS, DD & CS	Lead
6	Mohmand Dam	Mohmand - KP	FS, DD & CS	Associate
7	Gomal Zam Dam Multipurpose Project	South Waziristan KP	MC	JV
8	Baz Ali Dam	Kurram - KP	FS & DD	Lead
9	Motoshah Dam	Mohmand - KP	FS & DD	Lead
10	Sarobi Dam	North Waziristan KP	FS & DD	Lead
11	Jaji Dam	Kurram - KP	FS & DD	Lead
12	Pindiali Dam	Mohmand - KP	Rehabilitation	Lead
13	Kand Dam	North Waziristan KP	DR & CS	Lead
14	Sarozai Dam	Hangu - KP	FS & DD	Lead
15	Zao Dam	Khyber - KP	FS, DD & CS	Lead
16	Panjtar Dam	Buner - KP	DD	Lead
17	Barakas Dam	Khyber - KP	FS, DD & CS	Lead
18	Megoodand Dam	Khyber - KP	FS, DD & CS	Lead
19	Tabai Dam	Khyber - KP	FS, DD & CS	Lead
20	Jay Dam	Mohmand - KP	FS, DD & CS	Lead

Major Irrigation Projects

FS: Feasibility Study

DD: Detailed Engineering Design

CS: Construction Supervision

MC: Management Consultant

DR: Design Review

KP: Khyber Pakhtunkhwa

GB: Gilgit Baltistan

JV: Joint Venture

S.No	Project Name	Location	Type	Handled As
1	Khyber Pakhtunkhwa Irrigated Agriculture Improvement Project	KP	CS	JV
2	Revamping of Budni Nullah	Peshawar - KP	DR & CS	Lead
3	FATA Water Resources Developemnt Project	KP	DD & CS	Lead
4	Feeder Canal for feeding Civil Khatas on Adezai, Khiali, Naguman & Kabul	Peshawar - KP	FS	Lead
5	Barrage on Swat River at A.T Works for Feeding of Upper Swat Canal System	Malakand - KP	DD & CS	JV
6	Flood Restoration Work in Northern Irrigation Circle Mardan	Mardan - KP	DD & CS	JV
7	Alternate alignment/proposal for the construction of Tirichin - Attahk Irrigation Scheme	Chitral - KP	FS	JV
8	Irrigation Facilities to Agricultural Lands situated on both sides of Panjkora River in Shringel Valley	Dir Upper - KP	FS	Lead
9	Flood Restoration of Additional Training Works and Amandara Head Works Upper Swat Canal	Swat - KP	DD & CS	JV
10	Bazai Irrigation Scheme	Malakand - KP	DD & CS	Lead
11	Rangmala Gravity Scheme	Malakand - KP	FS	Lead
12	Extension of PHLC Project	Swabi - KP	FS	JV
13	Hero Shah Minor	Malakand - KP	DD	JV
14	Embankment and Road Along Left Bank of Swat River From Landaki to Bagh Dheri	Swat - KP	FS	JV
15	Hero Shah Scheme	Malakand - KP	CS	JV
16	Balambat Irrigation Scheme	Dir Upper - KP	FS	Lead
17	Piran Rangmala lift Irrigation	Malakand - KP	FS	JV
18	Flood Protection Works for Dheri Alladand	Malakand - KP	FS	JV
19	Irrigation Supplies to the lands Situated above the alignment of Balambat Irrigation Scheme	Dir - KP	FS	JV
20	Establishment of Rod Kohi development Project in Irrigation Department	D.I. Khan - KP	FS	JV
21	Sheringal Doadba Irrigation Scheme	Dir Upper - KP	FS	Lead
22	Bund on either Side of Swat River to prevent Flooding of Habitats in the vicinity	Swat - KP	FS	Lead
23	Mansehra Irrigation Rehabilitation Project	Mansehra - KP	DD & CS	JV

