



COMPANY'S BROCHURE

INTRODUCTION

AEMPL is an ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 accredited company, having more than 15 years of experience in providing Engineering Consultancy Services under large infrastructure projects comprising Renewable Energy Projects (Hydro Electric Projects, Pumped Storage Hydro Projects and Solar Projects); Tunnel Projects; Transmission, Distribution line, Substation projects; Roads and Highways; Buildings; Irrigation; Urban Infrastructure; and Oil & Gas Projects with interests in Transportation Sector.

Our area of expertise lies from concept stage to commissioning stage including “Identification of Green Field Projects”, “Concept planning”, “Preparation and Review of Pre-Feasibility Report, Feasibility Report, Detailed Project Report”, “Assistance in obtaining Statutory Approvals and Clearances”, “Tender Engineering”, “Detailed Design and Engineering”, “Proof Checking”, “Project Management”, “Contract Management”, “Commissioning and Post Commissioning Service”, “technical audits”, “Due Diligence”, “Cost Vetting”, “Geological and Geotechnical Investigations”, “renovation and modernization”, with other services as per the requirements.

The company has been empanelled in some of the esteemed design organizations in the country. The company has been involved in projects in India, Bhutan, Uganda & Rwanda with offices in Delhi, Gurugram, Navi Mumbai, Jammu, Srinagar, Hyauliang, Nongstoin and Sikkim.

AEMPL is involved in design and engineering work of more than 40 numbers of hydroelectric Power projects totalling about 35,000 MW and is committed to significantly contribute to the infrastructure sector in India and abroad.

VISION, MISSION AND OBJECTIVES



Vision

To be a leading Global Engineering and Project Management Consultant for achieving Excellence in Infrastructure and Energy Sector Projects



Mission

Providing complete Engineering & Management Consultancy in Infrastructure and Energy Sector by adopting the Best Engineering Practices for achieving Customer satisfaction



Objectives

To adopt modern technology and systems to build in quality, reliability and accuracy; thereby ensuring customer satisfaction.

To adopt international standards in surveys, designs, cost estimates, project planning, including environmental studies and project management services for cost – effective and integrated development of Water Resources, Power and Infrastructure Projects.

CORE VALUES



QUALITY

We strive to provide Civil Engineering Consultancy Services to facilitate our Clients at most economical rates with absolutely no compromise to quality by conforming to national and international standards and codes through continual improvement of our systems and process



PEOPLE

The expertise, passion and thought leadership of our talented people around the world make our success possible. We respect and encourage our people's ideas, diversity and cultures.



INTEGRITY

We always maintain our Commitment by acting Ethically and with integrity – in all that we do, every day of the year.



INNOVATION

We differentiate our company by challenging ourselves to look for new and better ways to deliver our expertise through innovative solutions that enable each client to realize its vision.



EXCELLENCE

We believe in delivering Unequivocal excellence in Everything that we do.



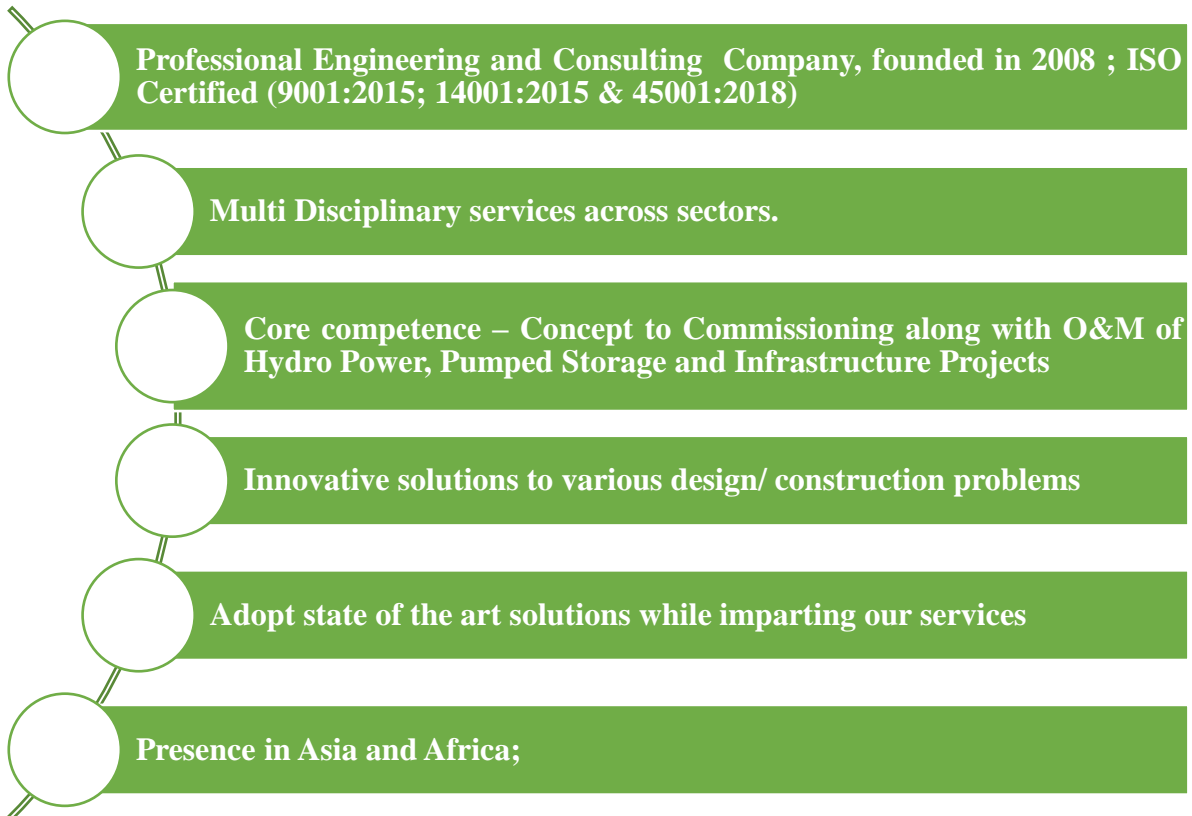
CLIENTS

We are committed to our clients and to setting industry standards for service and delivery. We take ownership for solving our clients' problems and anticipating new opportunities.

BOARD OF DIRECTORS

S. No.	Name of Board of Directors	Position
1	Mr. Rajasekhara Babu Nalluri	Managing Director
2	Mr. Radhakrishna Pavuluri	Director
3	Mr. Pradeep Kumar Dadhich	Director
4	Mr. Kunanakandy Tenai Manohar	Director

ABOUT US



SECTORAL PRESENCE



HYDRO AND PUMPED
STORAGE



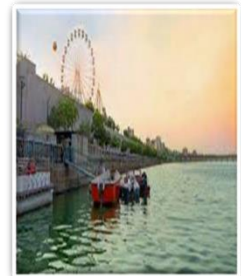
TUNNEL



TRANSMISSION/
DISTRIBUTION / SUB-
STATIONS



OIL & GAS



TOURISM



URBAN INFRA



BUILDINGS

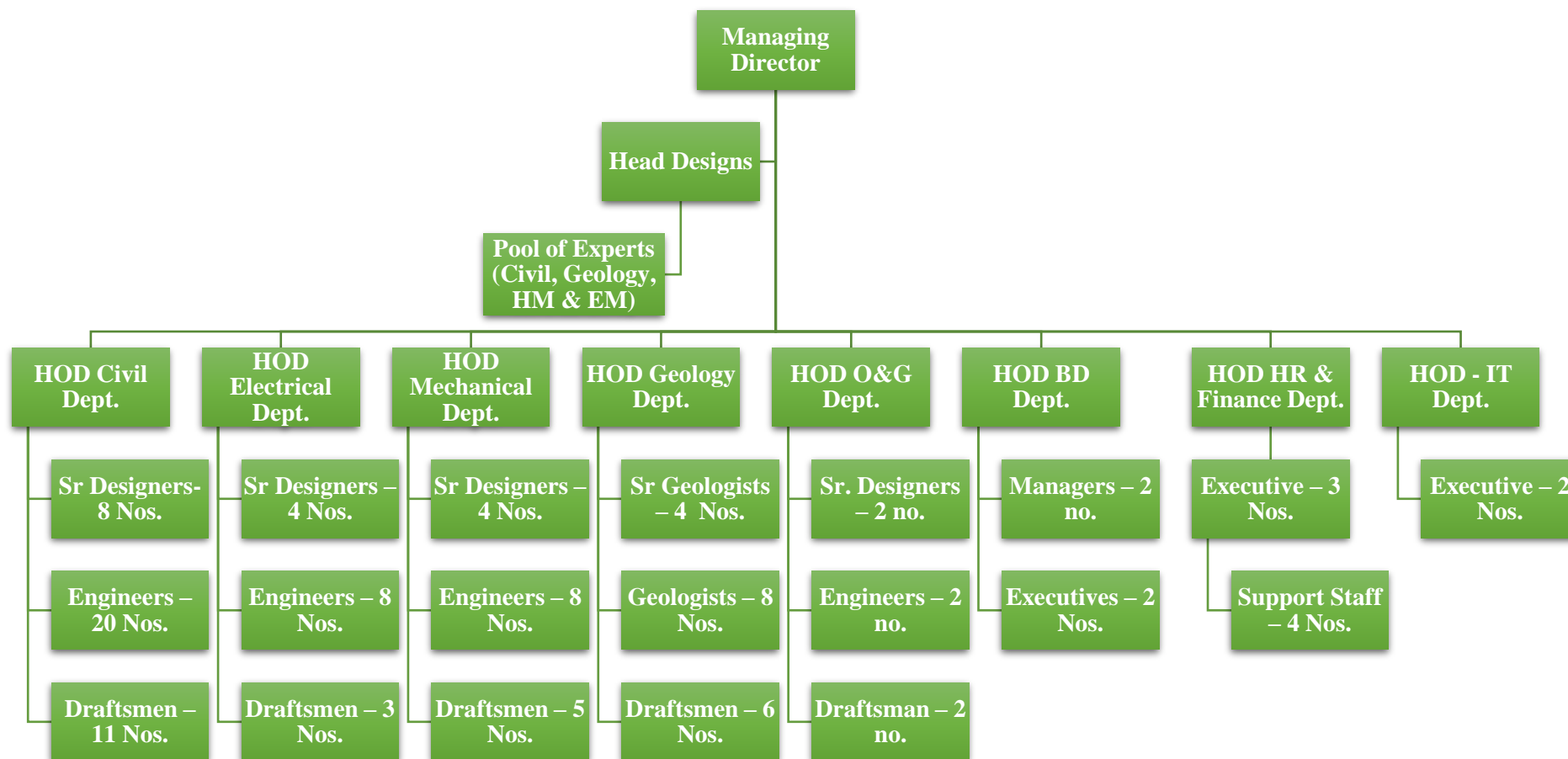


ROADS & BRIDGES



IRRIGATION

ORGANIZATION CHART



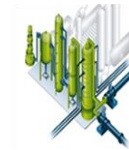
AEMPL DEPARTMENTS



Civil Design &
Hydraulics Dept.



