

MECAMIDI
HPP



GLOBAL REFERENCES



France
Portugal
Italy
Turkey
Afghanistan
Nepal
India
Laos
Honduras
Uganda
Sri Lanka
Tanzania

HYDRO POWER EXPERT

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Introduction MECAMIDI Group

For over 70 years, MECAMIDI has been involved in the hydropower industry business.

The Group designs and manufactures small and medium-size hydropower plants up to 50 MW .

It has presence in 5 continents in over 50 countries with more than 2400 references worldwide and installed capacity of more than 4000 MW.

The group focuses on 3 development axis:

1. Technological Improvement with R&D
2. Fully Integrated
3. International Development

Through a network of subsidiaries and agents spread across the world, the Group provides a tailor-made service to its customers, from design to commissioning of hydroelectric power plants up to 50 MW.

Power plants ownership and management:

The Group successfully develops, builds, operates and maintains hydropower plants.

They have ownership of several Hydro Power projects worldwide.

Hydroneo - a Group subsidiary also invests in hydroelectric power plants as financial sponsor.

It also provides financing solutions to its clients through partnerships, positioning the group not only as a technical but also as a financial partner.

Group Vision

The target of MECAMIDI Group is to provide its customers with the equipment, services and benefits of working with a Global Dedicated Hydro Power Company.

To achieve this MECAMIDI Group is:

- Globally situated on all continents: Through its subsidiaries, offices & Factories in France, Italy, Bulgaria, Brazil and India along with many representative offices in the world.
- Competent in EPC capacity of all the equipment from Turbine to Generator to Hydro Mechanical, Control Commands, Electrical & Power Substation.
- Comprehensive Global Expertise of service for: Development, Studies, Production, supervision, Installation, erection & Cabling, start-up Maintenance and Hydro Power Management.
- We are responsible and Eco Friendly Organization, harnessing hydro power in harmony with nature, to reduce carbon footprint and improve World's Environment.

Group Key Figures

- 236 employees
- 10 subsidiaries
- 4 factories
- 2400 references
- 50 countries
- 4000 MW commissioned

Introduction MECAMIDI HPP India

(an ISO 9001-2008 certified Company)

- Subsidiary of Mecamidi, France.
- Founded in 1995.
- One of the leading Hydro Power Equipment Supplier
- Engaged in Designing, Engineering, Manufacturing, Supply, Erection, Testing & Commissioning of Electro-mechanical equipments for small & medium size Hydro Projects on water to wire concept.
- An Engineering Procurement and Construction (EPC) Company

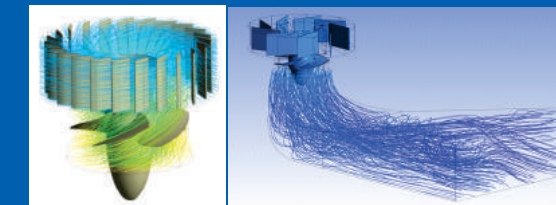
Studies Office & Design Desk

R & D

CFD Calculations

MECAMIDI has been extensively involved in Research & Development and CFD to improve efficiency and reduce cavitation.

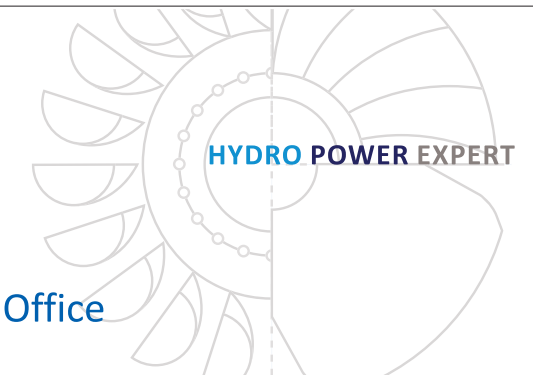
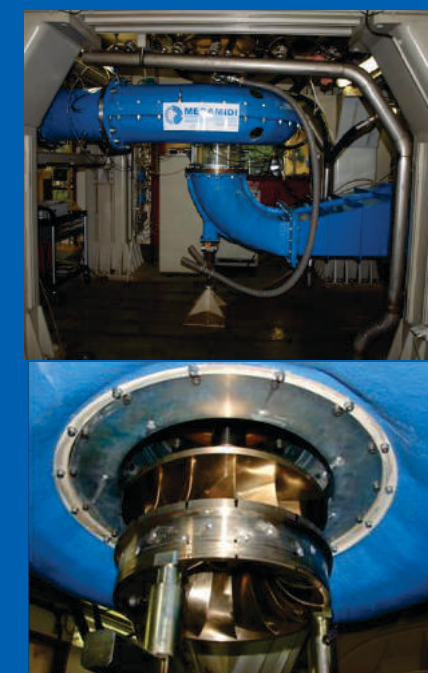
It is working closely with prestigious universities in Grenoble, Lausanne & Toulouse.