Major Hydropower Projects

FS: Feasibility Study

DD: Detailed Engineering Design

CS: Construction Supervision

MC: Management Consultant

DR: Design Review

KP: Khyber Pakhtunkhwa

GB: Gilgit Baltistan

JV: Joint Venture

S.No	Project Name	Capacity (MW)	Location	Type	Handled As
1	Mujahideen Hydropower Project	6	Tor Ghar - KP	MC	JV
2	Balakot Hydropwer Project	300	Mansehra - KP	MC	JV
3	Bankhwar Hydropower Project	34	Mansehra - KP	FS	JV
4	Gabral Hydrpower Project	73.41	Mansehra - KP	FS	JV
5	Artistic-1 Hydropower Project	49	Dir Upper - KP	FS	JV
6	Artistic-2 Hydropower Project	43.35	Swat- KP	FS	JV
7	Thakot Hydropower Project	2800	Bisham - KP	FS	JV
8	Warsak Dam 2nd Rehabilitation Hydropower Project	242	Warsak - KP	CS	JV
9	Golen Gol Hydropower Project	108	Chitral - KP	DR & CS	JV
10	Gorkin-Matiltan Hydropower Project	84	Swat - KP	EPC Design	Sole
11	Karora Hydropower Project	11.8	Shangla - KP	EPC Design	Sole
12	Jabori Hydropower Project	10.2	Mansehra - KP	EPC Design	Sole
13	Munda (Mohmand) Dam	740	Mohmand - KP	DD	Associate
14	Khan Khwar Hydropower Project	72	Shangla - KP	MC	JV
15	Duber Khwar Hydropower Project	130	Shangla - KP	MC	JV
16	Alai Khwar Hydropower Project	121	Shangla - KP	MC	JV
17	Gomal Zam Dam Multi-Purpose Project	17.4	South Waziistan - KP	MC	JV
18	Malakand III Hydropower Project	81	Malakand - KP	DD & CS	JV-Lead
19	Chapri-Charkhil HPP	9.5	Kurram - KP	FS	JV-Lead
20	Diamer Bhasha Dam	4500	Gilgit Baltistan	FS	JV
21	Ghorband Hydropower Project	18	Shangla - KP	FS	JV
22	Nandihar Hydropower Project	10.3	Batagram - KP	FS	JV
23	Barandoo Hydropower Project	6	Tor Ghar - KP	FS	JV

Major Roads & Infrastructure Projects

FS: Feasibility Study

DD: Detailed Engineering Design

CS: Construction Supervision


MC: Management Consultant

DR: Design Review

KP: Khyber Pakhtunkhwa

GB: Gilgit Baltistan

JV: Joint Venture

S.No	Project Name	Location	Type	Handled As
1	Birdges, Access Roads and Staff Colony for Jabori Hydropower Project	Mansehra - KP	DD	Single
2	Birdges, Access roads and Staff Colony for Karora Hydropower Project	Bisham - KP	DD	Single
3	Birdges, Access roads and Staff Colony for Gorkin-Matiltan Hydropower Project	Kalam - KP	DD	Single
4	Mohmand Dam Abazai-Yousaf baba Road	Mohmand - KP	DD	JV
5	Diamer Basha Dam Project Confidence Building Measures (Right Bank Periphery Roads, Colony, Water Supply & Sewerage)	Chilas - GB	FS, DD & CS	Lead
6	Survey of 132KV Transmission Lines in GEPCO	Gujranwala Pakistan	Survey	JV
7	Kumrat-Madaklasht (World's longest and highest) Cable Car Project 	Dir-KP	FS	Associate



Clientele



WAPDA



Water & Power Department
Gilgit Baltistan



Kite - KP



Markhor Energy



Diamer Bhasha
Development Company



Irrigation Department - KP



Government of KP



GRC (Pvt) Ltd.



UNHCR



PEDO



INFRACO ASIA



On-Farm Water
Management Deptt.-KP



Artistic Milliners



FATA DA



DHA - Peshawar



GEPCO-Gujranwala

Project Funding Collaborators



ASIAN DEVELOPMENT BANK

Asian Development Bank



THE WORLD BANK

The World Bank



AFD - France



SFD - Saudi Arabia



GIZ - GmbH



KFW Development Bank





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