Hydrology
Engineering Dept.



Oil & Gas
Engineering Dept.



Hydro-Mechanical
Engineering Dept.



Electro-Mechanical
Engineering Dept.



Project
Management Group



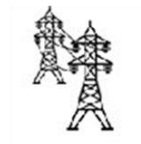
Road & Highways
Engineering Dept.



Geology & Rock
Engineering Dept.



Procurement Group



Transmission
Engineering Dept.



UG Work – Blast
Design Dept.



Legal, Finance &
Economic Analysis



Water Resource
Engineering Dept.



Field Investigation
Group



Cost Engineering &
Construction
Planning

GEOGRAPHICAL PRESENCE

Corporate Office



New Delhi

Design Office



Gurgaon

Site Offices



**Mumbai,
Navi Mumbai,
Aurangabad,
Sikkim
Jammu & Kashmir
Hyauliang
Nongstoin**

Kampala

KEY RESOURCES

The company possesses some of the most experienced personnel in their respective fields and ably supported by engineers and support staff who ensure quality and timely delivery of projects. The Company is manned by highly experienced professionals having worked earlier in prestigious organizations like CEA, CWC, SJVNL, NEEPCO, NHAI, DVC, NHPC, GSI, CWPRS etc.

Backed by a team of key specialists and professionals, the company is equipped to deliver services for large/ small hydro power, Roads, Highways & Bridges, Irrigation, Water Resources, Oil & Gas, Water Infrastructure and other Infrastructure projects. The core team of AEMPL comprises more than 120 numbers of qualified and skilled professionals including technical manpower.

AREA OF SPECIALIZATION

- Identification of Greenfield Projects
- Concept to Commissioning Engineering Services.
- Pre-feasibility Reports and Due diligence etc.
- Site selection, Planning and supervision of field investigation, Geological and Geo-technical investigations, construction material survey and reserve estimation
- Detailed Project Reports and obtaining Techno Economic Clearance (TEC).
- Tender Stage designs and Tender documents of Civil, HM and E & M Packages.
- Preparation of Bid Documents
- Detailed designs and construction drawings
- Supervision of Hydraulic model studies
- Construction supervision, construction management and Quality Assurance & Quality Control.
- Review of Detailed Project Report/Feasibility Studies Report, Tender Documents and Detailed Design
- Erection, Pre commissioning, commissioning and Post commissioning services
- Engineering services for operation and maintenance
- Restoration & rehabilitation services
- Contract Management Services
- Technical Audit
- Vetting of Capital Cost and Financial Analysis
- Vetting of Project Completion Cost, Time and Cost Over-run
- Vetting of Contractor's Claims
- Technical Support for forensic investigations

EMPANELMENTS



Export – Import Bank of India



Indian Renewable Energy Development Agency



Central Electricity Authority



Central Electricity Regulatory Authority



North Eastern Electric Power Corporation Limited



Power Finance Corporation Consulting Ltd.



Power Grid Corporation of India

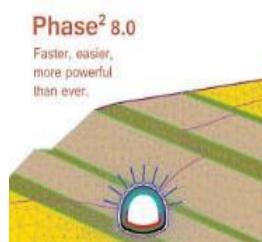


Maharashtra Electricity Regulatory Commission



कोंकण रेलवे कॉर्पोरेशन लिमिटेड
(भारत सरकार का उपक्रम)
Konkan Railway Corporation Limited
(A Govt. Of India Undertaking)

SOFTWARE APPLICATIONS



RSLog

**AUTOCAD
CIVIL 3D**

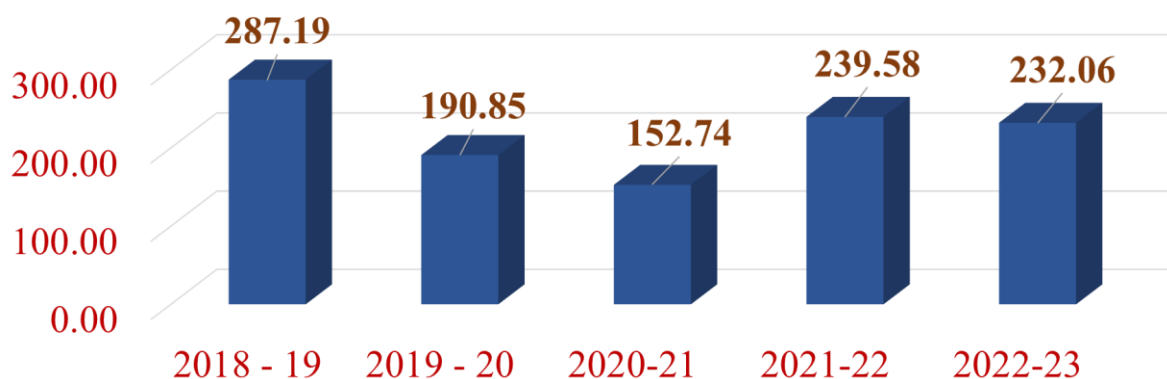
Office

A AutoCAD 2023

P Project



ANNUAL TURNOVER DETAILS (in Million INR)



Average Turnover for last 5 FYs: INR 220.48 Million

OUR MAJOR CLIENTELE



PROJECTS' PROFILE

HYDRO POWER – Completed Projects

Name: Teesta-III Hydro Power Project (1200 MW), Sikkim, India

Client: Teesta Urja Limited & WAPCOS

Year: 2008 – 2011 & 2015 – 2020

Cost: INR 13,965 Crore

Features: The Project utilizes a gross head of 817 m and design discharge of 175 cumecs for generation of 1200 MW. The Project comprises a 60 m high Concrete Faced Rockfill Dam, two de-silting basins of 17 m x 23 m x 320 m; 30 km long 7.5 m diameter HRT, 15.5 m diameter circular surge shaft of 160 m height, 1806.67 m long & 2 nos. of 4 m diameter pressure tunnels including vertical shaft and inclined shaft of length about 1650 m. An underground power house housing 6 units of 200 MW. A 1.2 km long 8.2 x 8.0 m tunnel. The work also comprised Hydel civil structures, buildings, roads and bridges including permanent access tunnels, culverts, storm drainages, ducts/tunnels for XLPE power cables and associated Hydro-mechanical and Electro-Mechanical works.



Scope:

- To study and evaluate the construction design/ drawing from the point of view of construction suitability to site condition.
- Review the works under execution with the objective to achieve the scheduled progress.
- Review the Construction & Equipment Planning.
- Review the implementation of QA/ QC program implemented by the contractor and engineering agency.
- Detailed Design Service for balance works
- Construction supervision services on behalf of WAPCOS during execution of the Project including supervising construction, equipment installation and commissioning with a supervision team, undertaking quality assurance on the site and oversee the contractors' quality control systems, provide expertise as needed on site on a case by case basis. Review the Construction & Equipment Planning.
- Vetting of Contractor Claims for the Project
- Preparation of DPR of Dam Toe Power House for the Project

Status: The Project was successfully commissioned in Feb 2017.

Name: Demwe Lower Hydro Power Project (1750 MW), Arunachal Pradesh, India

Client: Athena Demwe Power Limited

Year: 2011 – 2017

Cost: INR 13,144.91 Crore

Features: Demwe Lower Hydro Electric Project has been contemplated as a run of the river scheme situated in the Lohit district of Arunachal Pradesh. The Dam site is located on River Lohit, upstream of Parasuram Kund. The Project will utilize a gross head of 120.00m and design discharge of 1729 cumecs for generation of 1750 MW. The Project comprises a 163 m high Concrete Gravity dam, five numbers of 10.0 m diameter pressure shafts of 450 to 600 m long. A surface power house housing 5 units of 342 MW each and one 40 MW. Design Energy is 6322 MU in 90% dependable year.



Scope:

- Engineering Consultancy Services for Pre-construction stage investigations & Techno-economic optimization of the Project Layout, Detailed Design & Engineering Services

Status: Services Completed.

PROJECTS' PROFILE

HYDRO POWER – Completed Projects

Name: Kynshi - I Hydro Power Project (270 MW), Meghalaya, India

Client: Athena Kynshi Power Private Limited

Year: 2013 – 2015

Cost: INR 3,154.38 Crore

Features: The Kynshi - I Hydro Electric Project has been envisaged as a run-off river scheme situated in the West Khasi Hills district of Meghalaya. The Project will utilize a gross head of 581.00 m and design discharge of 54.86 cumecs for generation of 270MW. The project comprises a 58.10 m high Concrete Gravity dam, 6.89 km long & 4.5 m diameter Head Race Tunnel, 67.5 m high & 8.5 m diameter surge shaft. An Underground Power House of size 70 m length, 16.5 m wide and 42 m high, housing 2 units of 135 MW. A 2.5 km long 5.25 m diameter tail race tunnel conveys back the water back to River Kynshi after power generation. The Power generated at Kynshi HE Project shall be evacuated by one 400KV twin moose transmission line taking off from the pothead yard to the pooling point (Bongaigaon) having a total length of 70 km. Total length of 400 KV XLPE cable is 1.5 km



Scope:

- Preparation of Detailed Project Report including Project Engineering, Geology, Cost Estimation and Drawings volumes including salient features, basin development, survey and investigations, hydrology, power potential studies, design of civil structures, electro-mechanical and hydro-mechanical design.

Status: Services Completed. Techno-Economic Clearance of the project has been received on May 2015.

Name: Preparation of Detailed Project Report for:

- ❖ Nimu Chilling Hydro Power Project (24 MW), Ladakh, India
- ❖ Mangdum Sangra Hydro Power Project (19 MW), Ladakh, India
- ❖ Durbuk Shyok Hydro Power Project (19 MW), Ladakh, India
- ❖ Sankoo Hydro Power Project (18.5 MW), Ladakh, India

Client: J&K State Power Development Corporation Limited

Year: 2017 – 2019

Cost: INR 482.22 Crore | INR 261.15 Crore | INR 278.03 Crore | INR 267.06 Crore

Scope:

- Planning, Survey and Geotechnical Investigation activities; Preparation of Detailed Project Report including BoQ and Cost Estimation along with drawings, basin development, hydrology, power potential studies, design of civil structures, electro-mechanical and hydro-mechanical design, environmental aspects and financial evaluation of the project acceptable to the relevant regulatory authorities. Work also included Environmental Impact Assessment (EIA), preparation of Environment Management Plan (EMP) and studies related to power evacuation and transmission. Mathematical model studies for sedimentation for IWT clearance and seismic studies.

Status: Services Completed. Techno-Economic Clearance of the project has been received in 2019.



