

Energy and Revenue Forecast Benchmark

Objectives, Findings, and Conclusions



The overall goal of the Energy and Revenue Forecasting Benchmark was to develop an understanding of how various factors affect the ability to accurately forecast in the current business environment.

Small sustained improvements to the intermediate (month-ahead & annual) forecast can create millions of dollars of value for medium to large-size utilities.

In 2003 Capgemini, in collaboration with Exelon, conducted a benchmark of intermediate (month-ahead & annual) energy and revenue forecasting in the US.

To accomplish the benchmark, ten utility companies were surveyed to understand how four specific areas affect their ability to accurately forecast intermediate energy and revenue in the current business environment.

The survey components included in the benchmark were:

- **Governance & Integration** – The control of the policies, organization, and processes of the forecasting function and its integration into the business
- **Environment** – The external conditions impacting the forecast assumptions, data, and methods
- **Uncertainty** – Understanding the effect of uncertainty on forecast precision and accuracy
- **Data and Models** – The current state of data and models used by the industry for intermediate-term forecasting and gaps versus best practice.

FORECAST AREA	IMPROVED FORECAST VALUE DRIVER
Demand Forecasts	<ul style="list-style-type: none"> • Minimizing the need for additional supply or generation capacity • Delaying the timing of capital projects
Energy Forecasts	<ul style="list-style-type: none"> • Optimizing energy procurement and risk management • Identifying additional energy for long-term market commitments
Revenue Forecasts	<ul style="list-style-type: none"> • Improving accuracy in quarterly financial reporting & reducing variance in revenue forecast • Minimizing organization time spent on re-budgeting process and governance

Components

Governance & Integration

Only one of ten utilities reported forecast governance and performance monitoring initiatives which met our recommended standard for the utility industry. No other surveyed utility reported any type of performance monitoring system that included policy, process, and reporting components.

No surveyed utility reported using an integrated set of Key Performance Indices (KPIs) to measure overall energy and revenue forecast performance.

Of the utilities surveyed, half are faced with significant to severe forecast complexity in developing their intermediate energy and revenue forecasts (i.e. regulatory considerations, geographic diversity, customer choice).

Environment

Utilities with customer switching face the most complex forecasting environment (30% of the utilities surveyed fall in this category). To compare forecast practices and performance, utilities should select peers based on multiple

forecast characteristics (similar scope, scale, regulatory structures, weather, economy, etc.) not just financial performance.

Uncertainty

Especially for the larger utilities, achieving Best-in-Class forecast performance is critical in minimizing risk exposure (through reducing error and variance in forecast requirements).

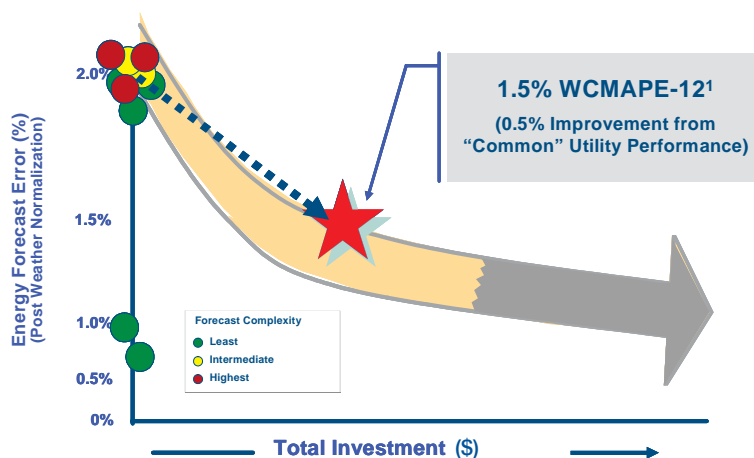
Data and Models

All surveyed utilities are confronted by poor quality of incoming data. This is primarily due to the lack of a forecast framework integrating data and information across company (and external) sources.

Conclusions

Two fundamental conclusions were reached through the intermediate energy and revenue forecast benchmark:

1. Sarbanes-Oxley necessitates immediate improvements in governance and accuracy in forecasting
2. Utilities can save millions to tens of millions of dollars annually through:
 - a. Minimizing or delaying capital projects, and
 - b. Optimizing procurement, trading and risk management activities



¹ WMAPE-12: Weather Corrected Maximum Absolute Percent Error (12 Month Average)



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