

# Energy Facts



## Idaho - BASELOAD RESOURCES



**Hells Canyon Dam** — A concrete gravity hydroelectric dam located on the Snake River .



**Jim Bridger Power Plant** — A 2,119 MW coal-fired.

The ISEA Baseload Resource Task Force issued an updated report in 2013 that highlights the important role baseload resources play in meeting Idaho’s electricity needs.

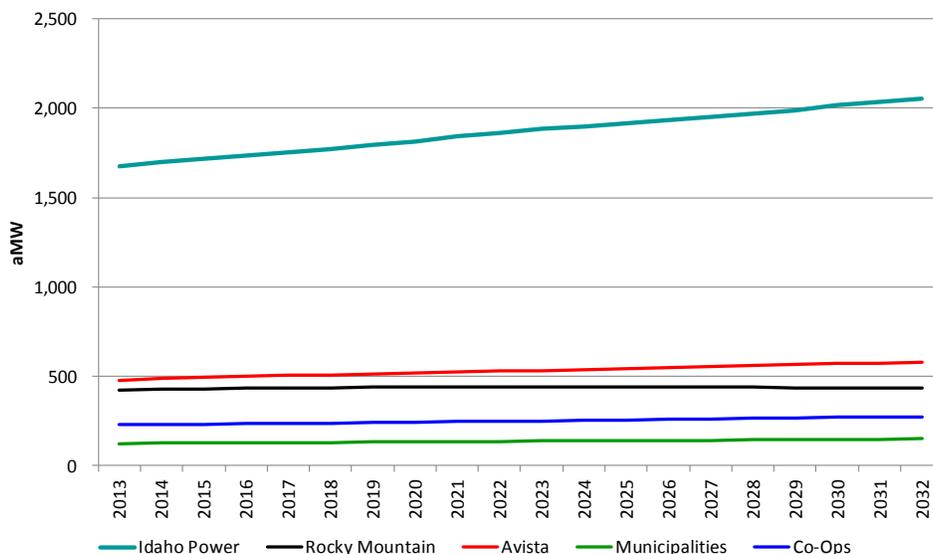
Baseload resources generate electricity at consistent levels over long periods of time, have low operating costs, and contribute significantly to the reliable operation of the electrical system.

Typical baseload resources include:

- Hydroelectric power plants
- Coal-fired power plants
- Combined-cycle combustion turbine natural gas power plants
- Geothermal power plants
- Biomass power plants
- Nuclear power plants

The need for baseload resources will continue to grow in the foreseeable future. Forecast and electrical needs of Idaho residents and businesses are expected to grow at an average annual rate of over 1% during the next twenty years and are shown in the chart below broken out by electrical supplier:

**Forecast and Electrical Demand in Idaho**



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**Langley Gulch** — Combined cycle combustion turbine natural gas power plant.

## DID YOU KNOW...

- In the electric utility industry, the term “baseload” refers to electric generation resources that are typically operated 24 hours a day throughout most if not all months of the year.
- Baseload resources significantly contribute to the reliability of the electrical system and are generally only shut down for scheduled maintenance or emergency repairs.
- Conventional baseload resources typically require significant initial capital investment, but have relatively low variable operating cost.
- Hydroelectric generation is considered a renewable baseload resource and has no carbon emissions, fuel costs, or consumptive water uses.
- Geothermal and biomass generation also provide renewable baseload energy.
- Small Modular Nuclear Reactors have growing support as interest in non-carbon based energy continues to grow.
- Wind and solar are intermittent-variable resources that are not considered baseload.

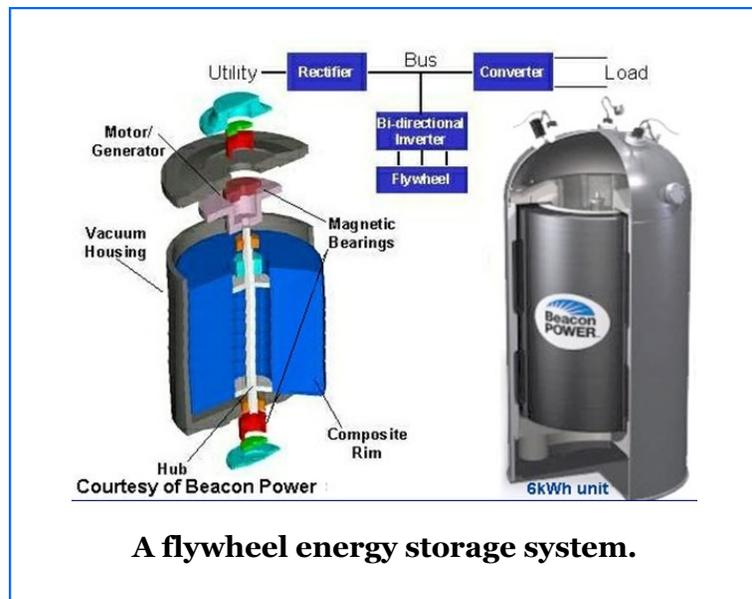
Many unresolved issues exist that could have a profound impact on the future generation of electricity in the state of Idaho. One issue that is addressed in the updated Baseload Task Force report is the integration of variable and intermittent resources such as wind and solar. One way to better integrate intermittent-variable resources into the bulk electric system with baseload resources is the use of electricity storage technology.

Currently there is no economical way to store electricity in the amounts necessary to benefit the bulk electric system. Many storage technologies are at various stages of development and could play an important role in the future as the amount of variable renewable resources being built continues to increase. Cost effective energy storage would greatly facilitate the integration of variable and renewable energy generation such as wind and solar.

Storage technologies include:

- Hydroelectric pumped storage
- Batteries
- Vehicle to grid concept (electric vehicles)
- Compressed air
- Thermal storage

***A Superconducting Magnetic Energy System*** - Superconducting magnetic energy storage systems store energy in the magnetic field created by the flow of direct current in a superconducting coil, power conditioning system, and cryogenically cooled refrigerator.



**Find the ISEA Task Force Reports:**

**[www.energy.idaho.gov/energyalliance/taskforce.htm](http://www.energy.idaho.gov/energyalliance/taskforce.htm)**