PROJECTS' PROFILE

HYDRO POWER – Completed Projects

Name: Sorang Hydro Electric Project (100 MW), Himachal Pradesh, India

Client: Himachal Sorang Power Private Limited

Year: 2017 – 2021

Features: The project has been developed on Sorang Khad, a right bank tributary of River Sutlej near Sorang Dongri Village in Nichar Tehsil of Kinnaur District of Himachal Pradesh for the installed capacity of 100 MW. The construction of the project has been completed in 2013. However, during initial filling of the steel lined pressure shaft, the steel liner failed in the bottom horizontal reach. Therefore, the entire vertical and bottom horizontal pressure shaft up to Y-piece has been relined with steel liner. Subsequently, during the commissioning of the project, the surface penstock failed / burst between anchor blocks 5 & 7. The Client had decided to carry out review the project components and reconstruct the damaged penstock works for the project

Scope:

- Review Engineering
- Design and Detailed Engineering Work of Penstock / Pressure Shaft comprising proposal for various alternate arrangement either in surface or underground for the replacement of damaged penstock along with valve and surge shaft; Detailed Construction Methodology; Preparation of Technical Specifications, Review of Fabrication and Erection Drawings; Methodology for dismantling existing penstock; Quality Assurance Plan for New Penstock / Pressure Shaft
- Techno-Economic Feasibility, Design and Detailed Engineering Works of Balancing Reservoir



Name: Integrated Kashang Hydro Electric Project (195 MW), Himachal Pradesh, India

Client: Himachal Pradesh Power Corporation Limited

Year: 2020 – 2021

Features: Capacity: 195 MW (Integrated); Gross Head: 821 m; Nominal Discharge: 27 cumecs; Underground Powerhouse: 3 units of 65 MW each; Trench Weir & Balancing Reservoir; Head Race Tunnel: 2 km (length) and D Shaped; Pressure Shaft of total 1300 m length. The first stage of 65MW is comprising a diversion of the Kashang stream at El. 2829 m to an underground powerhouse located on the right bank of Satluj near Powari Village, developing a head of approximately 830m. The second and third stages of 130MW are comprising a diversion of the Kerang stream, at El. 2872m into an underground water conductor system leading to upstream end of first stage water conductor system, augmenting the generating capacity of first stage powerhouse, using Kerang waters over the 820m head available in the first stage powerhouse.

Scope:

- Specialized Agency for Carrying out Consultancy / Rectification job of Pressure Shaft



PROJECTS' PROFILE

HYDRO POWER AND DAMS – Ongoing Projects

Name: Ayago Hydro Power Project (600 MW), Uganda

Client: Ministry of Energy and Mineral Development

Year: 2015 - Ongoing

Cost: US \$ 1.6 Billion

Features: The Project will utilize a gross head of 80.0 m and design discharge of 1087 Cumecs for generation of 600 MW. The Project envisages 24 m high concrete dam, 6 Nos. of intake on left bank of Nile River feeding 6 Nos. of 7.1 m circular shaped pressure shaft, Underground power house of size 150m length, 21.3m wide & 52.10m high housing 6 units of 133.33 MW and 3 Nos. of 13 (W) x 16 (H) m D-shaped, 9 km long Circular Tail Race Tunnel. Head works System with a 15m high concrete gravity weir and a dyke intercepting a hill in between the two structures. Power will be evacuated through 400 KV double circuit transmission line from Ayago Hydro power station to Karuma substation (total length 60 km)

Scope:

- To review the detailed feasibility study reports of Ayago hydropower project and the associated evacuation transmission line to ensure sound and environmentally friendly engineering designs; Prepare ToRs (Employer's Requirements and specifications) for the EPC Contract; Review proposals submitted by the Contractor (Technical, Financial, Social and Environmental implementation); Prepare and advise GOU on the key negotiation issues; Participate in the negotiation of the proposals and Draft EPC contract and Advise GOU in the negotiation process of the EPC Contract; To carry out supervisory and oversight activities during the construction of Ayago Hydro Power Project and the associated evacuation transmission line works; To carry out quality control and quality assurance, inspections, testing and commissioning of all aspects of the Ayago Hydro Power Plant and the associated evacuation transmission works; Rectification of defects after commissioning; Trainings to MEMD Officials

Status: Ongoing



Name: Kondhane Dam Project, Maharashtra, India

Client: City and Industrial Development Corporation

Year: 2019 – Ongoing

Cost: INR 325.99 Crore

Features: Kondhane Water Supply Dam Project is primarily a drinking water project including construction of 74 m high Concrete Faced Rock Fill Dam (CFRD) and outlet arrangement for irrigation and water supply / hydro power with intake structure and captive hydro power plant. The capacity of the reservoir shall be 105.97 MCM out of which 10.55 MCM shall be released for irrigation purpose.

Scope:

- Preparation of Detailed Project Report (DPR) including outlet arrangement for Irrigation and Water Supply / Hydro Power with intake structure and captive hydro power plant. In Design Phase:- Project Engineering, Geology, Cost Estimation and Drawings volumes including salient features, survey and investigations, hydrology, design of civil structures, electro-mechanical and hydro-mechanical design, financial evaluation of the project acceptable to the relevant regulatory authorities. Preparation of R & R plan and obtaining statutory clearance from all the concerned departments for taking up the project. Preparation of bid document and its evaluation. Preparation of the Construction drawing for execution, scrutiny of variations, study of time cost overrun and periodic inspection of the execution of work & Quality Control / Quality Assurance services.

Status: Ongoing (DPR has been submitted)



PROJECTS' PROFILE

HYDRO POWER – Ongoing Projects

Name: Malana Stage - II Hydro Power Project (100 MW), Kullu, India

Client: Everest Power Private Limited

Year: 2016 - Ongoing

Cost: INR 598.80 Crore

Features: The Malana II hydro Electric project is constructed on the Malana Nallah (tributary of the Parbati river, which itself is a tributary of Beas river) and utilizes a gross head of about 626m and to generate 100 MW of power. The power house is located on the left bank of the Malana Khad. The dam is situated 10 km upstream of the Malana II power house.

Scope:

- Geological & Geotechnical investigations and studies for providing inputs for repair and maintenance for civil works; Post completion of the project a major structure of concrete spillway was envisaged and ordered to be constructed by the Regulatory Authorities for ensuring Dam safety.
- Aquagreen was entrusted the complete design of this new project which included plant reconnaissance visit for collection of data, Assessment of project layout and designs as provided in the original DPR. Preparation of Detailed Project Report for provision of Additional Surface Spillway, Design Engineering and issuing of construction Drawings, Project Management and monitoring, Preparation and submission of As-Built Drawings; Construction Supervision of all project components



Name: Demwe Upper Hydro Power Project (1080 MW), Arunachal Pradesh, India

Client: Lohit Urja Power Private Limited

Year: 2014 – Ongoing

Cost: INR 6855.09 Crore

Features: The Demwe Upper Hydro-electric Project is located in Anjaw District of Arunachal Pradesh on Lohit river. The proposed project site is 80 km away from Tezu which is District HQ of Lohit. The Dam site is located about 12.8 km downstream of confluence of Dalai River and underground Powerhouse is located on right bank of Lohit River at 150m downstream of the dam axis. The average river bed level at the dam site is about EL 440.00 m and FRL at the dam has been proposed at EL 525.00 m. The project consists of 131.0 m high composite dam, 5 nos. of 14m diameter diversion tunnel with upstream and downstream coffer dams, 5 nos. of 10.0 m dia. pressure shaft length varies from 150.0 m to 285.0 m, an underground powerhouse of 228 m length, 23m wide and 63m high having 5 units of 206 MW and 1 unit of 50 MW.

Scope:

- Pre-construction activities including supervision of investigations for the project; finalization of DPR including cost estimation, project economics and technical assistance in concurrence of the DPR by the competent authority and technical assistance in obtaining of other statutory clearances; tender design, bid and award services of the project; Environmental studies; Hydrological and Geology Studies; Engineering design and drawings; Preliminary project construction schedule; Preparation of tender document for EPC contractor, assisting Client in evaluation and contract award process; Contract Management and resolution of post award issues; Financial closure of the project.



PROJECTS' PROFILE

HYDRO POWER – Ongoing Projects

Name: Preparation of Detailed Project Report for:

- ❖ Irang 3 Hydro Power Project (46.50 MW) Irang Basin, Manipur
- ❖ Ijai Hydro Power Project (28.70 MW) Ijai Basin, Manipur
- ❖ Barak 3 Hydro Power Project (26 MW) Barak Basin, Manipur
- ❖ Irang 1 Hydro Power Project (13 MW) Irang Basin, Manipur
- ❖ Nungbut Hydro Power Project (10 MW) Barak River, Manipur
- ❖ Imphal Hydro Power Project (28.30 MW) Manipur Basin, Manipur
- ❖ Chakpi Hydro Power Project (3.12 MW) Manipur Basin, Manipur
- ❖ Khuga Hydro Power Project (0.44 MW) Khuga River, Manipur

Client: Manipur State Power Company Limited

Year: 2021 - ongoing

Scope:

- Planning, Survey and Geotechnical Investigation activities; Preparation of Detailed Project Report including BoQ and Cost Estimation along with drawings, basin development, hydrology, power potential studies, design of civil structures, electro-mechanical and hydro-mechanical design, environmental aspects and financial evaluation of the project acceptable to the relevant regulatory authorities. Work Also included Environmental Impact Assessment (EIA), preparation of Environment Management Plan (EMP) and studies related to power evacuation and transmission. Mathematical model studies for sedimentation for IWT clearance and seismic studies.



Name: Comprehensive Contract Management Services for implementation of EPC Contract for Construction of 12 MW Karnah HEP in Kupwara District, Kashmir, India

Client: Jammu and Kashmir State Power Development Corporation Limited

Year: 2019 – Ongoing

Cost: INR 96,96,70,000

Features: The J&K State Power Development Corporation intends to implement 12 MW Karnah Hydro Electric Project under Prime Minister's Development Package -2015 (PMDP-2015) in Jammu and Kashmir State. The Karnah Hydroelectric Power Project (12 MW) with Installed capacity of 3x4 MW is situated at the stream named Quazi Nag at the Basin of Kishan Ganga near village Khudri in Tehsil- Karnah, District-Kupwara, Jammu & Kashmir corresponding to a design discharge of 13.47 cumecs and design head of 98.58 m.

Scope:

- Review of contractors design, Supervision of construction of Civil, Hydro Mechanical/ Electro Mechanical works. Supervision of manufacture of equipment, Management of contractor's claims, Assurance of Quality control.



