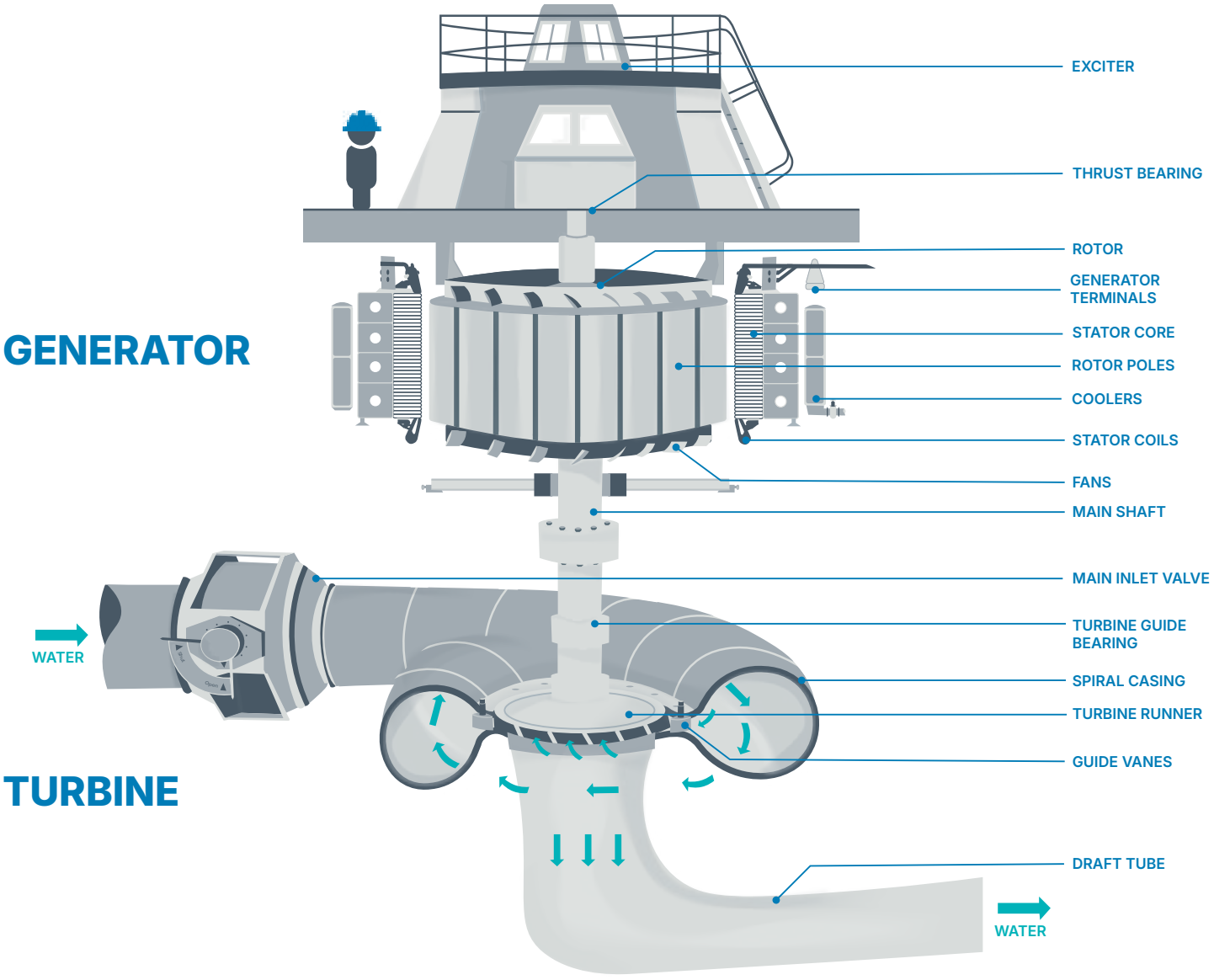
Turbines & power generation

Turbines



This is a representation of one of the many units we have in the Snowy Scheme

What turbines do we have at Snowy Hydro?

Most of the turbines used in the Snowy Scheme are Francis reaction turbines, which are installed vertically. Francis turbines have the widest range of pressure applications.

Jounama Small Hydro uses a Kaplan turbine, which is installed horizontally and is the only Kaplan turbine used in Snowy Scheme. Kaplan turbines are more complex than Francis turbines. They have a lot more moving parts to allow the turbine to be fine-tuned by changing the pitch on the blades. This makes it a perfect choice for Jounama's low head and high-flow hydro conditions.

Did you know

The amount of energy that can be converted depends upon several factors, such as

- The **flow rate** through the turbine
- The **efficiency** of the hydro-electric turbine itself
- The available **head** (height of water above the turbine)

Fast fact

The nine Snowy power stations comprises of **33 turbines** with a total generating capacity of 4,100 megawatts. producing **thousands of hours** of renewable electricity each year.

Power output factors

FLOW RATE → EFFICIENCY → HEAD OF PRESSURE

Different types of hydro-electric turbines

PELTON WHEEL

FRANCIS REACTION TURBINE

KAPLAN TURBINE

What do they do?

Convert potential energy in stored water to mechanical energy as the water passes through the turbine runner. This rotates the turbine runner, which drives the generator, turning mechanical energy into electrical energy.

- Pelton Wheel - high head pressure
- Francis reaction turbines - intermediate head pressure
- Kaplan turbines - low head pressure