

## NSP Upgrades System Dispatch Optimization Tool

*Regulations Drove Need for Sophisticated Fuel Forecasting*

Nova Scotia Power (NSP) provides power to approximately 500,000 customers in Nova Scotia, Canada. It uses diverse fuel including HFO, gas, coal/petcoke, oil, hydro/tidal, wind and biomass.

### Situation

While NSP had been using a resource optimization software, the organization found that the tool was no longer able to represent their dispatch complexities caused by decreasing load, increasing variable generation and tightening emissions regulations.



After a Fuel Adjustment Mechanism Audit completed by Liberty Consulting Group, NSP learned that its Modelling Dynamic Reactive Reserve (MDRR) dispatch model was limited. The tool was economically dispatching coal units ahead of the generators in a way that created an infeasible dispatch, and the model was under-forecasting the natural gas and HFO fuel requirement.

NSP replaced its legacy system with PLEXOS for more accurate dispatch optimization and fuel forecasting.

### Solution

Based on the audit's recommendation, they chose PLEXOS to address the dispatch issue. In addition, the PLEXOS model was able to explicitly consider the sync condenser contribution to system load.

Initially, PLEXOS and the previous tool ran in parallel for two quarterly fuel forecasts to validate the model. The team grew confident in the accuracy and PLEXOS became the tool for recording fuel forecasts.

### Results

PLEXOS accurately forecasted fuel and purchased power requirements from the start of the changeover and succeeded in forming the base case for all system studies and fuel forecasts.

NSP went on to justify transmission system upgrades based on fuel cost savings, and now utilizes a more accurate fuel forecasting and reporting system.

To learn more about PLEXOS and dispatch optimization, visit: [energyexemplar.com](http://energyexemplar.com) or contact us at [info@energyexemplar.com](mailto:info@energyexemplar.com).