Exclusive Research & Development in predictive turbine modeling by CFD (Computational Fluid Dynamics) has proved to be a performance security equivalent to the one provided by the models run into a laboratory.

Model Testing

Dedicated Model Testing to validate Hydraulic profiles for improved efficiencies & reduced cavitation.



Studies Office

In house Design Experts are working continuously to adapt the profiles of runner & distributor, for catering to stringent site requirements & discharge behaviors.

We also carry out the modeling of existing site to calculate & understand hydraulic issues for relevant solutions to the customers.

Turbine Designing

With the help of advance softwares like Solid Edge we do 3 D Modelling & Design of the Turbines

3D Modeling & Design

Our Design experts are working continuously to adapt our equipments to dedicated sites in order to deliver more efficient projects to our customers.

Finite Element Analysis

Once our profiles are selected, calculated and chosen, the mechanical pieces & interconnections with other equipments are verified before manufacturing.

RESEARCH
&
DEVELOPMENT

Kaplan

Kaplan turbine is an inward flow Reaction Turbine, where water changes pressure as it moves through turbine & gives up its energy.

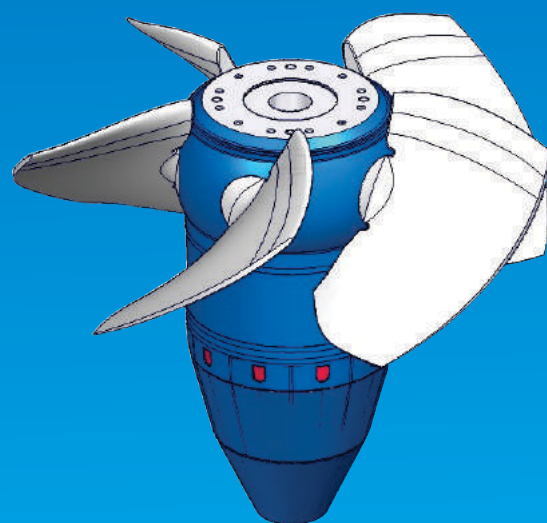
Kaplan turbines are largely used for low head & high flow conditions.

MECAMIDI manufactures KAPLAN Turbines with:

- Unit Capacity from 50 KW up to 30 MW.
- Operational Head from 1.5 m up to 30 m.
- Unit Discharge from 1 m³/s. to 100 m³/sec.
- Turbine Runner Diameter from 800 mm up to 4300 mm.
- Runner Blades from 3 to 6 nos.

Mecamidi Kaplan Turbines are offered with following configurations:

- Horizontal, Vertical & Inclined
- Single & Double regulation
- Saxo (also called S-type)
- Siphon
- Pit (also called open bulb)



Francis

Francis turbine is an inward flow Reaction turbine, which combines radial & axial flow.

A part of water energy is given up to pressure changes occurring in Turbine Blades, while remaining part of water energy is extracted by the Draft Tube of Turbine.

Francis turbines are largely used for medium head & medium flow conditions.

MECAMIDI manufactures FRANCIS Turbines with:

- Unit Capacity from 50 KW up to 30 MW.
- Operational Head from 20 m up to 200 m.
- Unit Discharge from 0.5 m³/s to 10 m³/s.
- Turbine Runner Diameter from 200 mm up to 3400 mm.

