SAP Solution Brief
SAP for Utilities
SAP Smart Meter Analytics, Powered by SAP HANA

Turn Smart Meter Data into
Powerful Insights and Actions

Quick Facts

Summary

With SAP® Smart Meter Analytics software, you can turn massive volumes of smart meter data into powerful insights that transform customer interactions and business operations. Breaking through the limitations of current analytical tools in the market, it delivers instant, in-depth customer insights and advanced customer segmentation based on energy consumption patterns. You can also perform energy efficiency benchmarking and provide customers with self-service access to energy data.

Business Challenges

- Increase effectiveness of demand-side management programs
- · Comply with regulatory targets
- Generate revenue and reduce energy costs
- · Improve accuracy of load forecasting
- Reduce churn rates in deregulated markets

Key Features

- Powerful customer insights Instantly aggregate data and analyze customer energy usage at any level of granularity, aggregation, and dimension
- Advanced customer segmentation Precisely segment customers based on consumption patterns
- Energy efficiency benchmarking Compare energy usage of customers against peers; use root cause analysis to improve their energy efficiency
- Access to insights for end customers Empower customers with self-service access to energy usage insights

Business Benefits

- Increase adoption rates for demandside management programs by precisely segmenting and targeting customers
- Reduce direct energy costs via more accurate load forecasts based on energy consumption patterns
- Achieve energy savings and emission targets via more effective energy efficiency programs
- Increase revenue by up-selling and cross-selling new energy services
- Reduce revenue loss via increased transparency into smart meter data and benchmarking of accounts
- Boost customer satisfaction and retention by providing direct access to energy usage insights

For More Information

Contact your SAP representative, or visit us online at www.sap.com/hana.



As energy demand threatens to exceed supply, costs spiral up, and pressures to reduce carbon emissions increase, energy retailers need new ways to meet these challenges. One of the biggest opportunities lies in analyzing smart meter data and turning it into actionable insights for competitive advantage. Imagine being able to boost the effectiveness of demand-side management programs, strengthen customer relationships, drive new business services, and meet carbon emissions targets.

But until now, leveraging smart meter data in this manner had not been practical with traditional technologies in the market, which are limited by dataprocessing latency problems and thus do not enable energy companies to analyze massive amounts of data quickly enough.

To resolve this challenge, SAP offers SAP® Smart Meter Analytics software, which enables you to turn massive amounts of smart meter data streaming in from retail customers - residential, commercial, and industrial - into actionable insights in seconds. You can instantly analyze your customers' energy usage by location, building type and size, and by any other dimension and at any level of granularity you choose. At the same time, you can segment your customers with precision based on their energy consumption patterns and engage them through targeted energy efficiency programs and communications. Armed with lightning-fast analysis of your entire smart meter data set, you can predict energy consumption more accurately, balance energy demand and supply. and deliver benchmarking insights to customers.

LEADING THE WAY WITH SAP SMART METER ANALYTICS

SAP Smart Meter Analytics is powered by the SAP HANA™ platform, which can process massive volumes of data in memory so that the results of complex analyses and transactions are available for you immediately. This means business decisions can be executed without delay. By leveraging SAP HANA, SAP Smart Meter Analytics can provide instant and interactive analysis of your entire smart meter data set at any level of granularity, aggregation, and dimension. The solution enables advanced customer segmentation based on energy consumption patterns, as well as energy efficiency benchmarking and root cause analysis to help customers improve their energy efficiency.

Armed with these deep customer insights, utilities companies can drive critical activities in new ways, such as demand-side management programs focused on specific customer segments to help achieve regulatory targets for energy efficiency and carbon emissions. Utilities companies can create new revenue opportunities while lowering their direct energy costs, thereby driving stronger financial performance.

Powerful Customer Insights and Segmentation Analysis

Given pressures to reduce carbon footprints and lighten peak loads, it's never been more important for energy retailers to understand and engage customers in demand-side management programs. Through financial incentives and education, these programs encourage customers to install energy-efficient appliances and use power during nonpeak hours, for example, thus contributing to reduced energy usage and less demand for costly peak capacity.

