



SAS® UTILITY – AN OVERVIEW

Table of Content

1	Industry Expertise	3
1.1	What makes SAS different?	3
2	Solutions	4
2.1	Demand forecasting and energy analytics	4
2.2	Energy pricing and settlement	4
2.3	Operational excellence	4
2.4	Customer relationship management.....	4
2.5	Strategic performance management	5
2.6	Risk management.....	5
2.7	Activity-based management	5
2.8	Financial management	5
2.9	Supplier relationship management	6
2.10	Human capital management.....	6
2.11	IT management.....	6
3	Customer References	7
3.1	Cemig - Forecasting.....	7
3.2	Copenhagen Energy – Demand Forecasting	8
3.3	Dominion - Risk Management	10
3.4	EDF – Data Quality and aCRM.....	11
3.5	ENERGA Poland – Data Integration and aCRM	12
3.6	ENMAX Energy - Business Analytics	13
3.7	ODEC - SAS Analytics energizes utility cooperative's demand forecasts.....	14
3.8	Salt River Project – Forecasting and Web Based Reporting.....	15
3.9	Snam Rete Gas: Forecasting the future to act on the present	16
3.10	Miscellaneous	17
3.10.1	ENEL SERVIZI S.r.l. – Demand Forecasting.....	17
3.10.2	British Gas Trading Ltd – Demand Forecasting.....	18
3.10.3	GS EPS – Demand Forecasting.....	18
3.10.4	Reliance Energy Limited – Demand Forecasting	19

1 Industry Expertise

SAS is uniquely placed to provide solutions for utility companies – solutions that help you to address changing customer demands and other industry-wide challenges, as well as the critical issues that have a direct impact on your day-to-day operations, organizational structures and strategic direction.

With a proven track record of working with major utility companies worldwide, we can help you to adapt and evolve your business.

SAS® solutions for the utility sector provide you with the power to know your customers, your suppliers and your organization. You can access information from transactional systems, enrich it with external content, and make the results available fast. From mainframe terminals and Windows clients to web browsers and wireless devices, SAS enables you to filter through mountains of disparate data and transform it into useful knowledge.

1.1 What makes SAS different?

The IT sector is awash with software to automate, execute and track business transactions. What makes SAS different is that we help organizations make the most of investments in infrastructure, operational databases and applications. We do this through a layer of business intelligence that delivers a vital commodity in today's global marketplace: This enables industry leaders to translate corporate data into a healthier bottom line.

Whether you want to track the performance of the entire enterprise or need to make sense of data that relates to customers, suppliers, finances, the regulatory environment or your IT operations, our packaged solutions address specific business needs. Founded on industry best practice and 25 years' of awardwinning technology, SAS solutions integrate with your existing infrastructure while still allowing you to tailor applications. This means faster implementation and lower development costs – and neatly avoids being locked-in to a 'one size fits all' solution.

And it's not just about technology. We also offer training services, proven implementation methodologies and world class technology solutions; all co-ordinated to deliver rapid ROI. From the boardroom to the data centre, SAS provides utility companies with the power to know.

The following pages tell you a little more about the areas in which we can help your business.

2 Solutions

2.1 Demand forecasting and energy analytics

To prosper, utility companies need proven analytics to create predictive models in areas like demand forecasting, price forecasting and generation forecasting. SAS provides you with the analytical flexibility to address a complex changing market, plus the ability to incorporate information at a far greater level of detail and from more data sources. The net outcome is to reduce risk to the bottom line. Crucially, SAS delivers a fully integrated environment able to support multiple business functions across generating, trading and retail environments. Information can be extracted, manipulated, analyzed and communicated to and from multiple sources and applications, both internal and external. Key features include:

- Forecasting and predictive modelling for load forecasting, demand planning, supply optimization and predictive maintenance
- Data management to and from one or more data repositories
- Data visualization to share information in more attractive and accessible ways.

2.2 Energy pricing and settlement

Sophisticated back office settlement processes are needed to track what's happened and to ensure fiscal agreements are applied to every transaction. SAS eases the complexity of pricing and settlement through the ability to manage both the large volumes and individual nature of deals, and to incorporate different time scales and pricing disparities across regions. In this way you can track and settle each energy trade effectively.

2.3 Operational excellence

As the effects of liberalization continue to be felt, the ways in which utility companies recover the costs of investments have changed. Instead of recovery of costs in a regulated ratemaking environment, recovery of the costs of unregulated physical assets – like generation plants, pipelines and transmission lines – is strongly influenced by market price. So efficiency of operation has become even more critical to success. SAS helps you implement strategies that reduce costs, enable operational excellence and improve the lifetime value of assets.

The knowledge provided by SAS can be applied at all levels; for example, targeting investments in new equipment to optimize processes like maintenance, scheduling and document management, thereby improving efficiency and market agility. At a higher level, you can support investment in business solutions designed to optimize revenues, such as plant information systems, asset management and trading applications. Based on the premise that 'if you don't know, you can't manage', having fast access to real-time performance information on operational assets can, in some ways, be even more valuable than the asset itself.

2.4 Customer relationship management

SAS Customer Relationship Management (CRM) Solutions enable you to implement smarter customer strategies and maximize customer profitability. Superior analytical CRM along with proven methodologies and services mean you can understand customers across all channels – not only reacting to problems, but proactively uncovering previously hidden solutions to pressing challenges. You can:

- Create and benefit from reliable, high-value customer intelligence in fast-moving markets
- Gain a panoramic customer view
- Maximize return on marketing campaigns
- Improve customer acquisition and retention
- Rapidly achieve significant and measurable ROI
- Identify true cost to serve by individual customer and customer segment.

2.5 Strategic performance management

SAS Strategic Performance Management supports both strategic and operational decision-making. You can 'capture' your corporate strategy, then integrate, distribute and analyze enterprise-wide information, and act upon it – ahead of your competitors. In particular, you have clear and concise performance indicators that show the cause and effect relationships within your strategy, your operations and end results. Focusing in this way means you can identify the best practices that lead to future success together with the true sources of business failure.

You can:

- Track, measure and execute corporate strategies
- Share information fast to enable appropriate action at the right time
- Tap into the collective knowledge of employees and maximize each person's potential
- Create a single version of the truth to cascade or escalate to any level of the business.

2.6 Risk management

SAS Risk Management enables you to track, measure and manage market, credit and trading risk in the ways that are most appropriate to your operation and its business requirements. In addition to superior data management capabilities, you have access to a full suite of market risk analysis techniques that include mark to market, scenario and sensitivity analysis, and Value-at-Risk using methods such as Monte Carlo. Credit risk techniques supported include Current Exposure and Potential Exposure.