Mecamidi Francis Turbines are offered with following configurations:

- Vertical Shaft Single Francis
- Horizontal Shaft Single Francis
- Horizontal Shaft Double Francis



Pelton

Pelton Turbine is an impulse turbine. Pelton wheel extracts energy from impulse of moving water.

Nozzles direct forceful streams (Jet) of water, against a series of buckets mounted around edge of Pelton Wheel. As the water-jet contacts the buckets, it imparts energy to buckets.

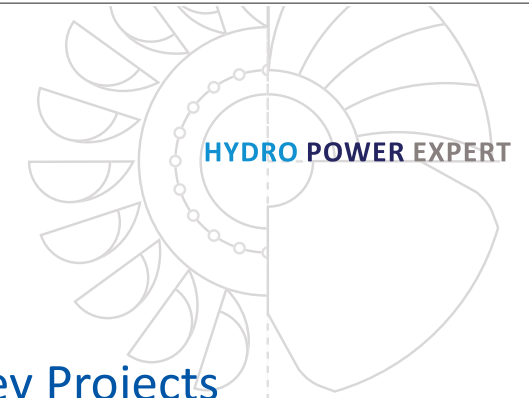
Pelton turbines are largely used for high head & low flow conditions.

MECAMIDI manufactures PELTON Turbines with:

- Unit Capacity from 50 KW up to 30 MW.
- Operational Head from 80 m up to 1000 m.
- Unit Discharge from 0.1 m³/s to 10 m³/s.
- Turbine Runner Diameter from 400 mm up to 3500 mm.

Mecamidi Pelton Turbines are offered with following configurations:

- Horizontal Shaft Pelton Turbines with 1 or 2 Jets
- Vertical Shaft Pelton Turbines with 3 to 6 Jets

