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The customer newsletter of ABB  
Network Management

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Photo. credit: DONG Energy A/S

## Collaboration for success

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Power and productivity  
for a better world™



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**Jens Birgersson**

Network Management Business Unit Manager

Dear readers,

Welcome to the third edition of the Network manager customer newsletter for 2011. In this quarter's issue, we bring you stories about some of our activities around the world in utility communications, substation automation and in our software business, Ventyx. We also bring you news of Mincom, our most recent acquisition, which is currently being integrated into our organization.

A common theme in our stories this quarter is collaboration. On page 7 you can read about a smart grid project in Denmark, and on page 9, about our work with EPC (engineering, procurement and construction) companies to ensure they are fully up to date with developments in our portfolio.

Asset intensive industry specialist, Mincom, is also no stranger to collaboration. On page 6 of this issue, we bring news of their Asset Intensive Industry Summits, which are run in partnership with customers and collaborators, providing an award-winning forum for the discussion of industry trends and developments.

As our business grows, it is more important than ever that we maintain close contact with you, our customers, to ensure that we continue to provide the right solutions to meet your needs. I hope you enjoy this newsletter and will be in touch with your comments and questions about the world of Network Management.



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Photo. credit: Jorge Andrade

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Photo. credit: DONG Energy A/S

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# DONG Energy: fueling efficiency and productivity through mobile workforce management

The merger of six Danish energy companies to form DONG Energy brought significant challenges. Disparate field organizations, serving more than 1 million customers, had to be unified across the group.

Using the Ventyx Service Suite mobile workforce management (MWFM) solution, Denmark's leading energy group has not only overcome this challenge but also has optimized assignment and dispatching, and streamlined business processes. The impact was immediate: one year after implementation, DONG Energy had recaptured 100 percent of the initial MWFM investment costs and exceeded the projected first-year operational savings goal.

The needs of the newly merged DONG Energy were clear. The utility needed to manage field operations across organizational and geographic boundaries using tools and processes that would drive performance and reduce costs.

The company chose to upgrade from its legacy Ventyx MWFM software to the latest version of Service Suite: a single solution that would manage a broad spectrum of work, enabling seamless, real-time data and communications flow between enterprise systems and mobile workers.

The updated release provided powerful enhancements to the application's scheduling and dispatch capabilities, broader mobile support and enhanced business intelligence. It also provided a base for utility-wide process standardization to increase field force productivity and lower support costs.



DONG Energy uses Ventyx Service Suite to manage field operations across multiple organizations and geographic boundaries. Photo. credit: DONG Energy A/S.

## Turning challenges into opportunities

One year after the merged energy group was founded, the MWFM upgrade and expansion project started. The project ran concurrently with an SAP implementation and the two applications were integrated. The new mobile workforce management solution, code-named MOTOR, went live on September 2008 with expectations of immediate operational savings and recovery of the initial investment costs. Service Suite delivered on both counts.

DONG Energy's Meter Operations and Power Supply organizations experienced the greatest gains. They took

a stepwise approach to move from an all-manual environment in 2008 to fully automated dispatch of all routine service messages by 2012. With Service Suite handling the routine planning of technician itineraries, there is now a ratio of 1 dispatcher for every 28 field crews (compared to 1 dispatcher for every 15 field crews in 2007), so dispatchers are able to focus on exceptions, special cases, and monitoring assets involved with open orders.

Real-time enterprise-wide access to the entire field force enabled dispatchers to modify assignments and adjust work schedules as necessary. "Having a



DONG Energy chose to upgrade to the latest release of Service Suite from Ventyx, an ABB company. Photo. credit: DONG Energy A/S.

combination of detailed and enterprise-wide controls enabled a huge productivity shift in how our dispatchers managed order progress and the status of the fleet,” said Stephan Fly, senior process consultant at DONG Energy. “All projects have their unique challenges; once the Service Suite team helped us work through these, the impact was significant. Service Suite was a major contributor in driving cost savings.”

Dispatchers were not the only ones to yield benefits from the upgrade. Field technicians were initially resistant to the system changes, with concerns of job obsolescence. However, once technicians started using the new screens and forms, they embraced the cultural shift. The ability to create and complete work orders on site resulted in a greater sense of ownership of the work orders and avoided additional truck rolls.

### Realizing value and identifying Benefits

DONG Energy has realized higher-than-expected returns and continues to log yearly savings since the upgrade. The organization achieved its objectives through a multi-pronged approach, supporting positive cultural changes with the Ventyx enterprise software solution and optimized business processes. A full 85 percent of the efficiencies and performance improvements were

attributed to the Service Suite solution, ensuring the investments in place today help build the workforce operation of tomorrow.

