Harnessing the power of predictive analytics for safety, sustainability, and cost efficiency in the gas industry

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The E Source Data Science team has been on the road this spring in an unofficial tour of natural gas conferences. While at these events, we've been hearing some interesting chatter in the halls between sessions. From the 2023 Spring Gas Conference to the 2023 AGA Operations Conference (and soon the Southern Gas Association's 2023 Natural Gas Connect), there is a clear focus in the conversations taking place: how do utilities advance initiatives for safety, sustainability, and cost-effectiveness?

Looking for help harnessing the power of predictive analytics?

Fill out this short form to start a conversation about your needs and how we can help.

Whether driven by financial imperative, regulations, or public pressure, top priorities for the gas industry are safety and sustainability. The approach toward these objectives is multifaceted—from the industry's approach to operations in the office to fieldwork, leak detection, or instrumentation and materials used. But across all, predictive analytics (and the power of harnessing data) has revealed itself as a force multiplier with immense potential to augment these efforts.

Upon our return from these productive and successful events, we decided to dive deeper into a few of these topics.

Safety and sustainability: Leak detection and forecasting analytics to mitigate risk and emissions with safety as the priority

Using real-time data and predictive models can help gas operators:

- Identify potential leaks ahead of time
- Take preventative measures
- Minimize safety hazards

This early detection can play a role as both a forecasting and a direct detection tool, allowing utilities to predict work needs months in advance and identify the right crews within a given territory based on expected work.

Advancing this forecasting methodology into detection will allow for early detection and rapid response. Harnessing the nascent role of early detection will reduce the risk of accidents and environmental damage, optimize the operational costs to address the problem, and ultimately enhance the industry's commitment to safety and operational excellence.

While presenting on this topic recently, Mark Knox, executive consultant at E Source and retired director of forecasting and organizational effectiveness at Southern Company Gas, explained:

> By leveraging historical data and employing sophisticated algorithms, gas operators can identify patterns of asset failure and predict potential risks, enabling proactive maintenance, prompt repairs, and replacement of aging infrastructure.

The industry's commitment to safety and sustainability is augmented by the power of predictive analytics, empowering gas companies to optimize safety protocols, enhance incident response, and foster a culture of safety consciousness.

Cost-effectiveness: Maximizing efficiency and optimization through workforce management

In a competitive labor environment, it's important to maximize workforce management. Analytics can play a powerful role, allowing gas companies to align their workforce with fluctuating demand and operational needs, ensuring optimal staffing levels and increased productivity. But *how*?

By applying data-driven insights across customer call activity, leak detection, and asset risk planning, utilities can accurately forecast demand and deploy resources more efficiently. This ensures that the right people are in the right place at the right time.

Workforce optimization case study: The right people, in the right place, at the right time

A utility in the southern US needed to improve operational efficiency without negatively affecting system reliability, power delivery quality, and customer experience. The utility turned to E Source for help matching available resources with planned work.

To evenly spread the workload across functional teams, E Source built a workload scenario planning tool and used data-supported, management-aligned analytics to recommend changes to current resource allocation processes.

Read the case study

Learn more about E Source Digital Grid Solutions to see how we can help your organization. And check out our presentation on predictive analytics in the gas industry.

Downloade_source_natural_gas_analytics_forecasting.pdf

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