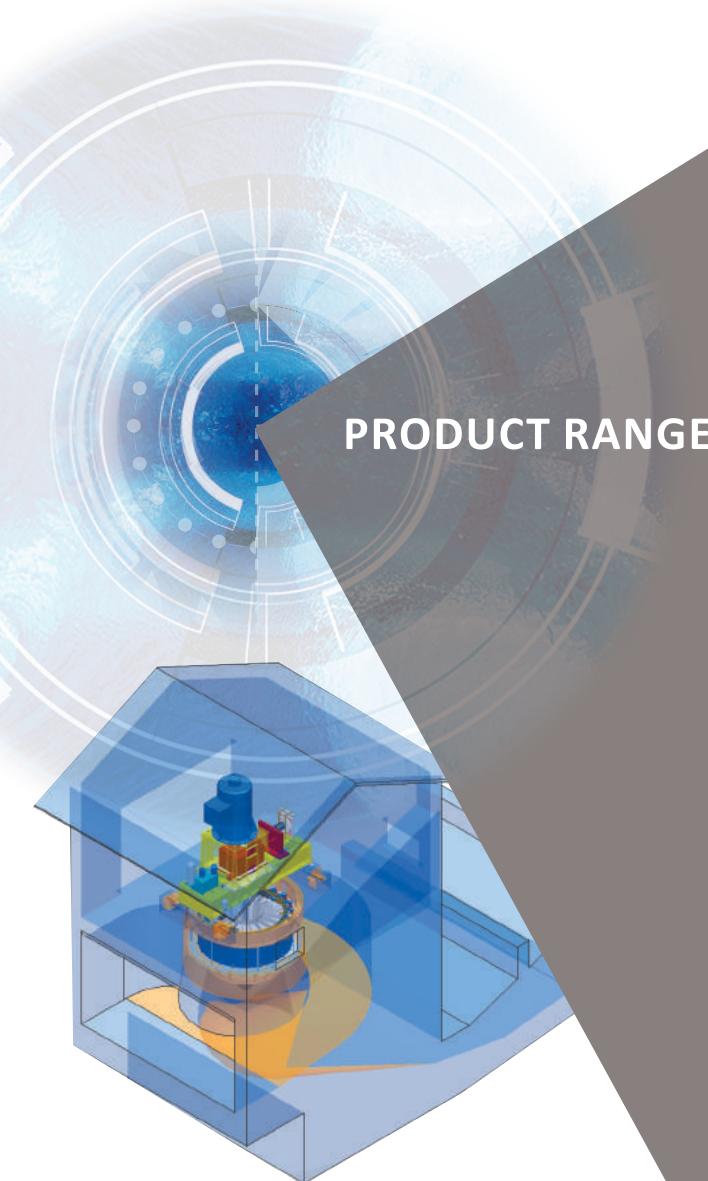


Turnkey Projects

- From Concept to Commissioning
- From Water to Wire



PRODUCT RANGE



Balance of Plants - Electrical & Mechanical

Generators

Generators, either synchronous or asynchronous, are one of the main elements making up a hydroelectric power plant as they convert the turbine's mechanical energy into electrical energy.

Numerous technical options are available, depending on the site constraints.



Command Control

The electromechanical part as well as the hydro mechanical parts required to secure and connect the plant to the grid are managed electronically, helped by a controller (provided by companies such as Schneider, Siemens, ABB etc.).

MECAMIDI developed its own control and management software (SCADA) including possibilities of monitoring and remote control from a computer or PDA.



Electrical Equipments

All the technical sizings related to protections, transformers, medium voltage and high voltage systems are assured by our engineers.

MECAMIDI also offers high voltage indoor Switchgear & outdoor switchyard.



Hydro Mechanical

Through its specialized subsidiaries and its key partners, **MECAMIDI** designs and manufactures hydro-mechanical equipments, such as cofferdam valves, wagon valves, sector valves, butterfly valves, trash racks, screen rakes etc.



Renovation, Modernization & Upgrading

The combined expertise of **MECAMIDI** group and its worldwide locations allow us to carry out the following :

Rehabilitation to give back their original performance to the plants.

Modernization to improve their performance, thanks to technological improvement or a better integration into their environment.

Automation to replace obsolete or inadequate operating and monitoring systems.

Reconstruction for the very old or abandoned sites.



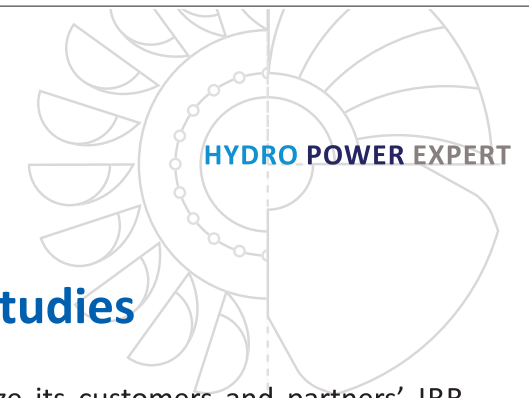
Operations & Maintenance

MECAMIDI also proposes to be in charge of the complete management of hydro power plants including maintenance, monitoring, administration and optimization of all the operations.

The goal is to get the optimal production for our customers. As part of this service, a real time remote control system is used to monitor the power plant operation.

After Sales Services

MECAMIDI also offers prompt after sales services to ensure minimum downtime of power house. The combined expertise of **MECAMIDI** & subsidiaries at worldwide locations allows us to provide maintenance services readily. **MECAMIDI** HPP arbitrate on facilities to realize preventive or corrective maintenances.



Pilot Studies

To maximize its customers and partners' IRR, **MECAMIDI** is regularly consulted to bring its knowledge in terms of study.

Our offices consist of experts in the various necessary fields for a proper technical and economical dimensioning of the power plants (hydrology, geology, topology, civil engineering etc).

Often enquired during the design phase, **MECAMIDI** offers to its customers the possibility to partially or completely realize the studies, taking in account not only the equipments design but also the civil engineering, from the water intake to the restitution channel.

SERVICES

Harnessing Hydro Potential
in Harmony with Nature