PROJECTS' PROFILE

PUMPED STORAGE / HYDRO POWER – Ongoing Projects

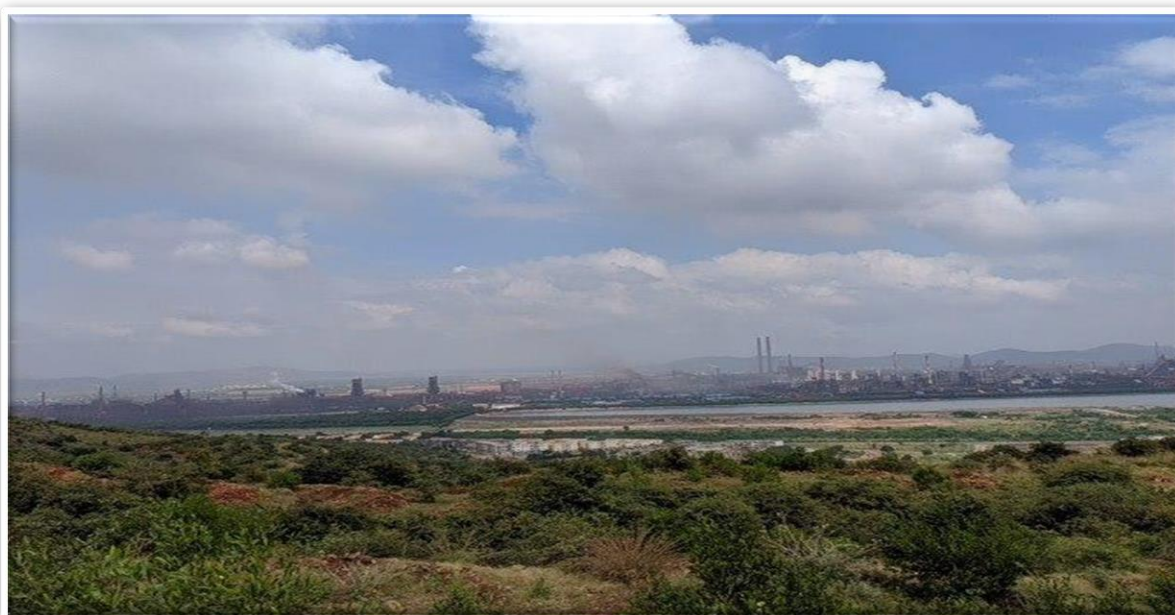
Name: Consultancy services for preparation of Detailed Project Report for 130 MW Vijayanagar pumped storage project in Vijayanagar, Karnataka, India

Client: JSW Hydro Energy Limited

Year: 2021 – Ongoing (DPR submitted to Statutory Authorities for Approval)

Scope:

- To prepare the scope of works for topographical survey, geotechnical investigations, and laboratory tests as per CEA guidelines; and help the Owner in finalization of agencies for the above works. In addition, the consultant shall check the deliverables for their use in preparation of DPR.
- Assessment of Project's Hydrology & power potential studies
- Assessment of Site Geology and Geological Mapping, & Preparation of Geological Maps required for completion of Geological chapter.
- Monitoring of surface and sub-surface explorations, Interpretation and Incorporation of data for studies of optimization of layout.
- DPR level Design of Civil Structures for various components of the Project.
- DPR level Design of Electro-mechanical works.
- Review of Site-Specific Seismic Parameter Study Report for the project including recommendations for the design.
- Review of details of construction materials availability, Engineering Properties and its test results and finalization of the same.
- Preparation of Construction Program and Plant Planning.
- Preparation of Construction Methodology.
- Preparation of Project Organization and Infrastructure facilities.
- Preparation of Detailed Cost Estimates for the project components of Civil, Hydro-Mechanical and Electro-Mechanical Works including Transmission line.
- Financial and Economic analysis of the project as per CERC guidelines.
- Preparation and Submission of Feasibility Report (FR) for Phase – 1, if required by CEA prior to submission of DPR.
- Preparation of Detailed Project Report as per CEA/CWC/GSI/CSMRS guidelines.
- Technical Assistance and presentations to Owner/CEA/CWC/Lenders/Lender's Engineers till approval/concurrence from the CEA/Statutory approvals.



PROJECTS' PROFILE

PUMPED STORAGE / HYDRO POWER – Ongoing Projects

Name: Preparation of Detailed Project Reports of Sukhpura Standalone Pumped Storage Project (2560 MW), Chittorgarh, Rajasthan

Client: Greenko Group

Year: 2022 – Ongoing

Scope:

- Preparation, Submission, Processing and Approval of Detailed Project Report (DPR) as per CEA/CWC/GSI/CSMRS guidelines till obtaining final Techno - Economic Clearance including stage wise preparation/ Submission of reports as per procedures laid down by CEA for grant of TEC.
- Scope of work includes assessment of Site Geology, physical geological mapping, preparation of geological maps and other details required for the completion of Geological Chapter.
- Surface & Sub surface exploration, monitoring of exploration, interpretation of data, incorporation of data for studies of optimization of layout and preparation of complete Geological Chapter including drawings/studies etc. is in the scope of consultant.
- Attending and amending of the reports based on statutory authority's observations including presentations / following up with all statutory associates with grant of TEC, till grant of TEC.
- Support for Presentations to all statutory authorities, board management, bankers or any authority where client is required to present the DPR during preparation or post preparation stage.
- Surface and Subsurface exploration / investigation plan. Review / Monitoring of site investigation /exploration works, and other essential/ associated studies required for the completion of DPR.
- Study of all possible Alternative layout options with preliminary designs, drawings and their costs/Technical comparisons.
- For all alternative layouts, Choice of Alternative Civil Structures, H&M options and E&M possibilities with their Cost/ Technical comparisons.
- Elaboration of Construction Program and plant planning including Construction Methodology for all critical and main components.
- Review of all documents supplied by the client and incorporation of the same in the DPR.
- Support for selection of suitable construction material sites and Review of Test reports for suitability thereof.

Name: Detailed Design and Preparation of Construction Drawings for 7.5 MW Mini Central Hydroelectric Power Projects at Djenne, Republic of Mali

Client: Aar Ess Exim Private Limited (AEEPL)

Year: 2022 - Ongoing

Scope: Detailed Design and Preparation of Construction Drawings / As Built Drawings of following project components:

- Cofferdam
- **Intake Structure**
- Power House Building
- Tail Race Channel
- Switchyard Foundation
- 2 no. of 100 sq. m. area Buildings



PROJECTS' PROFILE

Name: Kynshi Stage II Pumped Storage Project (11254 MW) in Meghalaya, Run-off River, Solar Integrated Renewable Power Scheme

Year: Nov. 2021

Features:

Lower Reservoir

Live Storage: 66.75 MCM; **Lower Dam:** Roller Compacted Concrete Dam of 418.4 m length at top and 180 m height above deepest foundation level; **Pressure Shaft:** 1 no.; 4.5 m diameter, Circular shaped, Steel Lined; 3 unit Penstocks; **Surface Powerhouse:** 39.05 m (L) x 16.00 m (W) x 32.3 m (H); **Turbine:** Vertical Francis (3 no. of 30 MW); **Installed Capacity:** 90 MW; **Tail Race Channel:** 115 m (L) x 39.05 m (W)



Upper Reservoir 1

Storage: 8.41 MCM; **Dam:** Concrete Faced Rockfill Dam of 1716 m length at top and 30 m height; **Pressure Shaft:** 3 no. (Main) and 6 no. (Unit); 6.5 m diameter, Circular Steel lined; **Underground Power House:** 192.175 m (L) x 23.0 m (W) x 48.44 m (H); **Main Access Tunnel:** 8.0 m diameter, D-shaped tunnel of 1063.0 m length; **Turbine:** Vertical Reversible Francis (6 units of 292 MW each); **Installed Capacity:** 1752 MW; **Tail Race Tunnels:** 3 no. Horseshoe Shaped Tunnels of 7 m diameter with 2488.0 m average length

Upper Reservoir 2

Storage: 19.76 MCM; **Dam:** Concrete Faced Rockfill Dam of 3088 m length and 30 m height; **Pressure Shaft:** 5 no. (Main) and 10 no. (Unit); 7.5 m diameter, Circular Steel Lined; **Underground Powerhouse:** 311.275 m (L) x 26.0 m (W) x 51.24 m (H); **Main Access Tunnel:** 8.0 m diameter, D-shaped tunnel of 742 m length; **Turbine:** Vertical Reversible Francis (10 units of 328 MW each); **Installed Capacity:** 3280 MW; **Tail Race Tunnels:** 5 no. (Main) and 10 no. (Unit) Horseshoe shaped tunnels of 8 m diameter

Upper Reservoir 3

Storage: 17.54 MCM; **Dam:** Concrete Faced Rockfill Dam of 2527 m length and 30 m height; **Pressure Shaft:** 3 no. (Main) and 6 no. (Unit); 9.5 m diameter, Circular Steel lined; **Underground Powerhouse:** 241.175 m (L) x 29.0 m (W) x 52.78 m (H); **Main Access Tunnel:** 8.0 m diameter, D-shaped Tunnel of 575.0 m length; **Turbine:** Vertical Reversible Francis (6 units of 315 MW each); **Installed Capacity:** 1890 MW; **Tail Race Tunnels:** 3 no. (Main) and 6 no. (Unit) Horseshoe shaped Tunnels of 10 m diameter and 140.5 m average length

Upper Reservoir 4

Storage: 22.43 MCM; **Dam:** Concrete Faced Rockfill Dam of 4223 m length and 30 m height; **Pressure Shaft:** 4 no. (Main) and 12 no. (Unit); 9 m diameter, Circular Steel Lined; **Underground Powerhouse:** 346.325 m (L) x 25.0 m (W) x 50.16 m (H); **Main Access Tunnel:** 8 m diameter, D-shaped Tunnel of 1181.5 m length; **Turbine:** Vertical Reversible Francis (12 units of 322 MW each); **Installed Capacity:** 3864 MW; **Tail Race Tunnels:** 4 no. Horseshoe shaped Tunnels of 10 m diameter and 2075 m average length

Scope:

- Preparation of Topographical map for desk studies for preliminary planning
- Planning and engineering of PSP and RoR Hydro scheme
- Planning and engineering of Floating Solar Scheme
- Cost Estimation and Financial Analysis
- Preparation of Pre-Feasibility Report
- Preparation of Detailed Project Report
- Obtaining Concurrence of TEC

Status: Ongoing (Pre-Feasibility Report Submitted)

PROJECTS' PROFILE

Name: Kynshi Stage I Pumped Storage Project (2557 MW) in Meghalaya, Run-off-River, Solar Integrated Renewable Power Scheme

Year: Nov. 2021

Features:

Upper Reservoir (Live Storage): 16.6 MCM; Lower Reservoir (Live Storage): 17.24 MCM; 2 no. Diversion Tunnel (Horseshoe shaped) of 10.5 m diameter of lengths 862.98 m and 758.69 m; Dumped Rockfill Cofferdam of height 30 m at upstream and 15 m at downstream; Concrete Faced Rockfill Upper Dam of 30 m height and 6337 m length; Roller Compacted Concrete Gravity Lower Dam of 135.21 m height and 402.55 m length; 3 no. Pressure Shaft (Steel lined) of Pumped Storage Scheme of 9.5 m diameter and 1342 m length; 9 no. Penstocks of 6.8 m diameter (3 bifurcations of 46.7 m length and 6 bifurcations of 57.0 m length); 1 no. Penstock (Circular Shaped, Steel lined) for ROR Scheme of 5 m diameter and 297 m length; 3 no. Unit penstock of 3.5 m diameter (2 bifurcations of 32 m length and 1 bifurcation of 27.38 m length); Underground Powerhouse for Pumped Storage Scheme of size 278.25 m (L) x 25 m (W) x 59.87 MW (H); Installed Capacity: 2358 MW; Vertical Shaft Francis turbines (9 units of 262 MW); Surface type Powerhouse for ROR Scheme having size of 77 m (L) x 28 m (W) x 30 m (H) with Installed Capacity of 90 MW and Vertical Francis turbines (3 units of 30 MW); 3 no. of Main TRT (Circular Pressure Shaft) for PSP having 99.52 m length and 9.5 m diameter ; 9 no. of TRTs (Circular Pressure Shaft) having 6.8 m diameter

Scope:

- Preparation of Topographical map for desk studies for preliminary planning
- Planning and engineering of PSP and RoR Hydro scheme
- Planning and engineering of Floating Solar Scheme
- Cost Estimation and Financial Analysis
- Preparation of Pre-Feasibility Report
- Preparation of Detailed Project Report
- Obtaining Concurrence of TEC

Status: Ongoing (Pre-Feasibility Report Submitted)



PROJECTS' PROFILE

HYDRO POWER – Ongoing Projects

Name: Naba Hydro Power Project (1105 MW), Arunachal Pradesh, India

Client: Andra Power Pvt. Ltd.