SAP Smart Meter Analytics helps you achieve these objectives by enabling business users to segment their customer base. They can then send out precise marketing communications that will resonate with each customer segment to promote energy-savings programs most appropriate to their usage patterns and priorities. To support segmentation analysis, SAP Smart Meter Analytics automatically generates consumption pattern profiles that identify and categorize customers who have similar energy usage behavior throughout the day. For example, you might discover that customers in different locations and seemingly opposite industries have very similar peak usage - in early evenings, perhaps, and again late at night. You can leverage these consumption pattern profiles together with customer attributes and consumption levels to create a new customer segment for the purpose of running a targeted energy efficiency program. During and after the execution of the program, you can even evaluate its effectiveness and return on investment by analyzing how energy usage behavior of the customer segment changed as a result of this program.

SAP Smart Meter Analytics empowers business users to answer such key questions as:

- Which customer consumption profiles diverge from their master data profile?
- Which customers could benefit from shifting to different tariffs?

Leveraging insight into consumption behavior, you can reduce direct energy costs – savings that can go right to your bottom line or be passed along to customers as more competitive pricing. For example, this insight allows you to buy power based on more accurate load forecasting, taking advantage of lower-cost energy time frames with confidence. You can drive higher adoption rates for your demand-side management programs while strengthening customer loyalty.

Benchmarking Analysis to Drive Energy Efficiency

With SAP Smart Meter Analytics, you can conduct energy efficiency benchmarking that compares the energy usage of customers against peer groups based on statistically predicted usage levels. With these insights, you can help your customers understand where they stand today and how they can improve their energy efficiency going forward. Business users at utilities companies can instantly generate different benchmarking analyses

by changing model attributes – such as sales square footage, opening hours, climate zone, and neighborhood – on the fly. Imagine the power of this functionality in the hands of sales representative talking with a business customer about purchasing energy efficiency audit services.

SAP Smart Meter Analytics lets you perform root cause analysis on energy usage variances using automated heuristics. For example, if energy consumption for a business is higher than expected relative to its peers, you may discover that this is due to the fact that management isn't shutting down equipment such as the HVAC system during nonworking hours. Or you may determine that air conditioners are not being set to a higher temperature during nights and weekends. Insights of this kind empower management to set new, energysaving policies that can save them money.

For deregulated utilities companies, these services represent new revenue generating opportunities, as well as tools to strengthen customer retention and loyalty. For regulated energy retailers, these analytically-driven services give you opportunities to improve energy efficiency for customers; this, in turn, helps you meet energy efficiency and carbon emission targets and claim incentive revenues offered by the government.

A Platform for Innovation in Processes and Business Models

SAP Smart Meter Analytics runs on the SAP HANA platform – an in-memory computing platform that lets you quickly access real-time insights on large data sets and run complex analysis, such as pattern recognition and simulations. You can use it to enable consumption-driven processes throughout your company by combining insights extracted from smart meter data with data in other SAP and non-SAP software and external data sources – for example, weather data.

SAP provides prebuilt, industry-specific data models and statistical algorithms that can be leveraged to support your smart meter data initiatives in different business areas. For example, rather than providing occasional written reports to customers regarding their energy consumption patterns, you can provide customers with instant access to this data using Web services that integrate with Web portals and mobile devices. A residential customer might use the selfservice portal to compare his or her household's energy usage to other similar households with electric heating that lie within a 20-kilometer radius. You can provide system load and asset performance monitoring services to generate new revenues or deliver more value to customers. The possibilities are

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wide ranging. And as your company becomes more grounded in data reflecting actual, current energy consumption, you can develop new and more efficient processes that boost operational performance and profitability.

REALIZING THE BENEFITS

With SAP Smart Meter Analytics powered by SAP HANA, you can:

- Drive higher adoption rates for demandside management programs by precisely segmenting and targeting customers and developing new tariff designs
- Reduce direct energy costs through more accurate load forecasts that are driven by powerful insights based on energy consumption patterns
- Achieve energy savings and carbon emission targets through more effective energy efficiency programs and service options

- Increase revenue sources from upselling and cross-selling new energy services by leveraging benchmarking analysis and deeper customer insights
- Reduce revenue loss by increasing transparency into smart meter data and benchmarking of accounts
- Improve customer satisfaction and retention rates by providing direct access to energy usage insights and delivering targeted energy efficiency programs and communications

LEARN MORE

Are you ready to transform your smart meter data into a competitive advantage that will help you engage your customers in innovative, personalized ways and drive stronger business performance for your company? Then contact your SAP representative or visit us online at www.sap.com/hana.