2.7 Activity-based management

SAS Activity Based Management (ABM) creates transparency in costs and enables you to see the causes of costs: this means valuable insights into processes and profitability throughout the supply chain and across the business. It's all about informed visibility – for example:

Servicing customers is costly and margins are slim; analysing how you serve customers in different ways, and comparing total costs to the revenue each customer provides, gives you knowledge in key areas like customer profitability, retention and acquisition.

In distribution, you need to understand asset management practices to support informed decisions on asset upkeep and replacement, and to initiate actions that drive profitability. Using SAS you can assign direct, indirect, overhead and contractor resources based on actual usage rather than averages that distort true costs – managers can compare regions, types of labour, sub contractors and more; they can challenge existing working practices, create new investment scenarios, understand impacts on costs, and provide competitive quotes when bidding or evaluating external tenders.

2.8 Financial management

SAS Financial Management Solutions provide a single approach to planning, budgeting, consolidation, analysis and reporting. As part of a total approach to performance management, you have the power to plan, analyze and report on financial information, using the insights gained to drive strategic decisions and manage financial risk. Capabilities include:

Planning and budgeting: align strategic objectives with performance measures by planning and allocating resources more effectively

Financial consolidation, analysis and reporting: automate the entire consolidation process and adapt to changing reporting standards and greater disclosure requirements; at the same time, advanced data management means you can drill down and view the business from any perspective.

2.9 Supplier relationship management

SAS Supplier Relationship Management helps your organization to implement sound management practices, increasing your competitive advantage through enhanced supply chain management. You can collect, analyze and exploit all aspects of your supplier data and purchasing history, gaining valuable insights along the way. Having this critical information means you can optimize strategic sourcing and achieve significant cost savings. You can:

- Create an accurate overview of total spend
- Select the ideal suppliers
- Match business objectives with individual supplier performance
- Identify cost consolidation areas.

2.10 Human capital management

SAS Human Capital Management combines strategic information with workforce analytics – so you can manage your HR requirements more effectively and clearly show HR's contribution to the bottom line. You can:

- Measure the strategic value of human capital investments
- Align people, processes and technology around common goals
- Deliver proactive workforce planning and the knowledge to make decisions quickly.

2.11 IT management

Utility companies are under pressure to manage and reduce IT costs without adversely affecting the services the business depends on. SAS helps square the circle with, for example, performance and capacity management solutions to control both hardware and software costs, and activity-based models that enable costs to be 'managed out' of internal systems and processes. At the same time, financial management solutions align IT activities with services as the business understands them, providing a catalogue of costed services so the organization can better define its needs, while service level management clearly shows how well IT is delivering. In short, SAS IT Management Solutions deliver an enterprise-wide approach.

You can:

- Gather and use data from all platforms, systems and applications, creating a single integrated view of IT
- Understand the real costs of IT, accurately price services and build a solid basis for process improvements
- Deliver actionable management information on quality of service and adherence to SLAs
- Manage relationships with outsourcers to achieve cost savings without compromising service.

3 Customer References

3.1 Cemig - Forecasting

Brazilian energy giant Cemig achieves forecasting precision with SAS®

To meet the demands of the new model for the electric power sector, Cemig has decided to refine its energy demand forecasts and adopt a system to achieve precision and flexibility.

After facing rationing in 2001, the companies in Brazil's electric power of adapting to a new model for the industry that was established by that country's federal government in March 2004. One of the pillars of this design, the rules for buying energy from distributors, requires an extremely high degree of accuracy in load forecasting. In order to enhance the accuracy of its forecasts, the distribution area of Cemig (Companhia Energética de Minas Gerais) has opted to adopt a complete system for projecting demand, combined with a tool for homogenizing the information obtained from disparate databases.

To a greater or lesser degree, all Brazilian distributors have had to perfect their forecasting processes as a result of the new model for the electric power sector. Based on a strategic directive from the board that the company should adapt as best it could to the new rules, Cemig technical teams analyzed availabilities in the world market and recommended the SAS solution, which is currently in the final phase of deployment.

According to Agostinho Faria Cardoso, Superintendent of Cemig's Wholesale Energy Purchase and Sale Department, internal development was never an option. "We believe that each company has its own expertise. Ours is energy distribution. SAS has hundreds of professionals, including engineers and mathematicians, who are engaged in constructing specialized systems, which is to say that they are certainly more well-informed about advances in this field and can supply the best methodology and the best system of forecasting."

SAS enables flexibility

In preparing energy load forecasts in the medium and long terms, economic performance indicators are utilized, such as gross domestic product, population density and consumer sector sales expectations. For short- and very-short-term forecasts, aspects such as normal consumer behavior, seasonal factors and weather forecasts are taken into account, in addition to possible emergency situations.

Based on all of these variables, SAS High-Performance Forecasting develops various scenarios and then projects the respective energy needs for each one of them. In order to do so, the system combines various advanced technological resources, such as neural networks, time series models and decision trees, among others.

According to Cemig's superintendent, one of the main advantages of SAS High-Performance Forecasting is its extreme flexibility. "The system is not a black box. We can set up various scenarios and modify them as economic or environmental conditions change, for example, and as we make the purchases," Faria Cardoso says. "In addition, it is quite user-friendly. It is easy for our analysts to organize the data, alter it or consult it; in short, interacting with the system is very simple."

Faria Cardoso also applauded the SAS consultants who contributed to the project. "Over the eight months of the project, SAS specialists worked together with our employees. The result is a system that is fully parameterized for forecasting energy loads and also customized for the type of files used by Cemig," he explains. "At the same time, the distribution team was undergoing training in order to exploit all the potential of SAS High-Performance Forecasting."

Security and credibility

To feed the forecasting system, Cemig uses different databases, both internal and external, such as that of the Electrical Energy Chamber of Commerce, the institution responsible for mediating the purchase of energy among generators and distributors. To ensure that the data is as up to date as possible and to avoid conflicting information, Cemig uses SAS Enterprise Miner.

"SAS Enterprise Miner transforms the data in different languages and from various databases into reliable information that can be handled securely," says the superintendent. "It would be useless to have an excellent forecasting system if it were based on incorrect data."

According to Faria Cardoso, access by Cemig's technical personnel to the SAS test base and to clients who already use the systems was crucial in the process of choosing a program. The

superintendent also noted the fact that SAS has been continually mentioned over the years as one of the best companies to work with was a contributing factor in the decision.

Change in profile

Of course, forecasting energy loads was never anything new to Cemig. The electric power sector has always worked with two major forecasting horizons: the long term, required to support the construction planning for power generating plants, and the very short term, which depends upon variables that are impossible to control, such as sudden changes in temperature.

