

# Alliant Energy

CASE  
SUMMARY

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## ALLIANT ENERGY

Madison, Wisconsin  
Dane County

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### The Company

Alliant Energy Corporation is a growing energy-service provider with operations both domestically and internationally. Alliant Energy provides electric power to more than 1.3 million customers in Iowa, Illinois, Minnesota, and Wisconsin. Alliant Energy provides electric, natural gas, water, and steam services to nearly three million customers worldwide.

### Project Background

Alliant Energy has, since 1998, been modifying and improving its coal-fired power plants for lowered emissions (specifically NOx) thereby improving efficiency and better overall plant economics. This approach, called the Combustion Initiative, has been applied to the M.L. Kapp Generating Station in Clinton, Iowa. With the project at Kapp wrapping up and with sights set on more plants, a computational tool was needed to determine the extent of the changes and degrees of success. The purpose of the computational tool is to perform continuous data collection and analysis for accuracy, validation, ongoing evaluation, improvement of equipment and the plant as a whole. This provided continuous monitoring of performance and operational trends in the economics, efficiency, and emissions of the plant.

### Incentives to Change

Alliant Energy is committed to providing a clean, safe, and healthy environment. Caring for the environment is one of the company's core values. Evidence of this is Alliant Energy voluntarily setting the average NOx emission limits for the larger Iowa plants at 0.15 lb NOx/MMBtu. This is true of the Kapp plant in Clinton where the average amount of NOx emissions has been reduced to below 0.15 lb/MMBtu when the permitted limit is 0.45 lb NOx/MMBtu.

### Results

For ease of use, the computational tool was created in an Excel spreadsheet. The spreadsheet will give managers, engineers and operators the opportunity to see an immediate effect of the changes in plant efficiency, economics and emissions after new emission control technologies are installed. The new effect will quantify the reduction in emissions in a cost-effective manner and an estimation of the improved efficiency of the Kapp generating station. The spreadsheet can compare historical data to current data. This allows Alliant Energy to realize the net effect of each change into the plant. Furthermore, the spreadsheet allows for a "what-if" scenario, allowing management to estimate what any future changes may mean to the emissions, efficiency, and economics.

GOVERNMENT

BUSINESS

ACADEMIA