Year: 2020

Features:

Naba H.E. Project is located in upper reaches of Subansiri River, Arunachal Pradesh. The average river bed level at the dam site is about 870 m and FRL at the dam has been proposed at EL.1035 m. The Project will utilize a gross head of 245 m and design discharge of 468.22 cumecs for generation of 1105 MW.

Scope:

- Preparation of hydrological studies including water availability, design flood and diversion flood studies.
- Power Potential Studies has been carried out in assessing the installed capacity of project.
- Preparation of Pre-feasibility and Detailed Project Report stage design, drawings, and report for Civil, Hydro-mechanical, and Electro-Mechanical components.
- Cost Estimation and Financial Analysis has done at Pre-feasibility stage

Status: Ongoing



Name: Niare Hydro Power Project (1000 MW), Arunachal Pradesh, India

Client: Andra Power Pvt. Ltd.

Year: 2020

Features:

Niare H.E. Project is in upper reaches of Subansiri River, Arunachal Pradesh. The average riverbed level at the dam site is about 1200 m and FRL at the dam has been proposed at EL.1280 m. The Project will utilize a gross head of 228 m and design discharge of 407.50 Cumecs for generation of 1000 MW.

Scope:

- Preparation of hydrological studies including water availability, design flood and diversion flood studies.
- Power Potential Studies has been carried out in assessing the installed capacity of project.
- Preparation of Pre-feasibility and Detailed Project Report stage design, drawings and report for Civil, Hydro-mechanical and ElectroMechanical components of Niare HEP.
- Cost Estimation and Financial Analysis has done at Pre-feasibility stage.

Status: Ongoing



PROJECTS' PROFILE

Name: Ukai Pumped Storage Project (2400 MW), Gujarat, India

Client: Greenko Energy Projects Private Limited

Year: 2022

Features:

Upper Reservoir: (Live Storage: 1.39 TMC; Gross Storage: 2.23 TMC)

Upper Dam: (Type: Rockfill Embankment with Central Clay Core; Height: 70 m; Length: 11468 m)

Lower Reservoir: (Live Storage: 1.38 TMC; Gross Storage: 2.13 TMC)

Lower Dam: (Type: Rockfill Embankment with Central Clay Core; Height: 45 m; Length: 1453 m)

Powerhouse: (Type: Surface; Dimensions: 220 m x 24 m x 51.1 m)

Penstock / Pressure Shafts: (Type: Finished Steel lined (circular); Number of Pressure Shaft: 8 no. Of Independent Penstocks; Diameter of Penstock: 7 m; Length of Penstock: 1105 m)

Tail Race Tunnel: (Type: Concrete lined Circular); No. Of Tunnel: 8; Dia. Of tunnel: 8 m; Length of Tunnel: 25 m)

Electro-Mechanical Equipment: (Pump Turbine: Francis type, vertical shaft reversible pump turbine; Total no. Of units: 8 no. (8 x 300 MW))

Two 400 kV Double Circuit Transmission Lines of length 109 km (approx.) from PSP will be connected to 400 kV/765 kV GIS, Kumetha -1 PGCIL Substation Gujarat State (Village Crossing)

Scope:

- Preparation, Submission, Processing Approval of Detailed Project Report (DPR) as per CEA/CWC/GSI/CSMRS guidelines till obtaining final Techno-economic Clearance including stage-wise preparation / Submission of reports as per procedures laid down by CEA for grant of TEC
- Assessment of Site Geology, Physical Geological Mapping, Preparation of Geological Maps and other details required for the completion of Geological Chapter
- Monitoring of Surface and Sub-Surface Exploration, Interpretation of data, incorporation of data for studies of optimization of layout and preparation of complete Geological Chapter including drawings/studies etc.
- Attending and amending the above reports based on the comments provided by the Owner's review Consultant and statutory authorities time to time including presentations / following up with all statutory associates with grant of TEC, till grant of TEC
- Support for presentations to all statutory authorities, board management, bankers or any authority where client is required to present the DPR during preparation or post preparation
- Study of all alternate layout options with preliminary designs, drawings and their costs / Technical comparisons
- Elaboration of Construction Program and plant planning including Construction Methodology for all critical and main components.
- All drawings prepared for DPR shall be of standard of specification drawings required for tendering purpose. Drawings prepared should fulfil tendering drawing requirements
- Review of all documents supplied by the Client and incorporation of the same in the DPR
- Support for selection of suitable construction material sites and review of Test Reports for suitability thereof.

Status: Ongoing



PROJECTS' PROFILE

Name: Rana Pratap Sagar Pumped Storage Project (1200 MW), Chittorgarh, Rajasthan, India

Client: Semaliya Energy Projects Private Limited

Year: 2022

Features:

Upper Reservoir: (Live Storage: 0.91 TMC; Gross Storage: 1.68 TMC)

Upper Dam: (Type: Rockfill Embankment with Central Clay Core; Height: 33 m; Length: 7805 m)

Lower Reservoir: (Live Storage: 0.841 TMC; Gross Storage: 0.843 TMC)

Lower Dam: (Type: Rockfill Embankment with Central Clay Core; Height: 12 m; Length: 7598 m)

Powerhouse: (Type: Surface; Dimensions: 167 m x 25.5 m x 51.2 m)

Penstock / Pressure Shafts: (Type: Finished Steel lined (circular); Number of Pressure Shaft: 5 no. Of Independent Penstocks, 1 no. Bifurcated into 2 no. Near powerhouse; Diameter of Penstock: 7.5 m; Length of Penstock: 591.35 m)

Tail Race Tunnel: (Type: Concrete lined Circular); No. Of Tunnel: 6; Dia. Of tunnel: 9 m; Length of Tunnel: 199.45 m)

Electro-Mechanical Equipment: (Pump Turbine: Francis type, vertical shaft reversible pump turbine; Total no. Of units: 6 no. (4 x 240 MW) + (2 x 120 MW))

One 400 KV Double Circuit Transmission Line with Quad Moose Conductor of length 41 KMs (appx.) from PSP will be connected to 400KV PGCIL Substation, Kota, Rajasthan State for evacuation of stored power during generating mode and for supply of power during pumping mode

Scope:

- Preparation, Submission, Processing Approval of Detailed Project Report (DPR) as per CEA/CWC/GSI/CSMRS guidelines till obtaining final Techno-economic Clearance including stage-wise preparation / Submission of reports as per procedures laid down by CEA for grant of TEC
- Assessment of Site Geology, Physical Geological Mapping, Preparation of Geological Maps and other details required for the completion of Geological Chapter
- Monitoring of Surface and Sub-Surface Exploration, Interpretation of data, incorporation of data for studies of optimization of layout and preparation of complete Geological Chapter including drawings/studies etc.
- Attending and amending the above reports based on the comments provided by the Owner's review Consultant and statutory authorities time to time including presentations / following up with all statutory associates with grant of TEC, till grant of TEC
- Support for presentations to all statutory authorities, board management, bankers or any authority where client is required to present the DPR during preparation or post preparation
- Study of all alternate layout options with preliminary designs, drawings and their costs / Technical comparisons
- Elaboration of Construction Program and plant planning including Construction Methodology for all critical and main components.
- All drawings prepared for DPR shall be of standard of specification drawings required for tendering purpose. Drawings prepared should fulfil tendering drawing requirements
- Review of all documents supplied by the Client and incorporation of the same in the DPR
- Support for selection of suitable construction material sites and review of Test Reports for suitability thereof.

Status: Ongoing



PROJECTS' PROFILE

Name: Yammeng Hydro Electric Project (15 MW),
Arunachal Pradesh

Client: Yammeng Green Energy Private Limited

Year: 2022

Scope:

- Review of Detailed Project Report
- Tendering Engineering
- Assistance in Bid Evaluation
- Assistance in Contract Award
- Detailed Design and Engineering of Civil Works
- Detailed Design and Engineering of Hydro-Mechanical Works
- Review of Detailed Design and Engineering of Electro-Mechanical Works
- Project Monitoring and Control
- Engineering Coordination, Site Supervision and Quality Control

Status: Ongoing



Name: Preparation of Detailed Project Report for
Patgaon (2100 MW) Pumped Storage Project,
Maharashtra

Client: Adani Green Energy Limited

Year: 2022

Scope:

- Preparation of Detailed Project Report (Phase A) including Topographical Survey, Geo-mapping, Geophysical Survey, Site Specific Seismic Studies, Construction Materials Testing, Petro-graphical Testing, Meteorological Studies and any other studies / investigations for obtaining all clearances from Statutory Authorities of Government of India, Government of Maharashtra and all other institutions as required for implementing Pumped Storage Project

Status: Ongoing



Name: Consultancy Services for Preparation of Detailed Project Report (DPR) and Detailed Design Engineering for Construction of Barrage-Cum-Bridge (In-Stream Storage Structures) across River Koel Near Village Hamirpur in the Sundargarh District of Odisha

Client: Shree Balaji Engicons Limited

Year: 2022

Scope:

- Preparation of Detailed Project
- Detailed Design and Engineering
- Construction Supervision
- Services during DLP and O&M phase

Status: Ongoing

PROJECTS' PROFILE

HYDRO POWER AND DAMS – Ongoing Projects

Name: Supervision for construction works of Nyabarongo Hydro Power Plant retaining wall and repair of other infrastructure, Rwanda

Client: Energy Development Corporation Limited

Year: 2021

Features:

Nyabarongo Power Station is a hydropower plant in Rwanda and is located at Matyazo cell, Mushishiro Sector, Muhanga district in Rwanda's Southern Province. The Plant was commissioned on 28th October 2014 and inaugurated on 5 March 2015. The damaged infrastructure in the Hydro Power Plant has created a big hole which has approximately 6m downwards from waterbed over a length of 140 m. Installed capacity of the plant is 28MW with two Francis turbine 14 MW each and the estimated annual Load factor of 62% with reserve of 4%.