At the distributors, forecasts can go to the extreme of being formulated daily and even hourly. A classic example of how these very short-term forecasts are used in Brazil can be seen on the days when World Cup football (soccer) is televised. As Cemig's superintendent explains, during game time, consumption is low, basically only from TV sets that are turned on. As soon as the game ends, there is an exceptional – and simultaneous – increase in demand, the so-called "ramp-up" effect.

If forecasting is nothing new, what has changed? The new model for the electric power sector has created a more competitive environment, in which load forecasting has become an absolutely critical factor for distributors. This environment has emerged since energy purchases are now done exclusively by means of auction sessions, based on the criterion of lowest price.

Before each auction session is held, the distributors have to send the Ministry of Mines and Energy its load forecasts for three scenarios: startup of supply after five years of the contracting, after three and after one. The adjustments in demand and in consumption of energy are made in the very-short-term auction sessions, where prices are higher than in the normal auction sessions.

Load forecasting five years in advance has as its objective to allow the government to plan for bid tenders on new power generating plants. These enterprises require a quite long planning horizon, which can extend for up to 20 years.

Good for both shareholders and consumers

The precision of forecasting is vital, because the law provides that a distributor must use 100 percent of the energy contracted for, and the margins of variation permitted are very small. At the annual rendering of accounts to ANEEL (Agência Nacional de Energia Elétrica/the National Electrical Energy Agency), if the company has purchased less than 100 percent of the energy distributed, it may be subject to fines. The objective of the government in this regard was to establish rules to ensure there is no shortage of energy.

On the opposite end, if the distributor buys too much energy, it may only pass this cost along to energy rates if the margin of error is 3 percent or less. If it has acquired energy at a higher rate, the distributor will be subject to price risk (contract versus spot) without passing this portion along to the consumer. With this rule, the government was aiming to guarantee the lowest rates possible.

While the new model for the Brazilian power industry permits some alternatives to "place" the distribution load inside those narrow limits (from 100 to 103 percent), purchasing more or less power than is required based on poor forecasts creates challenges when administering the load, which may lead to losses. For this reason, although the previous system was working satisfactorily and with a low level of error, Cemig felt it ought to increase the quality and accuracy of its forecasting even further.

Nowadays, says Faria Cardoso, Cemig has a system with an excellent cost/benefit ratio. "The more often we get it right, and the earlier we do so, the greater the chance of having cheaper energy and the smaller the chance of an energy shortage," he says. "That is essential for Cemig, which bases its operations on respect for both its shareholder and consumers."

3.2 Copenhagen Energy – Demand Forecasting

Accuracy in forecasting amounts to cost savings in delivery

Fortunately, it is extremely rare for there to be a major power failure in Denmark. However, when it does happen, as it did in September 2003, when the whole of Eastern Denmark went black together with Southern Sweden, there are repercussions. On that occasion the fault consisted of a fall-out in a Swedish power station in Oscarshamn which, together with a breakdown at a switching station, caused a power failure of major proportions because the production was less than the consumption.

Electricity is traded in a free market as a commodity, but electricity cannot be kept in storage. It must be used at the same moment it is produced, otherwise the surplus product effectively goes up in smoke. On a daily basis, Denmark must maintain the balance. In Eastern Denmark, it is the

Elkraft System that has the overall responsibility for the electricity supply. Elkraft has 16 partners responsible for balance. Every day of the year, the partners must report planned consumption and production of electricity – including wind turbine power – to Elkraft. This forms the plan for anticipating power consumption and producing the right amount of electricity, hour by hour over a 24-hour period.

As of 1 March 2004, Copenhagen Energy (Københavns Energi) was approved by Elkraft as a balance partner. From now on the Copenhagen-based energy company will predict the next day's consumption of electricity hour by hour. The balance between consumption and the purchase of electricity reflects directly in the baseline because any imbalance will be expensive and, in the worst case, the supply reliability is threatened.

Financial incentives for accuracy

"There is always equilibrium in the plan that is drawn up, for no balance partner is permitted to report anything other than precisely the consumption that matches their buying of electricity," explains Market Manager, Lene Sonne of Elkraft System. In practice, however, Elkraft has a safety margin available in case consumption and production do not match the predictions.

Elkraft is responsible for keeping the current stable and monitors the consumption round the clock. Because those responsible for the balance as a whole have consumed less power than notified, if imbalances do occur, then Elkraft buys the surplus power and sells it on to other buyers. Or, if necessary, Elkraft ensures that a power station with which Elkraft has a prior agreement, reduces the production. Alternatively, the power station can increase the production of electricity if the consumption is greater than anticipated.

Control of the variations

"We are highly dependent upon the predictions of those who are responsible for maintaining target levels. Therefore, being responsible for balance is quite a demanding position. We use financial incentives to encourage them to predict as accurately as possible. In principle, it costs the balance partners more when they deviate – positively or negatively – from what they predicted," Sonne points out.

When the accounts are settled, the balance partner finds out the financial implications, as Elkraft checks and measures on an hourly basis to see whether the predictions for the day have been correct. Any departure impacts on the account in one way or another. When Copenhagen Energy became a balance partner on 1 March 2004, they did so with a brand new, advanced SAS system for forecasting electricity demand on the part of all their customers in Zealand.

"We conducted a wide range of tests on historical data and tried out parallel forecasts before we implemented the SAS solution, and each time the outcome was impressively close to the actual figures," explains Energy Market Manager Mikael Gynther, of Copenhagen Energy.

But even before that there was time allocated to developing a flexible model that is able to take almost all factors into consideration. The basic model is based on historical data pertaining to electricity consumption, but new input is constantly being added regarding movements in the customer population and the weather. In the same way, new and one-time events can easily be added to the calculation model when, for example, there are moveable public holidays, national sporting fixtures, cultural evenings, crown-prince weddings and countless other parameters that affect energy consumption.

Quickly recouping costs

Utilizing SAS technology for demand forecasting, Copenhagen Energy quickly recouped their investment because the new forecasting solution is faster, better and less expensive than the previous system, which involved external forecasting services. In fact, the solution was up and running in just 2 months and forecasting accuracy has doubled.

"It is of great advantage for us to handle forecasting internally. We expect the costs in connection with the precise predictions to be able to be reduced by up to 50 percent. So it is a matter of considerable savings," says Gynther. Annually, Copenhagen Energy handles up to three terawatt hours, corresponding to three billion kWh, or approximately 10 percent of Denmark's annual electricity consumption.

However, he is especially satisfied with the fact that the investment costs of the solution amounted to only about a quarter of what the energy company had originally expected when it decided to go in for a state of the art solution.

"This is a 'ray of sunshine story' on top of an especially successful project. It was finished in time. It is flexible and has a great commercial potential, and has also afforded us strategic opportunities

that we have not had before. At the same time it strengthens the supply security. In a nutshell, it is everything we had hoped for," says Gynther.

