



Compact and simple arrangement, easy in installation



Unit complete with required components ready to install



Pico with pelton turbine for higher head >50 m

PICO HYDRO POWER PLANT

Pico hydro is small hydro power generation with capacity less than 5 kW. It is normally build on small stream with medium to high head. Pico hydro offer much simpler and cheaper solution of power generation for remote off grid system.

Power generated are depending on two main components which is flow of the water (Q) and water drop (head) according to following equation :

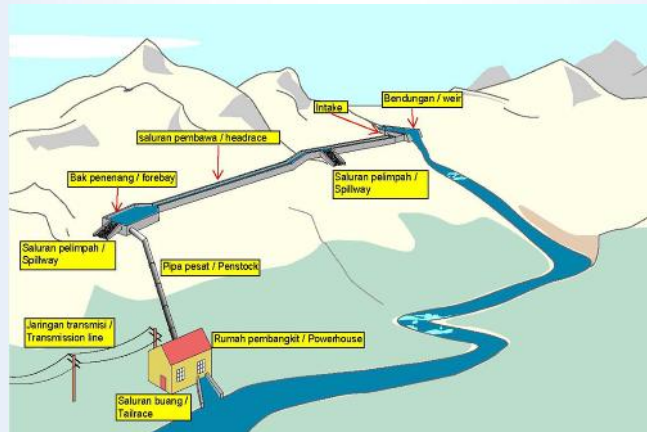
$$Pel = H \times Q \times G \times t$$

Pel = Electrip power output (kW)

H = Head (m)

Q = FLOW (m³/s)

G = Gravity 9.81 (m/s²)



We offer wide range of application for pico hydro depend on the site potential such as head and flow available. All of our equipment's are custom made to ensure the best performance and efficiency. System are easy in operation and maintenance since it uses standard widely available components.



Scope of supply for pico hydro package consist of :

1. Turbine and accessories
2. Mechanical transmission (pulley, belt, coupling)
3. Generator and accessories
4. Controller ELC and ballast load
5. Accessories (spare parts, operator tools, cable)

PICO HYDRO POWER PLANT



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PICO HYDRO TURBINE

PICO CROSSFLOW TURBINE SPECIFICATION:

1. Runner diameter : 125 mm
2. Runner width : 50 – 400 mm
3. Head range : 4 – 40 m
4. Flow range : 10 – 100 l/s
5. Power range : 1 – 5 kW
6. Efficiency : 65 – 75%
7. Mech. Transmission : Pulley+Ve belt



PICO PELTON TURBINE SPECIFICATION:

1. Runner PCD : 120 – 200 mm
2. No. of Nozzle : 2 nozzle
3. Head range : 40 – 100 m
4. Flow range : 10 – 50 l/s
5. Power range : 1 – 5 kW
6. Efficiency : 75 – 85%

GENERATOR

Generator is used to convert mechanical power into electrical power. We used standard synchronous AC generator for therefore electric power generated can be used directly without inverter for home appliances.



PICO HYDRO GENERATOR SPECIFICATION:

1. Type : Synchronous brush/brushless AVR
2. Construction : Double bearing, horizontal shaft
3. Voltage : 230VAC, 50 Hz ,1Phase
4. Power : 3kW, 5kW, 13,5kVA (AVR)



Generator uses synchronous brush or brushless type (AVR) depend on budget and request. brushes generator (red) and brushless AVR (grey).



CONTROLLER (ELC)

Controller used to stabilize the frequency, speed and voltage of the plant to ensure high quality electric output.

ELC SPECIFICATION :

1. Type : Digital Electronic Load Controller
2. Voltage : 230VAC, 50Hz,1P
3. Power : 3 dan 5 kW
4. Metering : Analog/digital (V,A,H,z,h)
5. Ballast load : Tubular air heater



Vertical generator alignment for low head scheme to protect from seasonal flooding can be made upon customer request