

Communications for Variable Generation Dispatch

SE-91 Renewables Integration
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- Dispatch Workstation Communications
- Challenges for Variable Generators
- Internet-based Dispatch
- Next Steps

- Each dispatchable generator has a physical communication line dedicated to receiving dispatch instructions located at the generation facility or control centre
- Dedicated lines provide guaranteed availability backed by a vendor service-level agreement
- The cost for each dedicated line to locations in Ontario is approximately \$6,000/year

- IESO surveyed existing variable generators to determine the location where they expect to install their dispatch workstations
 - All of the existing variable generators surveyed plan to manage dispatch instructions through control centres outside of Ontario
- Dedicated communication lines crossing the border will likely require coordination with a variety of independent telecommunication companies
 - Likely longer lead times for infrastructure installation
 - Will require more effort to establish
 - Difficult to manage and monitor availability in multi-supplier situation
 - Significant additional costs to extend a circuit out-of-province

- A proposal has been developed that would allow for the sending of dispatch instructions to dispatchable variable generators through an encrypted, secure path on the internet
- Establishing the secure internet connection requires much less lead time than for a dedicated line
 - Does not require any termination equipment at the participant site so on-going maintenance is less than dedicated circuits
- Dispatch workstations could be located anywhere in the world with no additional infrastructure costs
 - IESO would have the right to reject a connection for security reasons

- Throughput and latency equivalent to dedicated circuits
- Infrastructure required to support this functionality is already in place at the IESO
- Only cost to the variable generator will be the cost of maintaining a commercial-grade internet service
- Reliability of the communication link is determined by the Internet Service Provider (ISP)

- The IESO requires that dispatch workstations for variable generators connect to the IESO via secure internet-based communications pathway
 - Reduced lead time and cost required to establish secure connection
 - Empirical evidence suggests that the reliability is equivalent to dedicated circuits
 - Costs for the commercial-grade internet service will be borne by the variable generator
 - In recent years the IESO has undertaken significant effort to lower communication costs borne by ratepayers and this is consistent with those efforts

- IESO is currently investigating the required changes to the Participant Technical Reference Manual (PTRM)
- Market Rules changes are not expected
 - If required, they will be introduced at the March 26th Technical Panel meeting
- IESO will begin contacting variable generators to begin the process of setting up and testing internet-based communications pathway