3.3 Dominion - Risk Management

In the new energy marketplace, the transition from old-line utility to modern energy company means close monitoring of commodity trading, oil and gas production, power generation and transmission, and energy marketing to customers in dozens of markets. The risks can be high, but the potential rewards are great. With SAS Risk Dimensions, Dominion prepares to reap the rewards.

Dominion, with headquarters in Richmond, Virginia, is one of the nation's largest energy producers. The company maintains a power-generation portfolio of more than 21,000 megawatts, one of the largest independent natural gas and oil production companies, a major pipeline and the nation's largest underground natural gas storage system. It has annual revenues of US\$10 billion. With these and other assets, Dominion serves nearly 4 million retail customers throughout the eastern United States.

As it evolves and expands in today's deregulated marketplace, Dominion confronts an environment of unsurpassed change and volatility. "The energy industry is in a very important evolutionary state right now," explains David Jewett, IT Manager for Dominion. "We're changing from an industry dominated by utility companies to an industry that has lots of energy marketers coming in. Learning to be competitive in this changing industry involves a new way of looking at risk and seeing risk as an opportunity that needs to be exploited."

Dominion employs a wide variety of risk management techniques aimed at exploiting risk to the company's advantage. "A major issue for all energy companies is risk management," says David Holden, vice president of risk management. "That's because we manage commodities across a broad spectrum that includes gas, oil, electricity and coal."

Part of managing risk for this portfolio means understanding that a hurricane in the Gulf of Mexico or a mild winter in New England can affect energy prices nationwide. Variations in customer demand, power production and energy costs are among the many variables that can impact earnings at Dominion.

To stabilize the impact, analysts at Dominion employ new technologies that construct predictive models and what-if scenarios. These models reveal the potential business effects of countless combinations of events. Dominion executives can then devise business strategies and commodity trading plans that not only limit their business risks but also allow them to exploit risk to the company's advantage.

SAS Risk Dimensions gives executives and traders the information they need to make knowledge-based decisions within their boundaries of risk.

Good Data Delivers Good Answers

According to risk management analyst Joe Cooper, advanced risk analysis requires a lot of data. "One of the hard things about risk management is that you need data. You need information about your company from a thousand different places," says Cooper. In fact, a single risk model might require information about production plant gas consumption, hourly energy usage, customer demand per region, and future demand given different weather scenarios and rate changes.

"Before SAS Risk Dimensions, we had to collect all this data in a hundred different programs," says Cooper. "Integrating this data was very difficult, but SAS has allowed us to connect to these different data sources and bring the data together for risk analysis."

Using SAS Risk Dimensions, Cooper and other analysts at Dominion create daily and monthly reports for the company's business executives and calculate specific risk statistics for commodity traders and operational employees.

In addition to these static reports, the system delivers a full view of the company's risk portfolio via the corporate intranet. Security is tight, but those executives and managers with access can discover up-to-the-minute information about the company's risk picture.

"Our chairman can look at a report that gives him a snapshot of the entire risk portfolio of our business, and he has drill-down capability to see each business unit's contribution to that larger risk picture," Holden says. "The executives responsible for each business unit can look at their specific risk picture and understand how it contributes to the larger risk profile for the organization. And they can drill down as well to find out how each individual transaction, trade or region contributes to their business unit's risk."

The Value of Risk Management

Not only does SAS give Dominion access to new techniques for data modeling and analyses, it also supplies answers more quickly than ever before. "What used to take us weeks, now takes us days or hours or minutes," says Cooper. "And obviously when our managers get this information, they're able to act on it. It's real in terms of our business; it has real consequences for us."

"SAS Risk Dimensions gives us much faster data manipulation and analysis than we've had before," Holden says. "So instead of knowing what happened the next day, we can know it 10 minutes later, or whatever is needed."

Time is of the essence on the trading floor. The quicker Dominion traders get information, the quicker they can make trading decisions. And with an immediate activity like trading, systems that support that speed are essential.

According to Holden, data quality is also essential on the trading floor. "SAS Risk Dimensions permits us to use far more sophisticated evaluation methodologies. We have greater confidence in the reliability and validity of the outcomes in analytics." And, he says that confidence allows Dominion to convert opportunities into cash through profitable buying and trading decisions.

"SAS Risk Dimensions is flexible and customizable," Holden says. "It allows us to take a very solid core product and customize it to our own business, our own needs and our own ideas about what risk management is. Without a doubt, Dominion is making better business decisions based on our enterprise risk management systems."

3.4 EDF – Data Quality and aCRM

Electricité de France has successfully implemented and optimized a solution for rapid extraction of SAP data for customer insight purposes. Working with internal business customers and information systems experts, the Analytical CRM Department has created KPIs that give the giant much greater market flexibility.

France's leading utility prepares for the open market

Electricité de France (EDF) is one of the world's largest utilities, with nearly 30 million customers in France and 15 million outside, and 2005 revenues exceeding €50 billion. EDF was state-owned until 2004. Like other former state monopolies, the biggest challenge facing EDF is the open market: EDF needs to compete in a fully liberalized environment by 2007.

"Our main objective is not to win new customers, but rather to retain as many as possible by improving our service," says Philippe Futtersack, Project Manager in the Analytical CRM Department at EDF. The department was set up in 2002 to serve internal customers in six business departments, including sales, marketing and financial control. Its responsibility is to identify where relevant data can be found within EDF, cleansing it and integrating external source data, and scoring customers, for example, according to their loyalty, profitability, lifetime value and the relevance of new commercial offers. It must also ensure that EDF has the necessary tools to meet evolving marketing needs.

"You cannot compete in an open market unless you understand your customers," says Mr. Futtersack. "So in 2004 we started an all-or-nothing project to deliver customer insight for the mass market, starting with small and medium sized enterprises (SMEs). The survival of the company depended on it."

EDF has rich sources of information, particularly about the top-level customer segments, but that is not enough in itself. "Analytical CRM needs to coexist with information systems, but really the approaches are very different. Our main function is to score customers and give overviews of the market structure, whereas the information systems approach is more interested in individual transactions and reporting aggregates," says Mr. Futtersack. "There are a lot of gaps in the information that have to be filled through SAS analytics, to turn it into true market and customer intelligence, and to make it meaningful for managers. And that is where my department comes in."

The challenge to provide these integrated customer views was especially difficult as the information systems were also in transition, with customer records being migrated from 2004 onwards to an SAP system. "We had the same customers appearing in different systems. So we had to consolidate and de-duplicate some information."

The SAP system currently contains 300,000 SME records. This will steadily increase to 2 million, but ultimately 27 million SME and household customer records will be on SAP – a huge amount of data. In the meantime, Mr. Futtersack's team has to provide customer insights based on moving,

evolving data without disturbing the integrity of the transactional systems – which, as Mr. Futersack points out, is no easy task.

