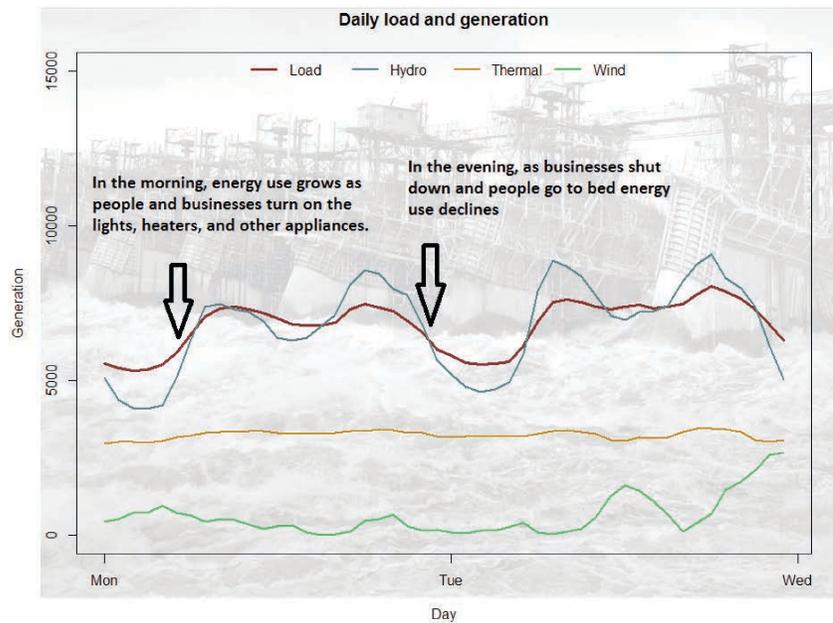




Hydropower

Hydropower is *Flexible*

Flexibility: the ability to increase or decrease generation to meet changes in energy demand.

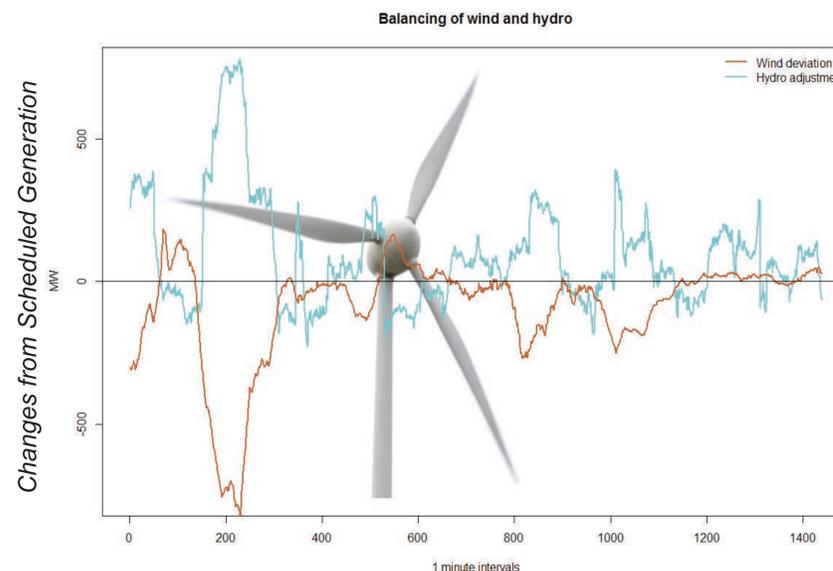


Hydropower generation has the capability to provide both baseload generation and peaking generation.

- ▶ **Baseload generation:** energy produced continuously to serve base level energy needs.
- ▶ **Peaking generation:** energy produced to meet peak demand requirements.

Demand is energy required by homes and businesses that the various generation sources must supply.

Hydropower's **flexibility** allows it to pick up and back-off generation for integration of intermittent renewables and unanticipated outages.



Hydropower's flexibility, or ability to change output rapidly, provides the capability to offset fluctuations in wind generation or other intermittent resources, such as solar. Without flexible backup generation, wind generation could not match the energy needs of homes and businesses. In addition, hydropower can quickly compensate for other unanticipated outages or drops in generation.

Statistics by project

	Dam	Year Constructed	Capacity (MW)	Avg. Gen. (aMW)	Number of homes project can supply with electric power
Lower Columbia	Bonneville	1938	1104	566	454,000
	The Dalles	1957	2080	823	660,000
	John Day	1971	2480	1083	868,000
	McNary	1952	1120	594	476,000
Lower Snake	Ice Harbor	1962	693	206	165,000
	Lower Monumental	1969	930	308	247,000
	Little Goose	1970	930	283	227,000
	Lower Granite	1975	930	288	231,000
Mid C	Grand Coulee	1942	6809	2439	1,956,000
	Chief Joseph	1958	2614	1361	1,091,000
Headwater	Libby	1975	605	231	185,000
	Hungry Horse	1953	428	89	71,000
	Albeni Falls	1955	49	24	19,000
	Dworshak	1973	465	193	155,000



Every year, an equivalent amount of natural gas generation would produce

41 Million tons of CO₂

Equivalent to burning 4.6 billion gallons of gasoline.

These 14 projects are operated and maintained by the Corps of Engineers and the Bureau of Reclamation.

- ▶ The Bonneville Power Administration (BPA) sells the power produced by the dams.
- ▶ The cost of operating the dams for power production is paid for by BPA customers.

Other non-power costs are funded by Congressional appropriations.

