

“Today, India has one of the highest potentials for the effective use of renewable energy resources”



Mr. Aaditya R. Dhoot
Jt. Managing Director
IMP POWERS LTD.



Q. Please brief us the advantages of hydro-power projects against the other renewable energy projects?

There are numerous advantages of hydropower over other energy sources. These include:

- Clean & Environment friendly - Because hydropower utilizes water to generate electricity, it is non-polluting. It does not create toxic by-products like powerplants that burn fossil fuels such as coal or natural gas.
- Renewable - Hydropower is renewable because it relies on the hydrological (water) cycle driven by the sun which provides a renewable supply of water. Hydropower facilities harness the natural energy of flowing and falling water to generate electricity. Also saves scarce fuel reserves.
- Reliable - Hydropower can meet changing demands because it can go from zero power to maximum output rapidly and predictably.
- Efficient - Today's hydropower turbines are capable of converting more than 90 percent of available energy into electricity which is more efficient than any other form of generation (the best fossil fuel powerplant is only about 50 percent efficient). Thermal is 35% and Gas has around 50 % efficiency.
- Flexible - Hydropower output can be changed quickly in response to changes in electrical demand because of the ability to control

the flow of water. This ability is considered essential to electric transmission grid stability.

- Domestic and Secure - Hydropower is a secure source of energy because it comes from water in domestic rivers and is not subject to disruptions from foreign suppliers, cost fluctuations, and transportation issues that are associated with other fuel sources.
- Cost-Effective - Hydropower generation has low operating costs and a long powerplant life compared with other power-generating options. Once the initial investment is made, powerplant life can be extended economically and remain in service for many years. Typically a hydropower plant in service for 40-50 years can have its operating life doubled.
- Stored Energy Source - Because hydropower is most often generated by water stored in a reservoir behind a catchment area, a vast amount of potential energy exists in the reservoir which is available over a long period of time.
- Instant Start Capability - Hydropower facilities have the ability to start generation without an outside source of power. This service allows system operators to provide auxiliary power to more complex generation sources that could take hours or even days to start.
- Growth and Development - Hydropower has played an important role in the growth and

development of the particular area where it has been set up. Being located in remote regions leads to development of interior backward areas (Education, Medical, Road communication, Telecommunication etc.).

Q. What are the prospect do you foresee for the hydro-power projects in India? Kindly elucidate the benefits?

Present globalised and consumerised India need sustainable development mechanism for the better tomorrow. Without sustainable development this cannot be achieved. Every part of life needs sustainability. For the energy sustainability SHP's and MHP's are the good and viable options for a better tomorrow.

Today, India has one of the highest potentials for the effective use of renewable energy resources. The country has an estimated Small Hydro Power potential of about 15000 MW, out of which only 11% have been tapped. The remaining still needs to be. To achieve this the vision and mission should be development and management of water resources, address the full range options which can be attained through private institutionalized participation and transparent decision-making processes to achieve sustainable outcomes that benefit all across the country.

- The benefits could be Reliable and sustainable power.
- We shall get cheaper electricity as there is no fuel cost and the recurring cost involved in generation, operation and maintenance is very low as compared to other resources.

- It is environment friendly. Also can increase agriculture productivity.
- Social benefits like enhanced employment opportunities, enriched life style and improved standard of living.

Q. What, according to you, are the major thrust areas in the environmental conservation & management for generating hydro-power in India?

We being into Small and Mini Hydro Power plant set-up the necessity of environment conservation and it's management could be :-

- Minimise the deletion of plants / trees in the project area. Inevitable should be replaced with new plantations nearby.
- Catchment Area Treatment (CAT) to minimize erosion in the catchment of the trench / reservoir thereby reducing siltation in the same.
- Reservoir / Trench wire RIM treatment plan to stabilize reservoir periphery.
- Conservation measures for flora and fauna native to the project site area.
- Rejuvenation of dumping sites and project sites using engineering and biological methods.

Q. After the Uttarakhand disaster, what is your opinion on establishing hydro power plants in the Himalayan region? What kind of pre & post safety measures should be adopted?

As referenced the Uttarakhand



Mr. Ajay- Director
IMP POWERS LTD.



disaster, proper planning and designing of Hydro power projects should be done. The project has to be built with due consideration of averting such natural calamities and also be careful that the project be not the source of such calamities - especially in the Himalayan region. Every pre-project reports should be authorized by competent authority and continuous vigilant engineering process adopted to adhere to the same. Once the project is completed, it should be well looked after - technically to keep it maintenance free.

Q. Why have you chosen J&K for your hydro-power project? What is the total area it occupies?

Our thrust areas for setting up of Hydro Power plants have always been in the rural and remote areas which really is in dire need of Electricity. It is this passion of developing these areas have resulted in identifying J&K for our such projects.

J & K has huge potential for Hydro Power generation. As per the current survey there have been 246 sites which have been identified as probable Small Hydral sites in the state with a capacity of upto 1411.72 MW.

Moreover the challenging terrains have made us more concentrative to do SHP and MHP projects in J & K.

Q. What kind of support have you received from the J&K government in this regard?

IMP Energy Ltd. - having proven it's capabilities and demonstrated the same with quick response approach for the projects allotted, now

have been considered a preferred company for totl solutions in Small and Mini Hydro power projects in LREDA, KREDA and JKEDA.

Q. What is the power production capacity of the plant? Let us know about its distribution & utilisation process?

IMP Energy Ltd., in a small period span of 1 year has bagged good orders from LREDA (Ladakh Renewable Energy Develpoment Agency) and KREDA (Kargil Renewable energy Development Agency). All these projects are at the most challenging mountaneous terrains. The projects are as under :-

PROJECTS AT LEH - LADAKH (LREDA)

A. PENSTOCK ERECTIONS WORK AS BELOW - (Erection work of Penstock - inclusive of civil work)

- 2 X 250 KW - MHP at TSATI, Nubra valley, Leh - Ladakh
- 2 X 400 KW - MHP at BOGDANG, Nubra valley, Leh - Ladakh
- 2x400KW-MHPatCHULUNGKHA, Nubra valley, Leh-Ladakh
- 2 X 250 KW - MHP at TURTUK, Nubra valley, Leh-Ladakh

B. Complete contract on turnkey basis for planning, design, engineering, fabrication, supply, transportation to site, construction, erection, testing & commissioning (Inclusive of operation and maintenance for 2 years)

AS BELOW :-

- 2 X 300 KW - MHP project at SHAYOK, Leh-Ladakh
- 2 X 600 KW - MHP project at WARIS-III, Leh-Ladakh

PROJECTS AT KARGIL (KREDA)

A. Complete contract on turnkey basis for design, construction, manufacture, supply, erection, testing & commissioning. Also execution of power evacuation, transmission line (Inclusive of running and maintenance of the project for 3 years) -

AS BELOW :-

- 2 X 750 KW - SHP project at BAIRASS, Drass, Kargil
- 2 X 750 KW - SHP project at KHANDI, Kargil
- 2 X 750 KW - SHP project at SANGRAH, Kargil

All these projects are still in the execution stage.

Q. What are the different turbines that you are using in the project?

Depending on the technical requirements of the projects and the water heads as designed we intend to use Francis turbines.

Q. How are you handling the sedimentation problem of the reservoir?

We intend to implement the following methods to handle the sedimentation problem of our Trench / reservoir to be built.

- Catchment Area treatment (CAT) for reduction of silt loads.
- Effective de-silting arrangements for prevention of silt.
- Silt resistant equipments for withstanding the silt.