“SAP places strong limits on accessing its data, which also presented a challenge. We were committed to SAP for transactional applications, but on the other hand, we were committed to SAS for our intelligence strategy. So we benchmarked SAS9 in mid-2005 on its speed of access to SAP and other source data, and we were very satisfied with the results,” says Mr. Futersack. “We concluded that SAS could extract any SAP data very rapidly. It is more robust and more scalable than the alternatives. Project synergies between EDF and its partners SAS and Bull helped to secure the right infrastructure through benchmarking and optimization,” he adds. In the tests, EDF achieved a 30 percent improvement in the time taken to extract 500 GB of SAP data, from six hours to four and a quarter hours.

KPIs on the move

Using SAS, Mr. Futersack’s analysts can overcome many layers of data complexity to provide coherent key performance indicators (KPIs) to its internal customer departments, for example, indicating trends in electricity consumption and demand, revenues, costs and profitability within the various Tier 1 and mass market – SME and household – customer segments, and by sales channel. This enables EDF to target customers for profitable new commercial offers. “With scoring, we can focus marketing efforts on the customers who are most likely to find the new offers appealing, so we can migrate customers up to 15 percent more cost-effectively,” says Mr. Futersack.

Internal customers in financial control use similar analysis to optimize costs and financial results. “The main benefit of SAS is that it can generate metrics for new KPIs for different functions far faster than using a traditional information systems approach,” says Mr. Futersack. “And this is of critical strategic importance as the company becomes market-driven.”

“There are also important benefits for EDF customers. The information we are providing enables EDF to improve its offers according to customer requirements, to better allocate resources for new commercial activity and to improve services. For example, we are decreasing call centre response times by up to 10 percent by identifying what are the most important and time-consuming questions from our customers.”

“We are also localizing our approach to customer service, supporting EDF’s goal of greater commercial flexibility through regional autonomy by providing better business intelligence,” says Mr. Futersack.

The project has been a complex one, involving the creation of KPIs in a very fluid environment and collaboration between business departments, analysts and information systems experts. “SAS is helping us to adapt to market realities by giving us customer insight and an overview of our business that we never had before,” concludes Mr. Futersack.

3.5 ENERGA Poland – Data Integration and aCRM

Ever since Poland opened its government and its economy in the 1990s, industries like the energy sector have faced deregulation. With deregulation, ENERGA Poland now faces competition from other electricity retailers and suppliers. To stay ahead in the thriving marketplace, ENERGA gleans customer intelligence using SAS for data integration and analytics.

Because other electricity suppliers now challenge ENERGA’s market share, company leaders recognize that they must rise above the competition by providing good value and quality customer service, says Zbigniew Wyszogrodzki, Director, ENERGA S.A. Torun.

“We thought about the future of deregulation and about the growth of competition in the market,” Wyszogrodzki says. “One of the first steps was to segment our clients. We began to put our clients in the right segments so we could give them better service, growing their loyalty to our company and guaranteeing that the loss of customers to our competition would be minimal.”

Integrating and making sense of ENERGA’s various databases became a top priority. Before turning to SAS to help sort through its customer data, ENERGA kept the information spread across different systems – often with duplicate information on some clients residing on systems throughout the company.

“Collecting the data and cleaning it allowed us to produce a real database of our clients,” Wyszogrodzki says. “Now, a customer won’t get different points of view from different departments in our company. Thanks to SAS and the analytics it provided to our segmentation project, we now get a complete view of customer.”

“With SAS, we can now predict the potential future behavior of customers,” he adds. “With this improved information on key customers, we can now avoid potential clients who might leave us for other energy distributors.”

Wyszogrodzki says customers now spend more because ENERGA now supplies the right level of service to the right people through direct marketing to specific clientele, which optimizes costs for further strength in the market.

3.6 ENMAX Energy - Business Analytics

When ENMAX Energy Corporation, the leading competitive electricity retailer in Alberta, Canada, finished the implementation of its RiskBench (based on SAS Enterprise BI Server), it was pleased to see positive ripple effects transpiring one year later – including optimized decision making and forecasting, senior management confidence in the software and its information flow, and calls for more analytics.

ENMAX Energy is always looking for innovative ways to continue improving on its offerings to energy consumers, whether that's by bringing alternative energy generation technologies to the marketplace or adopting leading-edge systems to better serve its customers across Alberta. Opting to implement SAS Analytics is one step that is helping ENMAX Energy achieve its goal when it comes to balancing supply and demand.

"In addition to growing senior management demand for the reports we can produce with SAS Analytics, our biggest challenge now is that some of the original users have spread throughout our company and they want SAS analysis tools," says Davin Kivisto, Director of Forecasting and Portfolio Management for ENMAX Energy. "Our people want Outlook, Excel and SAS. It's evolving to more of a desktop item than a specialized program."

The newfound and expanding desire for more SAS analytical tools is the result of growing familiarity with SAS software's ability to support the company's energy trading, forecasting and analytical functions at its wholesale and retail organizations, Kivisto adds.

Taking a wider perspective, ENMAX Energy's adoption of analytics provides further evidence of the sea of change brought about by deregulation, because it demonstrates the increasing importance of the powerful analytical software needed to support the market transactions and risk management functions as companies tackle volatile energy markets and stiffer competition.

Challenges aplenty

Like all electricity retailers, ENMAX Energy faces the challenging daily task of balancing supply and demand. Customers' use of electricity varies by the minute, hour, day and month, and demand patterns are also subject to the weather and other variables.

In their unregulated environment, ENMAX Energy seeks to operate in a near equilibrium by implementing an integrated, active approach to managing price and commodity risks. The company strives to proactively monitor and protect itself against mismatches of demand to supply, using physical and financial instruments.

To accomplish these goals, the company requires its information technology systems to produce data that answers basic questions like: "What's our mismatch?" and "How do we replicate the multitude of demand, supply and market factors at hourly resolution?"

Answering these questions means that the company's IT systems need to deliver raw data to analysts in a timely manner to address the information needs of the operations and decision makers. This requires software that can handle large volumes of data coming from different places throughout the company, as well as from external sources.

To address their needs, ENMAX Energy wanted enhanced software tools to meet expanding analysis, reporting and data management requirements. The software needed to facilitate better margin-at-risk analysis for the organization, provide the ability to factor the effects of planned and unplanned outages, market transactions, fuel price fluctuations and other variables, and provide the information needed to take strategic actions to mitigate unfavorable situations.

Risk analytics at work at ENMAX Energy

After an extensive review of software tools, ENMAX Energy chose SAS for its effectiveness, speed, usability and capacity to analyze enormous amounts of data. ENMAX Energy found SAS tools to be easily audited and edited, enabling transparency and efficiency across the organization's business units.

