



profitpoint

Success Story

Energy Generation and Transmission Project

Benefits

Profit Point's mathematical model allowed the user to solve a very complex and time-consuming problem with better performance and a more robust solution, as well as to see the results in a visual display.

Background

When the UK changed the rule around energy generation, the utility companies in the UK were scrambling to take advantage of the new leeway it allowed them. Now they could choose to produce more energy than their customers demanded and sell it on the spot market, or make less than their customers demanded, but possibly have to buy some on that same market if demand were high. If it cost more to start up a unit to cover peak demand than to pay the penalty, then the company might wish to buy the energy on the spot market. This required looking at the situation every 30 minutes and re-optimizing.

Our Solution

Profit Point participated in the TXU and British Energy projects where we delivered an LP and scheduling model to allow the users to manage the very large and time sensitive situation on 24/7 basis. The LP did the tradeoffs, and the scheduling provided the visualization tool. With many generation facilities and many complex rules on the time it takes to start/stop a generation facility, the LP was large and complex.

This model contains a large number of discrete (integer-valued) variables. In general, the complete solution of such problems can take a very long time. In this application, the models needed to be solved regularly, and long solution times would be impractical.

Profit Point adopted a solution approach that substantially reduced the time taken to solve the models. We also integrated the schedules to be displayed on a Planning Board where users were able to:

- Amend the spot times associated with load changes and spot loads associated with spot times.
- Insert and remove entire activities
- Make amendments to the schedule that did not result in the perceived storage of energy, rather it resulted in the re-calculation of events into the future.

To learn more about how Profit Point can help optimize your business call us at 866.347.1130.