

Real Value

Hourly Waterpower Energy

The *Real* Value of Waterpower

When we hear about the challenges facing the electricity sector these days, commentators normally focus on energy. When the term “supply” is used, the average person tends to think of electricity as a commodity, of which we simply need more.

The electricity system is much more complicated than that. Customers use electricity at virtually the same time as it is generated. The system operators at the Independent Electricity System Operator are charged with the task of matching the amount of generation on line at every instant in time, with the collective load requirements of everyone who is making steel, enjoying air conditioning or making toast.

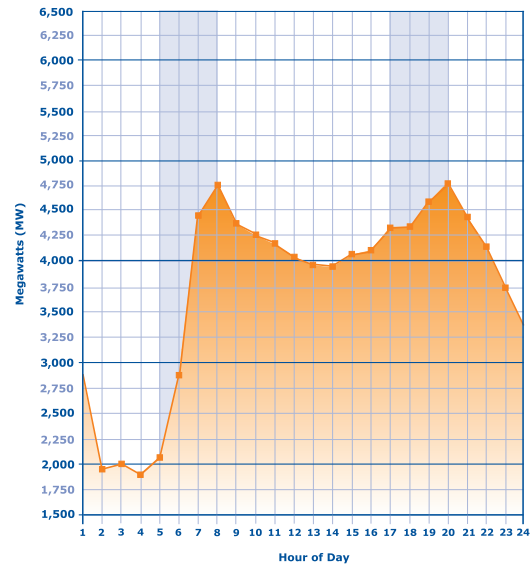
Most dispatchable waterpower facilities are used every day to help ramp generation up quickly to match rapidly rising loads. Waterpower units are able to respond much more rapidly to changes in load than our other major generation sources; so they are used to compliment the attributes of the overall system mix. In short – all generation is not created equal – and waterpower’s ability to follow load is provincially significant.

These three daily dispatch graphs show the profile of waterpower energy production:

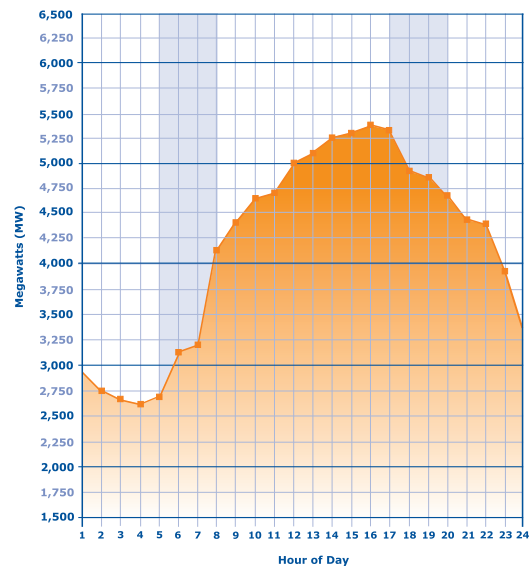
- On **April 17, 2003** the system operators dispatched 2,500 MW of waterpower between 5:30 and 7:00 a.m. Waterpower was backed off somewhat through the day, and then ramped up again between 5:00 and 8:00 p.m. A similar profile takes place in the fall.
- The **August 13, 2003** graph reflects the difference in season, with peak loads handled by waterpower generation in the late afternoon, when air conditioning loads are highest. On a weekday in August, waterpower generation can vary between 2,600 MW and 5,400 MW.
- The **January 5, 2004** graph indicates the most dramatic shift in daily generation, from 2,500 MW in the wee hours of the morning up to 6,300 MW in the early evening.

The real value of waterpower to the provincial system is its flexibility – its owner’s ability to store water and vary flows quickly to respond to system needs. ■

April 17, 2003



August 13, 2003



January 5, 2004