Scope:

- Design a retaining wall at the riverbank dam
- Assess the existing damaged infrastructure (Retaining wall at powerhouse and bridge) and propose solution for repairing.
- Provide Bill of quantities (BOQ) for construction and Rehabilitation for the above-mentioned infrastructure.
- Provide Drawings for the retaining walls ensuring quality construction and strict compliance with resettlement plan in compliance with the site-specific Environmental Management Plan (EMP)
- Supervising the construction and approval for works done by the contractor ensuring the quality.
- Provide Monthly report to the client on construction works progress.
- Conduct formal Site Meetings with the Construction Contractor and keep minutes of matters of concern.
- Guide the Construction Contractor on critical elements of construction, including but not limited to:
 - i. Interpretation of technical specifications.
 - ii. Matters relating to worksite safety.
 - iii. Construction methodology.
 - iv. Receipt and checking of Construction Contractor's Progress Claims, preparation of payment certificates in a timely manner for due payment etc.
 - v. Confirm that Practical Completion has been reached and advise the representative of the Client accordingly.

Status: Ongoing



PROJECTS' PROFILE – PUMPED STORAGE

Identification of Pumped Storage Sites:

Engaged in identifying the Pumped Storage Sites for the following reputed private clients:

- ❖ Jindal Power Limited
- ❖ Acme Cleantech Solutions Pvt. Limited
- ❖ ReNew Power Pvt. Limited
- ❖ Statkraft India Pvt. Limited

We hand hold them for site visits and preparation of Pre-Feasibility Report in getting the MoU signed from the respective States.

So far, we have identified more than 60 nos. of PSP site locations in the State of Rajasthan, Chhattisgarh, Maharashtra, Madhya Pradesh, Odisha, Himachal Pradesh and Oman.

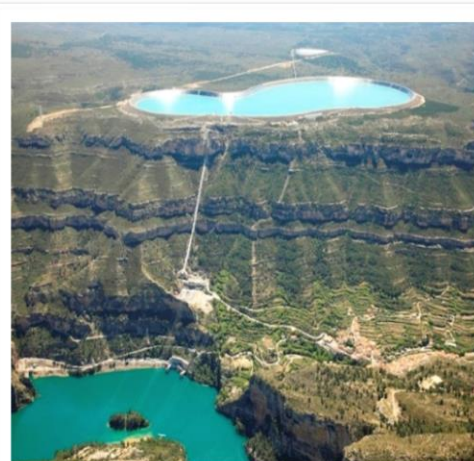
Pre-Feasibility Reports:

We have been involved in preparing PFRs for the following projects:

- 1000 MW and 1500 MW in Madhya Pradesh; 460 MW in Himachal Pradesh; 1200 MW in Maharashtra; 600 MW in Rajasthan; 700 MW PSP, 675 MW PSP, 2 nos. 720 MW PSPs and 2 nos. PSPs in Odisha; 540 MW and 1200 MW PSPs in Chhattisgarh; 600 MW and 700 MW PSPs in Uttar Pradesh
- Khahil III (960 MW), Khahil IV (800 MW), Khahil V (800 MW), Duqm II (1060 MW) and Duqm III (800 MW) Pumped Storage Projects in Sultanate of Oman
- Kynshi Stage I PSP (2557 MW), Run-Off-River, Solar Integrated Renewable Power Scheme, Meghalaya; Kynshi Stage II PSP (11254 MW), Run-Off-River, Solar Integrated Renewable Power Scheme, Meghalaya

Detailed Project Reports:

- Musakhand (600 MW) PSP in Uttar Pradesh for Acme Cleantech Solutions Pvt. Ltd. - Ongoing
- Rayavaram (1500 MW) PSP in Andhra Pradesh for New and Renewable Energy Development Corporation of Andhra Pradesh Limited (NREDCAP) – Ongoing
- Yadaballi (1200 MW) PSP in Andhra Pradesh for New and Renewable Energy Development Corporation of Andhra Pradesh Limited (NREDCAP) – Ongoing
- Kamalapadu (950 MW) PSP in Andhra Pradesh for New and Renewable Energy Development Corporation of Andhra Pradesh Limited (NREDCAP) - Ongoing
- Patgaon (2100 MW) PSP in Maharashtra for Adani Green Energy Limited (Ongoing)
- Rana Pratap Sagar (1200 MW) PSP in Chittorgarh District, Rajasthan for Greenko Group (Ongoing)
- Ukai (2400 MW) PSP in Tapi District, Gujarat for Greenko Group (Ongoing)
- Sukhpura – PSP (2560 MW) in Chittorgarh District, Rajasthan for Greenko Group (Bankable DPR has been submitted)
- 130 MW Vijayanagar PSP, Karnataka for JSW Energy Limited (Draft DPR has been submitted)
- Pinapurum Pump Storage Scheme (1200 MW), Andhra Pradesh for Greenko Group (Partial)
- Saundatti Pump Storage Scheme (1260 MW) for Greenko Group, Karnataka (Partial)



PROJECTS' PROFILE - HYDROPOWER

HYDRO POWER AND DAMS – List of Projects

FS / DPR Preparation and Review:

- Kurung HEP (330 MW), Arunachal Pradesh
- Demwe Upper I HEP (270 MW), Arunachal Pradesh
- Demwe Upper II HEP (270 MW), Arunachal Pradesh
- Demwe Upper III HEP (270 MW), Arunachal Pradesh
- Anjaw HEP (270 MW), Arunachal Pradesh
- Niare HEP (1000 MW), Arunachal Pradesh
- Naba HEP (1105 MW), Arunachal Pradesh
- Kotiveera HEP (24.90 MW), Chhattisgarh
- Manipur HEP Projects (Cumulative Capacity: 156.06 MW)
- Kynshi – I HE Project (270 MW), Meghalaya
- Pemashelphu HE Project (81 MW), Arunachal Pradesh
- Simang – I HE Project (67 MW), Arunachal Pradesh
- Simang - II HE Project (66 MW), Arunachal Pradesh
- Khuitam HE Project (66 MW), Arunachal Pradesh
- Madi HE Project (3 x 13.33 MW), Nepal
- Sawalkot HE Project (1200 MW), Jammu & Kashmir, Partial
- Bhilangana IIB HE Project, Uttarakhand
- Nimu Chilling HE Project (24 MW), Leh, Jammu & Kashmir
- Mangdum Sangra HE Project (19 MW), Kargil, Jammu & Kashmir
- Sankoo HE Project (18.5 MW), Kargil, Jammu & Kashmir
- Durbuk Shyok HE Project (19 MW), Leh, Jammu & Kashmir
- Lachung HE Project (3 MW), Sikkim
- Mangley HE Project (2 MW), Sikkim



Detailed Design, Project Management and Construction Supervision

- Yammeng HE Project (15 MW), Arunachal Pradesh, India
- Mosi SHE Project (6 MW), Arunachal Pradesh, India
- 7.5 MW Mini Central Hydroelectric Power Projects at Djenne, Republic of Mali
- Tsibjalamchu Diversion Scheme of Tala HE Project (1020 MW), Bhutan
- Teesta Stage – III HE Project (1200 MW), Sikkim
- Malana Stage – II HE Project (100 MW), Himachal Pradesh, Additional Spillway works
- Dikchu HE Project (96 MW), Sikkim
- Sorang HE Project, Himachal Pradesh

Due Diligence and Cost Vetting

- Demwe Lower (1750 MW) and Kalai II (1200 MW), Arunachal Pradesh
- Sorang HE Project (2 x 50 MW), Himachal Pradesh
- Uri – II HE Project (280 MW), Jammu & Kashmir
- Chamera – III HE Project (231 MW), Himachal Pradesh
- Rampur HE Project (412 MW), Himachal Pradesh
- Koldam HE Project (800 MW), Himachal Pradesh
- Parbati – III HE Project (520 MW), Himachal Pradesh
- Parbati – II HE Project (800 MW), Himachal Pradesh
- Rampur HE Project (412 MW), Himachal Pradesh
- Pare HE Project (110 MW), Arunachal Pradesh
- Teesta Low Dam HE Project – IV (160 MW), West Bengal



Technical Assistance

- Jorethang Loop HE Project (2 x 48 MW), Sikkim
- Ratle HE Project (690 MW), Jammu & Kashmir, Pre-Bid Engineering for Jaypee Group
- Sorang HE Project, Himachal Pradesh
- Rongnichu HE Project (96 MW), Sikkim

PROJECTS' PROFILE

SOLAR PROJECTS

Sl. No.	PROJECT	LOCATION	CLIENT	RESPONSIBILITY
1	Off-grid Solar Power Project for Irrigation schemes in Kirehe District, Rwanda	Rwanda, Eastern Africa	WAPCOS Limited	Preparation of Detailed Project Report (DPR) with assessment of adequacy of energy generation for the Irrigation Projects
2	50 MWp Solar Power Project	Three Springs, Western Australia	POSCO Plantech, South Korea	Preparation of Design & Detailed Engineering & Proposal for EPC work
3	10 MWp Solar Photo Voltaic Plant at Mahanadhi Aban Thermal Power Project Site, District Angul, Orissa, India	Odisha, India	Sunjing Geotech, South Korea	Preparation of Proposal & Financial Models for Development of 10 MWp Solar Photo Voltaic Plant
4	30 MWp Solar Photo Voltaic Plant at Palghat, Kerala	Kerala, India	Sunjing Geotech, South Korea	Preparation of Proposal & Financial Models for Development of 30 MW Solar Photo Voltaic Plant
5	1 MW Solar Photo Voltaic Plant at Namchi District	Sikkim, India	SPDC Limited, Gangtok, Sikkim	Preparation of Feasibility Report, Site Survey & Power Evacuation Planning
6	Rooftop Solar Power Project	Gurgaon/ Noida/ Bhopal etc. India	Various	Preparation of Proposal & Financial Models for Development of more than 25 nos. Rooftop Solar Photo Voltaic Plant including Design Engineering & Procurement assistance



PROJECTS' PROFILE

OIL AND GAS



Name: LPG & POL Cross country Pipeline Project at Vizag, India

Owner: East India Petroleum Private Limited

EPC contractor: BOMS Private Limited

Year: 2019 to 2021

Feature: The project involves setting up an unloading facility of LPG from transportation vessels at the Jetty area including blending units, Booster pumps and subsequently transferred to storage facility, through the network piping of 14" dia and 8.4 km length.

Scope:

- Collecting/ Review of Document Pertaining to the site conditions, geological data, LPG transfer system, LPG Blending system, firefighting design, upgradation of blending etc., for the EPC Contractor.
- Prepare and Finalization of project layouts for the utility services required for online blending systems, jetty operations, and Topside's facilities of the jetty.
- Detail Design Engineering, Preparation of construction stage drawings and Construction Supervision of all the Equipment Foundations such as Marine Unloading Arms, Blending Units, Booster Pumps and Fire water Tanks and Pumps,
- Detailed Design, Preparation of construction stage drawings and Construction Supervision of all newly proposed buildings at Jetty Area such as Control Room, Electrical Building, Booster Pump House, Fire Water Pump House, and DG Stake Steel Structure for the EPC Contractor.
- Detailed Design and Preparation of P&IDs for the project, Preparation of Data sheets and technical specification for the all the equipment's, and assist the EPC contractor during the technical evaluation of vendors
- Detailed design of firefighting system and preparation of fabrication drawings and Construction Supervision Services for fire water storage Tank (2 nos, 9.5m dia x 14m height), etc.
- Detailed Design, Preparation of construction stage civil drawings for the Road crossing culvert for the LPG pipeline, concrete pedestal for the pipeline supports etc.

