

Extract from Market Surveillance Panel Market Monitoring Report May 2006 – October 2006

2.3 May 30, 2006 Hour 16

In Hour 16 the HOEP was \$258.60/MWh.

Pre-dispatch Market Conditions

Demand was projected at 25,199 MW with a price of \$1,998. Net imports were 1,809 MW and the pre-dispatch supply cushion was 9.1 percent. We caution however that in this case the pre-dispatch supply cushion is misleading because it includes all import offers in the market when in reality only a subset of these imports was available due to a binding net interchange scheduling limit (NISL). If we take the NISL limit into consideration, the pre-dispatch supply cushion was negative 1.4 percent. ²⁸ At a price of \$1,998 all available generation was scheduled. Above \$1,998, there were 11 MW of peaking hydroelectric generation available.

We have asked the MAU to revise the methodology underpinning the pre-dispatch supply cushion calculation to determine whether other relevant factors such as the NISL limit, forced outages and deratings should be considered in its computation.

Real-Time Market Conditions

In real-time, demand reached a maximum of 24,528 MW and averaged 24,370 MW over the hour. The supply cushion dropped to negative 0.20 percent. Real-time demand was lower than forecast by 671 MW and this contributed to a lower than forecast HOEP. In addition, activation of shared reserve increased supply at the margin and this also drove the HOEP down in the hour. These events are discussed further below.

Assessment

The market cleared at \$1,998 in pre-dispatch on the steepest portion of the offer curve. Several nuclear and fossil units were on outage and 918 MW of imports were removed from the offer stack because of transmission problems in PJM (this is the same import cut that occurred in Hour 15). The next offer above \$700 was from a gas-fired generator with an offer of \$1,998.

The HOEP in Hour 16 was \$258.60, more than \$1,700 below the pre-dispatch price. There are a number of reasons for the precipitous drop in the real-time price. Real time peak demand came in 671 MW lighter than forecast and average demand for the hour was below this, leading to lower prices. It is likely that a component of this drop in demand was caused by reduced consumption by non-dispatchable loads as a result of the pre-dispatch price forecast.

In addition, the IESO lost a 500 kV circuit which resulted in a generation loss of 746 MW in the constrained schedule. This transmission contingency reduced generation in the constrained schedule only, supply in the unconstrained schedule was not affected. To cover the contingency that occurred, the IESO activated 500 MW of operating reserve and requested 350 MW shared activation reserve (SAR) from the New York and PJM markets. At the same time, the IESO lowered operating reserve (OR) requirements in both the constrained schedule (last interval) and the unconstrained schedule (last 4 intervals). This amounted to an additional energy supply of 104 MW (net 850 MW supply minus 746 MW of loss) after the contingency in real-time in the constrained schedule while the unconstrained schedule (last 4 intervals) gained 850 MW of additional supply (350 MW of SAR and 500 MW of lowered OR requirement).

In this instance, the unconstrained schedule gained supply in the amount of 850 MW and this suppressed the HOEP:

- The use of SAR has an effect similar to an emergency import in that it simply reduces demand. The IESO should consider treating SAR similar to emergency imports whereby demand is added back to the unconstrained schedule.
- The reduction of Operating Reserve caused by the contingency is a more difficult issue. If the contingency was a generating unit failing, it is removed from both schedules. In such a case, reducing OR in the amount of the forced outage reduces OR demand in both schedules but the loss of generation will shift the offer curve for energy to the left. As the offer curve shifts to the left with equivalent energy demand the MCP will rise but there will be some offset caused by the reduction in the OR requirement. If the contingency is a loss of transmission, typically the generation is only removed from the constrained schedule leaving the offer curve in the unconstrained schedule unaffected. In this case, OR demand is reduced in the unconstrained schedule and this suppresses both the energy and OR price.

To assess the impact of the reduced real time demand, the MAU added 671 MW to market demand in real time. Under this scenario, the HOEP would have been \$1,851. To assess the impact of the lower OR requirement and shared activation reserve in real time, the MAU added 350 MW to market demand and restored the OR requirement to its normal level. Under this scenario the HOEP would have been \$343. Therefore these actions suppressed the price by \$84.

The Panel notes that the shared reserve received from New York and PJM is essentially a non-market transaction which had the effect of depressing the HOEP. In its December 2005 report, the Panel noted that the IESO introduced new measures to deal with the nonintuitive price impact of emergency imports and voltage reductions. The Panel is of the view that shared activation reserve as a means of incremental supply should be treated in a manner that reflects the scarcity conditions in the market. In this case, the IESO received 350 MW of shared activation reserve from the New York and PJM markets. Currently this incremental supply pushes the HOEP down. The Panel's preference is that these emergency supplies not affect the HOEP.

As to the issue of which type of contingency creates a generation loss in which schedule and in turn the treatment of reducing OR, this is certainly a more complicated issue. The Panel has always believed that from a reliability point of view, prices should reflect the scarcity at the time. Unfortunately, with the present fictions created in the unconstrained world with regards to transmission it would appear that prices will not be reflective of scarcity. The Panel suggests the IESO should discuss with participants if a more appropriate treatment is applicable for the loss of transmission elements. Ideally and to be consistent, the reduction in OR should not appear in the unconstrained schedule and affect the HOEP.