

FUEL FACTS: HYDROELECTRIC POWER



Water is a clean, reliable, and affordable energy resource. It is a stable option that provides resilience because of its ability to provide quick response to increased demand.

Did You Know?

- In Indiana, hydroelectric power serves approximately 3% of the state's electricity needs, in the U. S., it contributes approximately 7% of all electricity.
- Hydroelectric facilities are among the most resilient power plants. The average lifespan of a hydroelectric facility is 100 years, but with ongoing upgrades can operate well beyond that.

Water is a powerful force. For thousands of years, the power of water from gravity has been harnessed for labor-intensive tasks, such as waterwheels in mills to grind grain into flour or to cut lumber. In the late 1800s, water began to be used as a fuel source to generate electricity, also known as hydroelectric power or hydroelectricity.

HOW DOES HYDRO WORK?

To create hydroelectricity, water is captured through a dam or a diversion structure, then water is moved to a turbine which generates electricity. There are four types of hydroelectric plants.

- **Impoundments.** Water is collected by a dam, and the water is released when energy is needed. Most dams were built for water management purposes, such flood control and irrigation.
- **Diversion facilities.** Also known as “run-of-river,” these facilities channel flowing water through a series of canals to power turbines. Most hydroelectric facilities in Indiana are diversion facilities.
- **Pumped storage facilities.** Water is pumped from a lower elevation reservoir into a higher elevation reservoir. Water is stored for later use and when energy is needed, water is released from the higher to the lower reservoir through turbines that generate electricity.
- **Offshore (marine).** Although not an option for Indiana, technologies use the power of waves, tidal, and ocean currents.

There are currently five utility-operated hydroelectric facilities in Indiana. Each of these are run-of-river facilities, using the flow of the river.

Utility	Facility Name	MW	Water Source	County
I&M	Elkhart	3.0	St Joseph River	Elkhart
I&M	Twin Branch	4.0	St Joseph River	St Joseph
NIPSCO	Norway	7.2	Tippecanoe River; Lake Shafer	White
NIPSCO	Oakdale	9.2	Tippecanoe River; Lake Freeman	Carroll
Duke Energy	Markland	45.0	Ohio River	Switzerland