Kivisto says the implementation went smoothly and that executive-level support from Lonnie Enns, ENMAX Energy's Vice President of Commodities, was critical to the implementation success along with his confidence in the forecasting department's vision. Once live, the software started providing high-quality information and faster-performing decision tools. And, whenever ENMAX Energy had a question, SAS and RiskAdvisory representatives were available for technical solutions or to provide industry perspectives.

"In addition to the power of the software, we found that the consultants from SAS subsidiary RiskAdvisory had the industry expertise and market experience to provide sound counsel," Kivisto explains. "We bounce ideas off them from time to time and they provide great perspectives. This dynamic helps instill confidence among management that our solutions are in line with industry standards and appropriate to our current challenges."

Training, ease of use and return on investment

According to Kivisto, the software was intuitive and easy to learn for new users within the company. While SAS has numerous training programs available for its customers, ENMAX Energy employees approached it as they do most programs, by wading in, plugging away and working through it.

"We have smart users, so the hands-on training approach worked for us. User uptake of the software has been good because the application has delivered solid results," he explains, adding that the program paid for itself in terms of improved decision making within the first full quarter of its implementation. "The Risk Management Committee also sees how valuable the Web reporting capability is for sharing and improving wider decision making. We bought the solution for its analytics and discovered a reporting function that's greatly valued."

3.7 ODEC - SAS Analytics energizes utility cooperative's demand forecasts

The Old Dominion Electric Cooperative (ODEC) saved utility customers millions in its first year of using SAS Analytics to forecast energy demand. The savings helped the not-for-profit lower rates four times. With better forecasts, the cooperative hopes to continue keeping costs low and service levels high.

ODEC provides wholesale power to 11 not-for-profit distribution cooperatives in Virginia, Maryland and Delaware that serve 1 million member customers in the rural and suburban portions of those states. "Each cooperative has unique characteristics, its own weather and economic drivers that affect growth," explains David Hamilton, Manager of Load Forecasting. ODEC owns power plant assets and also seeks to purchase power. For energy purchases, the cooperative must contract months in advance. Bet wrong about the weather or energy needs, and ODEC is at the mercy of the spot market.

"If I don't buy enough, I have to pay whatever the market price is at the time I need to buy. If you have excess, you have to sell it for whatever price you can get," Hamilton says. "The electric utility field is fairly unique. But the problems we face each day are the same as those in energy, gas or oil."

SAS allows Hamilton to forecast more efficiently. This provides ODEC with nimbleness when it comes to buying and selling power and planning for the future. "When you're investing up to \$3 billion in a power plant, you need to be sure you're going to use it when you build it," Hamilton says.

SAS Forecast Server allows Hamilton's department to use the most sophisticated forecasting models and techniques available, including exponential smoothing models, ARIMAX models, unobserved components models, intermittent demand models and dynamic regression – plus user-defined models. SAS models are used to support system analysis, hedging models, financial forecasts, and future resources for energy and demand. With SAS, ODEC can:

- Quickly adjust for changing conditions. Forecasts take half the time to build. Unforeseen changes – a cooler summer or colder winter – can be quickly worked into a forecast.
- Understand each cooperative's individual market while also aggregating data for a big-picture look. Individual market snapshots help ODEC choose where to buy power from. An aggregate look helps plan for power needs five, 10 or 20 years down the road.
- Factor in multiple data sources from retail sales to population trends along with daily weather information that goes into such detail as wind speed and cloud cover. SAS allows ODEC to understand every variable in a model and how it contributes to a model's results. The cooperative can run competing models against each other to choose the best one. It can also screen outlier factors – like a hurricane – to avoid skewing the model.

- Manage effectively despite the volatility that smaller energy providers are more prone to experience.

“Utilities with large loads can stand a lot of variants and still have a pretty good forecast. We’re much smaller and our variability has a propensity to be higher,” Hamilton says.

“We couldn’t do what we do without SAS,” Hamilton says. “There is no other software I know of that has that amount of flexibility and power.” And it pays enormous dividends to ODEC’s member customers. “We actually lowered the rate we charge for wholesale power four times in the past year. The cooperative can pass that benefit directly along to the members who have been struggling.”

Streamlining the forecasting process

In the past, ODEC used SAS for some reporting but used another forecasting tool and Excel spreadsheets to cobble together forecasts. “It was labor-intensive, but people understood the spreadsheets so that’s how it was done.” Hamilton found other forecasting products lacking in capabilities and believed from his prior use of SAS that SAS Forecast Server would provide a more robust solution.

Hamilton also uses SAS to answer analytics requests from other ODEC staff members and to look at data that comes in from meter readings. “SAS came in really handy for the AMI (meter) data because the sheer volume would outstrip any Excel application or basic desktop application,” says John Robinson, Business Systems Analyst.

“Our organization is not one to add people. If we need to do another project, then I need to wear another hat. We couldn’t answer these questions for the organization if we didn’t have SAS,” Hamilton adds.

Working with SAS to implement SAS Forecast Server made the process smooth, says Hamilton. ODEC uses SAS partner Zencos to administer the solution. A SAS Gold Partner, Zencos provides SAS clients with services required for installing, optimizing and managing the SAS Business Analytics Framework. “The whole team at SAS has been so helpful,” Hamilton says.

Ultimately, Hamilton says, SAS takes the guesswork out of interpreting forecasts. Other solutions can tell him that power usage is down and trending toward staying that way, but only SAS helps him understand if that is related to weather or the economy or both. “If I didn’t have SAS I probably wouldn’t know how to do this. It’s nice to be able to get a feel for how much variability is in each component that drives our sales. I know SAS has a lot of different customers with a lot of data that use SAS in different ways. It’s the same for an electric utility. We have a lot of data. We have to have a system that can crunch large data sets, and you can’t do any kind of analysis on these large sets without SAS.”

3.8 Salt River Project – Forecasting and Web Based Reporting

Arizona is a land of extremes: In the northern part of the state, temperatures dip to nearly zero degrees Fahrenheit amid snowfall in winter while the southern desert bakes in 110-degree heat in the summer. Yet the Grand Canyon State remains one of the most desirable places to live in the United States.

That’s, in part, thanks to the work going on at Salt River Project (SRP), which celebrated 100 years of service in 2003. SRP, based in Phoenix, was established in 1903 as the nation’s first multipurpose reclamation project authorized under the National Reclamation Act. Today, SRP is the nation’s third-largest public power utility and one of Arizona’s largest water suppliers, providing power to about 940,000 retail customers throughout a 2,900-square-mile service territory in central Arizona.

SRP operates or participates in seven major power plants and other generating facilities throughout the Southwest.

