Argonne NATIONAL LABORATORY

HOW DOES **HYDROPOWER WORK?**

Hydropower is one of the oldest and largest sources of renewable energy

Hydropower uses the natural flow of moving water to generate electricity. Hydroelectric plants provide about 60% of renewable electricity worldwide.

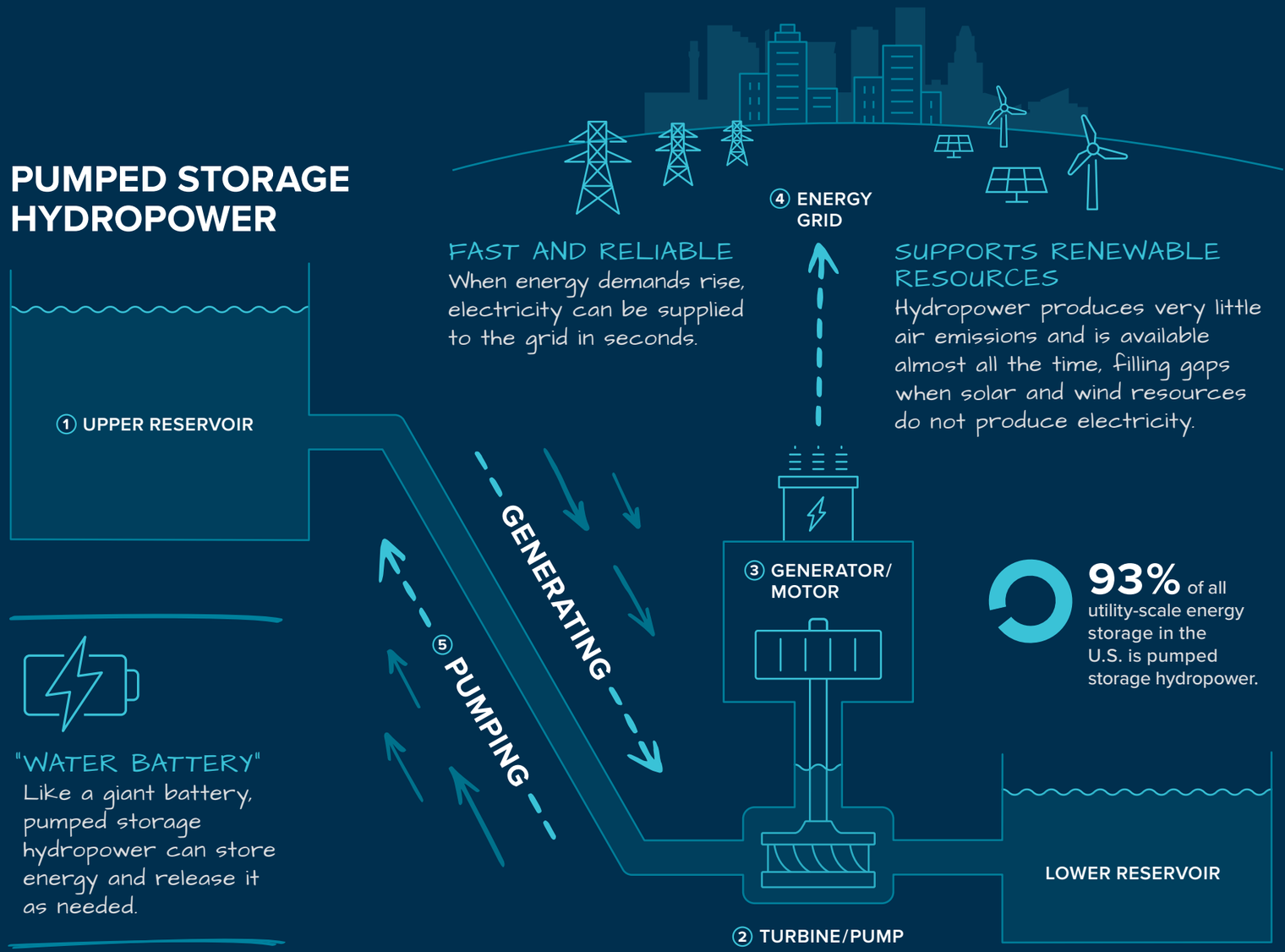
The main types of hydropower plants include run-of-river, storage, and pumped storage hydropower. Run-of-river hydropower plants have little or no storage capabilities. Storage hydropower plants typically have large reservoirs with significant storage capacity, while pumped storage hydropower plants operate as giant water batteries.

Pumped storage hydropower plants generate electricity when needed by having water in an ① upper reservoir flow downward to spin ② turbines and ③ generators, thus generating electricity that can be supplied to the ④ energy grid in seconds. The water is later ⑤ pumped back to the upper reservoir when electricity is plentiful and less valuable.

Pumped storage hydropower is currently the only commercialized technology for long-duration storage, which will become increasingly valuable as the power system evolves to include wind and solar generation.

Learn more at **www.anl.gov/hydropower**.

PUMPED STORAGE HYDROPOWER



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