Status: This project was successfully commissioned on 25- October -2021, Services Completed

PROJECTS' PROFILE

OIL AND GAS



Name: LPG & POL Terminal expansion at Vizag, India

Owner: East India Petroleum Private Limited

EPC contractor: BOMS Private Limited

Year: 2021

Feature: The project involves erecting the new POL tanks and Fire water storage tanks at terminal including Fire water network piping, POL piping and connectivity between the pump house and Gantry etc.

Scope:

- Collecting/ Review of Document Pertaining to the site conditions, P&IDs, terminal storage system, existing firefighting design, and prepare the terminal expansion proposal in phase wise for the EPC Contractor.
- Prepare and Finalization of project layouts for the POL Terminal expansion work.
- Detail Design Engineering, Preparation of construction stage drawings and Construction Supervision of all the POL and fire water storage tank Foundations (i.e.) piling, concrete outline & reinforcement details etc.
- Detailed Design, Preparation of construction stage drawings and Construction Supervision of all newly proposed buildings at terminal area (i.e.) Control Room, POL Pump House, Fire Water Pump House, Car parking, and Admin block for the EPC Contractor.
- Detailed Design of fire water demand for the entire terminal and finalization of fire water tank size.
- Detailed Design and Preparation of P&IDs for the POL project, Preparation of Data sheets and technical specification for the firefighting system, and assist the EPC contractor during the technical evaluation of vendors
- Detailed design of POL tanks as per API 650 and preparation of fabrication drawings and Construction Supervision Services for Tanks (3 nos, 16m dia x 15.5m height) for the EPC Contractor.
- Detailed design of firewater storage tanks as per API 650 and preparation of fabrication drawings and Construction Supervision Services for Tanks (2 nos, 23m dia x 20m height) for the EPC Contractor.
- Detailed Design, Preparation of construction stage civil drawings for the Road crossing culverts for the POL pipeline, concrete pedestal for the pipeline supports, Oil water separator system, cable trench etc.

Status: Ongoing

PROJECTS' PROFILE

TRANSMISSION / DISTRIBUTION LINE (ELECTRICAL)

Name: Project Management and Construction Supervision of 1,392 KM of medium Voltage lines and 1,482 KM of Low Voltage Network including Installation of Transformers in Northwestern, Rwenzori, Western, Mid-Western South and South Western Electricity Distribution Services Territories

Location: Uganda

Client: Rural Electrification Board of Ministry of Energy and Mineral Development

Scope: Responsible for management and administration of the contracts and reporting to the REA, Manager Project Development & Management (MPDM); Review and approve design drawings, including any changes and associated change proposals during works in progress; Review and approve detailed designs using an approval report for conformity with the specifications of the contract requirements; Attend, witness and approve using an approval report, both the manufacturer's factory acceptance tests and all on-site tests including pre-commissioning and final commissioning tests. For all consignments delivered to site, the consultant shall be required to inspect these for conformity to specifications, Factory Acceptance Tests (FATs) and Bills of Quantities (BOQs); Preparing monthly and quarterly progress reports for the Client's review and approval before submission to the rest of stake holders including AFD; Coordination contract activities and be the liaison between the Client, the Contractors and other agencies and stake holders; Arranging regular site inspections involving the Consultancy team, Client's representative and AFD Representative as appropriate; Organizing and managing site meetings and other contract management meetings, to be held at least once every four weeks. Preparing minutes of such meetings and circulate promptly to reach all concerned parties, including the Client within seven days of each meeting; Assessing any variation order and advising the client. Where any such variation order has an impact on cost, scope and schedule, either or together, then such variation order shall be evaluated and justified based current benchmarks from similar experiences; Monitoring the contractors' implementation of the Environmental Management Plan (EMP) and prepare monthly monitoring reports in line with National Environmental Management Authority (NEMA) guidelines; Working closely with the client during the construction period and to liaise with the Resettlement Action Plan (RAP) consultant and manage Right of way issues to avoid situations that would otherwise cause the project to delay; Training and Knowledge transfer to the client

Status: Services Completed in December 2019



Name: Malana Stage-II Hydro Power Project (100 MW)

Location: Himachal Pradesh, India

Client: Everest Power Private Limited

Scope: Design Detailed Engineering, Construction Supervision, Testing & Commissioning of 11 KV Construction Power Line from Jari Substation to Malana-II Dam of 34 km Long

Status: Ongoing

Name: Sainj Hydro Power Project (5 MW)

Location: Himachal Pradesh, India

Client: Himshakti Projects Private Limited

Scope: Supervision of Erection, Testing & Commissioning of 3.3/33 KV Substation at Sainj HEP, 20 Km 33 KV Single Circuit Line from Sainj to 33/11 KV Shillai Substation and 33 KV terminal equipment at Shillai Substation.

Status: Services Completed

PROJECTS' PROFILE

IRRIGATION PROJECTS



Name: Mahama & Mpanga Irrigation Scheme

Location: Rwanda

Client: WAPCOS Limited

Features: The intake system of the Project involves construction of off-taking structures, head regulator, sedimentation tank, pump house, rising main and storage tank for irrigation from the River Akagera on the Rwanda – Tanzania border. The river has a minimum flow of 90 m³/s and a maximum discharge of 694 m³/s corresponding to return period flood of 1 in 40 years. The Project requires pumping of silt-free water to storage tank by construction of required number of off-tanking intake and its associated structures along the left bank of Kagera River covering Mpanga and Mahama Sectors.

Scope: AEMPL engaged to provide Engineering Consultancy Services for Preparation of Detailed Project Report (DPR), Tender Design, Technical Specifications and assistance to WAPCOS for the Intake System Works for Irrigation Schemes in Mpanga and Mahama Sectors of Easter Province of Rwanda

Status: Completed

Name: North Koel Irrigation Project

Location: Jharkhand and Bihar, India

Client: WAPCOS Limited

Scope: Carried out works for WAPCOS Ltd. Scope includes Preparation of Design and drawings for remodelling of structures along Right Main Canal of North Koel Project

Status: Completed



PROJECTS' PROFILE

BUILDING PROJECTS

Name: Mihir CGS Society Limited

Location: Gurugram, Haryana, India

Client: The Mihir Cooperative Group Housing Society Limited

Year: 2015 – 2018

Cost: INR 56 Crore

Features: The project consists of two residential towers of (G+7) and (G+9) floors along with 2 basements each with floor having built up area of 5000 sq. ft. The building has been approved by HUDA & the occupancy certificate for the building was issued on 11th Dec, 2018. The total area of these Multi- storied framed structure buildings is 12081.68 sq. m. Two residentails towers of (G+7) and (G+9) floors along with 2 basements each (5000 sq. ft. area) Facade, Landscape/Horticulture & signage, MEP components like - firefighting / HVAC / Electrical / Plumbing & Sanitary / mechanical & equipment including Lifts & Elevators, security system, Design of telecommunication and security comprising of CCTV, PA system, BMS, Security System, IT infra, Wi-Fi etc.

Scope:

- Project Management Services, Master Planning, Architecture design including Interior design, Facade, Landscape/Horticulture & signage, Preparation of Detailed BOQ, Rate Analysis and detailed Cost Estimation, Structural Design and design of MEP components like - firefighting / HVAC / Electrical / Plumbing & Sanitary / mechanical & equipment including Lifts & Elevators, security system, Design of telecommunication and security comprising of CCTV, PA system, BMS, Security System, IT infra, Wi-Fi etc., Preparation of GFC drawings, Construction Supervision.

Status: Completed



Name: Multi-storied 5-star Baypark Wellness Resort

Location: Visakhapatnam, Andhra Pradesh, India

Client: Baypark Hotels and Resorts Private Limited

Year: 2015 – 2018

Cost: INR 185 Crore

Feature: Baypark wellness resort is a 5-star multistoried establishment covering an area of 10.5 Acres. The Baypark Hotels And Resorts Private Limited is a chain of resorts and hotels with the 5 star wellness resort at Vishakhapatnam. Total area is 10.5 Acres (approx. 42,500 sq. m), MEP works including Fire-Fighting HVAC System/Electrical/Plumbing & Sanitary/ Mechanical & Equipment including Lifts & Elevators. Internet & Hotel Management System including networking & telecommunication and security system comprising of CCTV, PA System, BMS, Security System, IT infra, Wi-Fi etc. External development including roads, street lighting, signage. Switchyard and electrical system; Water supply & Sewerage Network

Scope:

- Project Management Services. Master Planning. Architecture design including Interior design, Facade, Landscape/Horticulture & signage. Preparation of Detailed BOQ, Rate Analysis and detailed Cost Estimation. Preparation of Technical Specifications, GCC and SCC. Structural Design and design of MEP components like - firefighting / HVAC / Electrical / Plumbing & Sanitary / mechanical & equipment including Lifts & Elevators, security system, IT systems etc. Design of telecommunication and security comprising of CCTV, PA system, BMS, Security System, IT infra, Wi-Fi etc. Preparation of GFC drawings. Construction Services.

Status: Completed



PROJECTS' PROFILE

ROAD PROJECTS

Name: Mumbai Coastal Road Project

Location: Mumbai, Maharashtra, India

Client: Hindustan Construction Co. Ltd. (HCC)

Year: 2018 – Ongoing

Cost: INR 12,465.33 Crore

Features: The Coastal Road is an under construction 29.2-km long freeway that would run along Mumbai's western coastline connecting Marine Lines in the south to Kandivali in the north. The Project comprises of two phases, namely Coastal Road Project (South) and Coastal Road Project (North). The Coastal Road Project (South) extends from Princes Street Flyover to Worli End of Bandra Worli Sea Link.

This is divided into three packages, and this Contract pertains to Package II from Baroda Palace to Worli end of Bandra Worli Sea Link. It consists of grade road, Bridges and reclamation. The integrated infrastructure includes seawall and reclamation works. Main bridges, Viaducts of interchange loops, Vehicular underpass, pedestrian underpass, pavements, car parking (Structural, Architectural, MEP & HVAC), Bus Bays, Bus depots, Cantiliver, etc.

Scope:

- Providing Lead Design Checker services for all the works as per Principal Contract. Assessment/checking/review of designs, drawings and documents(all enabling, temporary, permanent works and construction sequence) which are required to be designed/submitted by the Detailed Design Consultant/ Contractor/ any other agency appointed by contractor to fulfill the contractual technical obligations for the execution of the project. Further the LDC shall issue a certificate for the same to the contractor which will be further forwarded to the engineer.

Status: Ongoing



Name: Four Lane Road Project

Location: West Bengal, India

Client: HCC Concessions Ltd.