Lowering Customer Costs by Ensuring Favorable Deals

SRP’s primary responsibility is to deliver low-cost water and electricity to its customers. Having domesticated the desert, SRP now brings the sometimes wilder extremes of the wholesale electricity market under control with help from SAS. Electricity costs are ultimately determined in a real-time market where suppliers and generators buy and sell power based on current load availability and consumer demand. With SAS, SRP accurately forecasts for up to 24 months how much excess power it will have available for wholesale sales.

“To be successful in the wholesale electric industry, you must have very good models. Models help project where you have excess electricity, and subsequently, you can make better decisions on

when and how much you can sell," explains Mike Krause, manager of operations support in SRP's supply and trading group.

For example, traders need to know how an outage at a power plant will affect value on certain deals or whether excess power will even be available to sell. Or what will happen to net revenues if retail load takes an unexpected dip. "We can flip a switch in our model and minutes later have that output in our hands," says Harry Sauthoff, Principal Financial Analyst.

Harnessing the Data

To create the model, the supply and trading team first had to harness all the operational data for all 24 hours, seven days a week. Again, they turned to SAS - this time to build a data mart to unify under one roof all the data relating to customer demand, supply, generation, trades and sales scattered in pockets and pools throughout the company. "The data mart evolved out of the need to access and assemble the data to project how much excess electricity we have," Krause says. "We knew SAS would allow us to grab the data from all the various sources, and there were a lot of sources of information we needed to feed the model set. We picked SAS because we had staff with SAS skills and knew it could get the job done – and get it done quickly."

Controlling Their Own Destiny

SRP's supply and trading team updates the data mart nightly, and they are no longer at the mercy of other departments for access to data. SAS gives them quick, easy access to 10 years' worth of information via Web browser. "Before we had SAS, we had to use programmers from our IS group to give us downloads of the data we needed," says Steve Petruso, Senior Computer Analyst. "Now we can access the data ourselves, when we need it, with our own expertise."

To help design the data mart, refine the model and forecast techniques, and build a Web-reporting interface, SRP turned to a local SAS Alliance partner with expertise in forecasting and SAS development. "The old SRP model took a long time to update," says David Kuhn, Owner of Innovative Idea Design, a SAS Alliance Partner based in Phoenix. "Now we can update it daily with new forecast assumptions in just minutes – and the results are immediately available over the Web."

With such greatly improved reporting capability, the traders gain more insight into what they have available to sell – meaning they rarely have to debate their positions. That allows SRP to develop successful trading strategies and other groups can use the information for activities such as preparing budgets.

Confidence in the Numbers

The SAS data mart and Web based reporting gives traders more confidence in the numbers because they always have access to the latest information. "That was a big problem with our old models," Sauthoff says. "Everytime we needed to make a decision, there was a lot of debate over whether the model was accurate. Now that we're using SAS, that debate is over." Also gone are the spreadsheets and manual entry required for modeling under the old paper-driven reporting system. And in addition to greatly improving its forecasting accuracy, SRP has discovered new ways of capitalizing on SAS' Web-based reporting capabilities.

"Upon completion of the model and data mart, SRP traders now have confidence that they are capturing more opportunities than ever before," Sauthoff says. "We are constantly benchmarking our model with graphical and numeric analysis. This data is available daily and is used to refine our assumptions that drive our model. Moreover, anyone can access the forecast performance reports via the Web."

The trading group generates millions of dollars per year for SRP, and the supply and trading team gains valuable insights using SAS, allowing them to better manage load and how they sell excess energy. "We're talking tens of millions of dollars in what this group does, so the impact of SAS has to be in the millions," Sauthoff says. "And gains that we make are used to offset retail prices. So the revenues we generate go to help our customers."

3.9 Snam Rete Gas: Forecasting the future to act on the present

Snam Rete Gas of Italy improves the precision and details of its demand forecasts by using SAS to generate them automatically. As a result, the company complies with industry regulations and meets its customers' service expectations.

In the energy sector's revamped operating and regulatory environment, an accurate forecast of natural gas demand is of utmost importance for Snam Rete Gas. A major player for natural gas

transportation and dispatching in the Italian market, Snam's mission has undergone major strategic changes due to market deregulation.

Today, its core business concentrates on transporting natural gas. Snam must ensure the proper allocation of nominated quantities at more than 7,000 delivery points, including local grids and major industrial and thermoelectric customers. All must comply with the established Italian Regulatory Authority for Electricity and Gas service criteria and ensure that all operations occur in conditions of maximum system safety and reliability.

A more granular segmentation of demand

Due to regulatory changes and customer service requirements, Snam Rete Gas needed to improve their operating processes and replace their current dispatching application base. The improved processes are vital for accurately routing gas toward its delivery points, monitoring the routing system and implementing necessary corrective actions. A key component of these operations is accurate and detailed demand forecasting.

As Snam Rete Gas CIO Natale Maiocchi points out, "One of our priority requirements is not only the improvement of forecasting precision, but also of forecasting details. In fact, we operate in a market regulated by the authority, and we must comply with very strict criteria in terms of service quality. We need to segment forecasts in a more granular fashion – by geographic areas and consumer type. We need to anticipate a future scenario involving an increase of nomination frequency. Furthermore, we need to overcome the technological obsolescence of applications implemented at different times and based on models that no longer meet current business needs."

Forecasting consumption requirement in detail

After considering their software options, Snam chose SAS® Forecast Server to help optimize its forecasting process. "Selecting SAS," states Application Systems Manager Marzio Bonelli, "is part of a policy that is directed toward system integration. In order to respond in a timely manner to business requirements, it is not only necessary to acquire performing solutions, but also to have the data rapidly available that allows us to base our decisions on facts."

With this solution, operators will be able to drastically accelerate the speed of the forecasting process, starting with large-scale historical series, while improving accuracy and degree of detail. Based on the number of drivers and transportation activities, weekly forecasts are produced to optimize stock management. And daily national gas forecasts – along with detailed consumption forecasts by geographic area and type of customer – are also generated.

"It's important to know in detail the requirements at each delivery point," Bonelli says. "The type of customer is also a relevant parameter because it strongly affects consumption, as in the case of thermoelectric and industrial companies."

Forecast automation and speed

Since the solution promises significant results, Snam hopes to extend it to other business areas, such as risk management in financial areas or long-term forecasting of consumption trends. But what benefits are expected?

"First of all," Maiocchi answers, "the ability to automatically generate accurate and reliable forecasting models translates into time savings and is a determining factor in the event of a nomination frequency increase. Secondly, ease of use through an intuitive graphic interface and simplicity in generating reporting translate into a simpler distribution of forecasting within the company. And finally, a reduction in services costs."