Feature: The Project is part of 3 contiguous road projects being executed by the HCC Group from Baharampore to Dalkhola (258.35 Km) along the NH34 in the state of West Bengal.

- Baharampore (191.416 Km) To Farakka (294.684 Km) Section of NH-34 – Length of Four Lane – 100.6 Km
- Farakka (295.00 Km) To Raiganj (398.00 Km) Section of NH-34 – Length of Four Lane – 103.00 Km
- Raiganj (398.00 Km) To Dalkhola (452.750 Km) Section of NH-34 – Length of Four Lane – 54.75 Km

Scope:

- AEMPL engaged to provide Consultancy Services for Contract Management and Dispute Resolution.
- In addition, AEMPL engaged to provide Engineering Consultancy Services for Review of Rate Analysis for Four Laning Road Project from Raiganj (398.00 Km) To Dalkhola (452.750 Km) Section of NH-34 in West Bengal, India

Status: Completed



PROJECTS' PROFILE

Name: Existing Two-Lane Sections of NH-17 to Four Lane

Location: Mumbai, Maharashtra, India

Client: Hindustan Construction Co. Ltd. (HCC)

Features: The Project is part of 2 contiguous road projects from Indapur to Bhogaon Khurd (65.51 Km) along the NH-17 (New NH No.66) in the state of Maharashtra.

- Indapur (84.000 Km) To Veer-Wadpale (110.750 Km) Section of NH-17 – Length of the proposed road – 26.75 Km
- Veer-Wadpale (110.750 Km) To Bhogaon Khurd (149.510 Km) Section of NH-17 – Length of the proposed road – 38.76Km

Scope:

AEMPL engaged to provide Pre-tender Design Engineering Consultancy Services for existing two-lane section of NH-17 to four lane for the following Sections in Maharashtra, India:

- Rehabilitation and up gradation of Indapur to Veer (Wadpale) to Bhogaon Khurd section of NH-17(New NH No.66) from existing km 84/000 to km 108/000 (Design Ch. 84.000 to Ch 110.750) in the state of Maharashtra to four lanes with paved shoulders on EPC Mode under NHDP Phase IV.
- Rehabilitation and up gradation of Veer (Wadpale) to Bhogaon Khurd section of NH-17(New NH No.66) from existing km 108/400 to km 148/0 (Design Ch. 110.750 to Ch 149.510) in the state of Maharashtra to four lanes with paved shoulders on EPC Mode under NHDP Phase IV.

Status: Completed



PROJECTS' PROFILE

OTHER INFRASTRUCTURE PROJECTS

Name: Consultancy Services and Programme Management of New Cities for Shendra Bidkin Industrial area

Location: Aurangabad, Maharashtra, India

Client: CH2M Hill / Jacobs

Ultimate Client: Delhi Mumbai Industrial Corridor Development Corporation Limited

Year: 2019

Cost: INR 6414.21 Crore

Features: Shendra Bidkin Industrial Area (SBIA) is located at a distance of approximately 15 km from downtown Aurangabad and is 8 km east of the Aurangabad Airport. It is planned as a new industrial corridor extending from the existing Maharashtra Industrial Development Corporation's (MIDC) Shendra Industrial Park to the town of Bidkin. Total project area is 4000 Hectares. 4 Lane Road and streets on both sides (Both flexible and rigid pavements), Storm Water Drainage, Sewerage Treatment Plant of 5 MLD capacity, Effluent Treatment Plant of 6 MLD capacity, 3 Pump Houses (11 Pumps). 11 KV Sub Stations – 13 no., 33KV Sub Stations – 13 no., Cabling of 11 kV/33 kV cables in conduits and underground conduit of length 250 km and 8 km respectively.

Scope:

- Construction Supervision Services of Civil Works – Roads, Storm Water Drainage, Industrial City Infrastructure. Construction Supervision of Electrical Works – Construction of 11 kV Sub Stations, 33 kV Sub Stations, Cabling of 11 kV/33 kV cables in underground conduit. Construction Supervision of STP including its automated SCADA system for control, ETP, Pump Houses, smart street lightings; Contract Management including all aspects related to technical and commercial aspects. Project planning, monitoring, control and scheduling; Study of the requirements and specifications of electrical and civil works given in the contract documents and corrigenda. Advice the client on adoption of technical specifications different for those contained principal contract and having adverse impact on the quantity and quality of works. Review of material test reports. Maintain the Quality Assurance and Quantity Control plan for the project.

Status: Ongoing



Name: Expert PMC for completion of Ulwe Recourse Channel work for Navi Mumbai Airport

Location: Maharashtra, India

Client: CIDCO Limited

Year: 2019

Cost: INR 9500 Crore

Feature: The site of Navi Mumbai airport is selected near Panvel town in an area admeasuring 2054 Hectare Consisting of 1615 Hectare as airport zone and remaining for off-site infrastructure such as diversion & training of rivers, approach road, railways, interchange and utility lines, etc. Ulwe river presently flowing through project area will be diverted to west into Thane Creek to maintain the existing drainage pattern. Total Airport Area = 1615 Ha; Total Area for Ulwe Recourse Channel Work = 439 Ha

Scope:

- AEMPL was appointed as Expert Project Management Consultant for providing providing consultancy in management sevicees for completion of Ulwe Recourse Channel work. The work included study and evaluate the construction drawings form the point of view of constructability. Review and improve the construction methodology for the works ensure its implementation. Review the drilling and blasting plan with proper safety.

Status: Completed



PROJECTS' PROFILE

OTHER INFRASTRUCTURE PROJECTS

Name: Project Management Consultancy for Tawi River front, Jammu, India

Client: Jammu Smart City Limited

Year: 2021

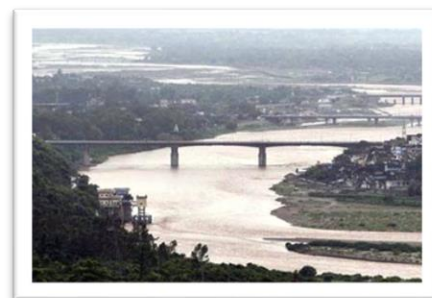
Cost: INR 143.01 Crore

Features: Design flood for 13565 cumecs and check flood of 15600 cumecs as per conclusion. Suitable top and downstream protection on the embankments/ walls against possible overflow during higher floods. Number of drainage outlets discharging effluent, industrial waste etc. Additional bridges, truck sewer lines etc.

Scope:

- Project Management, Site Supervision and Monitoring including survey work etc.
- Time Management, Safety, Quality Audits and Quality Control.
- Cost Management and verification of claims submitted by the contractor.
- Review of engineering design, BOQ, contract document , cost estimates submitted by the technical consultant and Assistance in Bid Evaluation Process.

Status: On-going



Name: Architectural, Structural and Electrical Consultancy Services for Bagalmukhi Ropeway project at Chandigarh-Manali National Highway near Pandoh Dam, Mandi, Himachal Pradesh

Client: RSV Constructions Pvt. Ltd. (RSV)

Year: 2022 - Ongoing

Features:

Scope: The scope of works for providing Architecture, Structural Design and Electrical Design following project components: -

- Architectural Planning and Design works
- Landscaping
- Lower Terminal & Upper Terminal Buildings (2 Nos, 12mx12m each)
- Foundation design of Terminal and Intermediate Tower (3 Nos)
- Design of Anchor Block (2 Nos.)
- Covered Store (3000 Sq feet)
- Electrical Substation and Illumination of the area.

QUALITY MANAGEMENT SYSTEM

Aquagreen Engineering Management Private Limited (AEMPL) assigns great importance to the subject of quality in order to maintain a very high standard for our engineering and consultancy services. AEMPL maintains a robust Quality Management System, setting objectives and providing guidelines and procedures for the sustainable process models developed and refined by us over the years. A close supervision of quality assumes high priority for us to achieve our primary objective of ensuring client satisfaction.

			
This is to Certify that the Management System of			
AQUAGREEN ENGINEERING MANAGEMENT PVT. LTD.			
2ND FLOOR, A-BLOCK, PLOT NO-14, FACTORY ROAD, ADJ. TO SAFDARJUNG HOSPITAL, DELHI-110029, INDIA			
has been found to conform to the Quality Management System standard:			
ISO 9001:2015			
This certificate is valid for the following scope of operations:			
PLANNING, DESIGN & PROJECT MANAGEMENT CONSULTATION OF INFRASTRUCTURE PROJECTS			
Certificate No.: 09110634A			
<u>Date of initial registration</u>	<u>Date of this Certificate</u>	<u>Surv. audit on or before/ Certificate expiry</u>	<u>Recertification Due</u>
22 June 2022	22 June 2022	21 June 2023	21 June 2025
This Certificate remains valid subject to satisfactory surveillance audits.			
Accreditation			
			
For verification and updated information concerning the present certificate visit to www.iclcert.com This certificate is property of Integral Certification (P) Ltd. and shall be returned immediately when demanded. Integral Certification (P) Ltd. 301, U-60 (3rd Floor), Shakar Pur, Laxmi Nagar, Delhi-110092 E-mail: info@iclcert.com Website: www.iclcert.com Contact No.: +91-9319332223			



Certificate OF REGISTRATION

This is to Certify that the Management System of

AQUAGREEN ENGINEERING MANAGEMENT PVT. LTD.

2ND FLOOR, A-BLOCK, PLOT NO-14, FACTORY ROAD,
ADJ. TO SAFDARJUNG HOSPITAL,
DELHI-110029, INDIA

has been found to conform to the Environmental Management System standard:

ISO 14001:2015

This certificate is valid for the following scope of operations:

**PLANNING, DESIGN & PROJECT MANAGEMENT CONSULTATION
OF INFRASTRUCTURE PROJECTS**

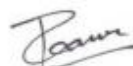
Certificate No.: IN17065B

<i>Date of initial registration</i>	<i>Date of this Certificate</i>	<i>Surv. audit on or before/ Certificate expiry</i>	<i>Recertification Due</i>
<i>01 October 2021</i>	<i>01 October 2021</i>	<i>30 September 2022</i>	<i>30 September 2024</i>

Accreditation

This Certificate remains valid subject to satisfactory surveillance audits.





Director



For verification and updated information concerning the present certificate visit to www.iclcert.com

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Integral Certification (P) Ltd.

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Contact No. : +91-9319332223

ICL/FM-001/REV06



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ADJ. TO SAFDARJUNG HOSPITAL,
DELHI-110029, INDIA

has been found to conform to the Occupational Health & Safety Management System standard:

ISO 45001:2018

This certificate is valid for the following scope of operations:

**PLANNING, DESIGN & PROJECT MANAGEMENT CONSULTATION
OF INFRASTRUCTURE PROJECTS**

Certificate No.: IN17065C-1

<u>Date of initial registration</u>	<u>Date of this Certificate</u>	<u>Surv. audit on or before/ Certificate expiry</u>	<u>Recertification Due</u>
01 October 2021	01 October 2021	30 September 2022	30 September 2024

Accreditation

This Certificate remains valid subject to satisfactory surveillance audits.



ICLIFM-001/REV08



Director



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