Accenture adds value

Snam Rete Gas chose Accenture for system integration. The company picked Accenture and SAS because of their joint experience in the utilities field, both nationally and internationally, according to Carmine Artone, Senior Executive, Accenture. "The ability to provide accurate and transparent information is vital in order to obtain excellent performance and provide better customer service, particularly in complex regulated markets," he says. "The choice of a system integration partner is fundamental for the successful outcome of similar projects so as to achieve the expected benefits while also complying with planned schedules and budgets."

3.10 Miscellaneous

3.10.1 ENEL SERVIZI S.r.l. – Demand Forecasting

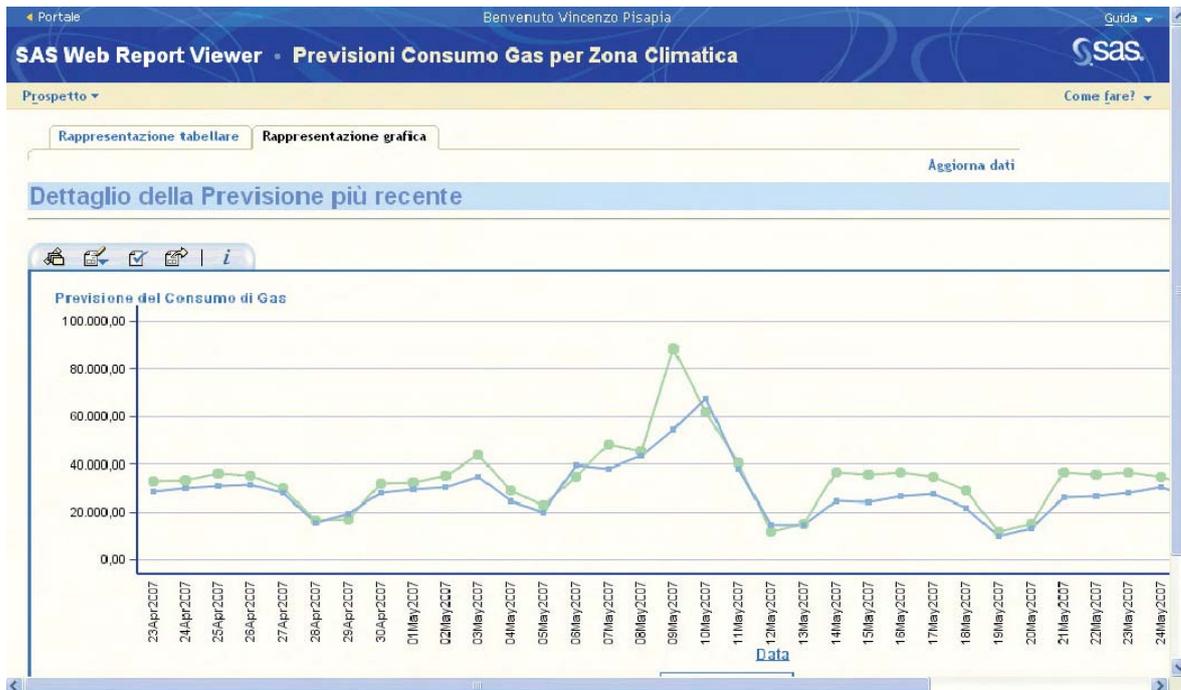
Capability Vision: SAS solution is based on models generated by Forecast Server as well as on analysis reports created with Enterprise Business Intelligence Server. Time series are processed in

order to make available the input data needed to feed Forecast Server thus generating accurate forecasting models in a fast and flexible manner. Models are executed daily or can be required via SAS web portal that is also collecting all relevant analysis reporting done thru OLAP.

Critical Issues: Customer needed to implement flexible forecasting tools in order to optimize gas demand and to achieve more accurate forecasts on gas consumption data.

Reasons: No system was in place

Results: Customer achieved more accurate gas consumption forecasts thus being able to plan strategic actions connected to gas supplies, transportation and stocking. SAS enabled customer to generate daily, monthly and yearly forecasts by geographical areas. Also achieved simulation of alternative scenarios by temperature hence allowing mid-term assessments and analyses.



3.10.2 British Gas Trading Ltd – Demand Forecasting

Capability Vision: An enhanced forecast and performance solution that has the ability to use actual historic demand data, held in an Oracle data warehouse. Also the capability to use historical Met Office Data (average temperatures, wind speed/chill etc). The software also needed the capability to manage workloads & resourcing. Short- term forecasts covering 28 day periods, 6 month forecasts for rostering, with data down to a daily level granularity. One year forecasts for budgetary purposes, with a monthly granularity. SAS is also used to forecast boiler breakdowns.

Critical Issues: The company has a requirement to provide a superior, cost effective service to their customers. With no forecasting investment, this was impossible to achieve.

Reasons: The company had not invested in forecasting, therefore, forecasts were based on historical data. The had no meaningful weather information or customer expectations. Existing processes were manual and relied on individual interpretations. Forecasting was not considered for planning rosters or in budgetary processes, meaning that visibility of labour requirements was low. Poor forecasting resulted in; poor standards of service, reduced customer satisfaction, low employee satisfaction & low productivity.

Results: The solution can produce forecasts for 144 patches, for 28 time periods, using several different models currently at 35-40 minutes, end to end run time.

3.10.3 GS EPS – Demand Forecasting

Capability Vision: The Solution that was provided to GS EPS for the energy market analysis integrated system was SAS Demand Driven Forecasting (DDF).

Critical Issues: The GS EPS electric market analysis system needs to accurately forecast the electricity required, along with reasonable pricing, to sell and provide electricity to the Korea Power

Exchange. GS EPS needed a system that would increase their competitiveness against various other IPP's in the electric market.

Results: We were able to provide not only forecasting/scenario analysis process support for revenue/business planning and operations, but DDF also provides data extraction, processing and analysis, in an expert forecast simulation solution. In addition, DDF can integrate with Oracle ERP and other legacy systems, and can process large amounts of data that are in frame-worked layers.

3.10.4 Reliance Energy Limited – Demand Forecasting

Situation: It is a major power distributor and caters to a population of 9 million in an area of 384 square km in India / Mumbai

Capability Vision: With SAS Forecast Server in place they can expect superior forecasts with minimal penal costs for errors. They can also eliminate manual data collection, data preparation and forecasting.

Critical Issues: Need for accurate forecast of power demand at 15 minutes' intervals, on a daily basis. Consumer base has a mixture of industrial, commercial and residential consumers and thus load is volatile

Reasons: Customer understood that excel based method is not sustainable as it was a manual process and was too dependent on the people involved in the forecasting process.

Results: They were impressed with our ability to take external variables into account and the results of the forecasting, which assured them of a fast ROI. SAS India were also able to provide the reassurance that SAS would be able to deliver what they need thereby dissuading them from evaluating any competition.