One year after implementation, 100 percent of the initial investment for the Service Suite upgrade had been recovered. The first year also exceeded the projected savings, realizing actual cost savings of almost \$2 million.

Significant productivity gains since the upgrade include:

- 15 - 36 percent more jobs completed per technician
- Up to 18 percent reduction in order duration
- 50 percent reduction of active dispatchers in Meter Operations
- 28 technicians can now be handled by 1 dispatcher

Important non-tangible yields that continue to benefit the Meter Operations and Power Supply organizations at DONG Energy are:

- A modernized system that enables the capture of accurate field data and reduces errors
- Automation of major functions that project an enhanced overview of daily production
- A major contributor to positive cultural change in the field workforce organizations

### What's next?

Two years after the first upgrade, DONG Energy has just refreshed their MWFM solution with a new release that enables further reductions in travel time and improvements in vehicle and technician productivity.

With more than 20 percent of their energy sourced from North Sea wind power, renewable energy is another key area of growth for DONG Energy. The company is currently evaluating Ventyx solutions for a possible extension to ensure asset health and reliability in the renewable business.

“Every feature added aims to drive efficiency and productivity gains. The Service Suite mobile workforce management solution continues to evolve to meet our needs and has provided us with a scalable flexibility to support and optimize our most critical field operations,” added Catharine Norén, Head of Planning at DONG Energy.



The company achieved higher-than-expected returns and continues to log yearly savings since the upgrade. Photo. credit: DONG Energy A/S.

# Mincom wins International Business Award for Asset Intensive Industry Summits

Mincom has earned a prestigious International Stevie Distinguished Honoree medal for its Asset Intensive Industry Summits (AIIS) in the category of “Best Tradeshow or Convention” in the 2011 International Business Awards.



Executives from across asset intensive industries worldwide share asset management and performance strategies and best practices for maximizing safety and profits, minimizing risks.



**N**icknamed the “Stevie” for the Greek word “crowned,” the International Business Awards are the only global, all-encompassing business awards program honoring great performances in business. Honorees were selected from more than 3,000 entries received from organizations and individuals in more than 40 nations. The International Business Awards are overseen by a board of judges and advisors featuring prominent and accomplished business professionals from around the world.

Mincom’s Asset Intensive Industry Summits are the first events of their kind designed to address the common chal-

lenges among asset intensive organizations in overcoming barriers to business optimization and achieving best practices in work and asset management. Bringing together leaders from across the world in mining, transport, energy, public infrastructure and defense, the summits foster discussions around the latest ideas, trends and developments in support of maximizing the asset value chain.

Speakers included Mincom executives and product experts, industry analysts from Gartner and ARC Advisory, and executives from leading organizations, including the Australian Defense Force, Cliffs Natural Resources, Arch Coal,

Western Power, P&H Mining Equipment, U-HAUL, QBuild, Energex, Eraring Energy, Tesoro and Metro Trains Melbourne.

“The events provide the opportunity to engage with existing customers and build new relationships,” said Jennifer Tejada, Chief Strategy Officer at Mincom. “We’re very pleased, to receive this award and congratulate the entire team for the success our first AIIS.”



# PowerLabDK: Collaboration in Denmark to test smart grid solutions

With almost 30,000 inhabitants and a grid more than 30 percent fed by wind power, the Danish island of Bornholm is an ideal proving ground for research into renewable and sustainable energy systems. It is also the site for one of ABB's latest collaborations on smart grid technology.

**P**owerLabDK is one of the most recently established international energy laboratories. Its unique power system with a single cable connecting the island to the rest of the Nordic grid means that the island can be disconnected from the grid and function as a self-contained system, providing controlled conditions for conducting tests of new smart grid technologies.

ABB is working with the Technical University of Denmark to support PowerLabDK, a large-scale experimental platform for energy that includes the Bornholm power system. The University expects to enable researchers from all over the globe to test smart grid solutions at PowerLabDK, which is one of Europe's most powerful real-time power system simulators.

"The purpose of the PowerLabDK is to develop solutions for reliable and flexible grids with a high integration of sustainable energy" said Claus Madsen, Manager of ABB in Denmark. "We are providing a network management solution from Ventyx for the research lab control system, including 22 lab cells fully equipped with ABB products."

While smart grids are a new area of R&D focus, this type of collaboration is not. ABB was built on a commitment to innovation and has long recognized the value of teaming with other pioneers; investments in research initiatives, fellowships and strategic partnerships

have enhanced the ABB portfolio and led to international and cross-industrial cooperation in almost every ABB business.

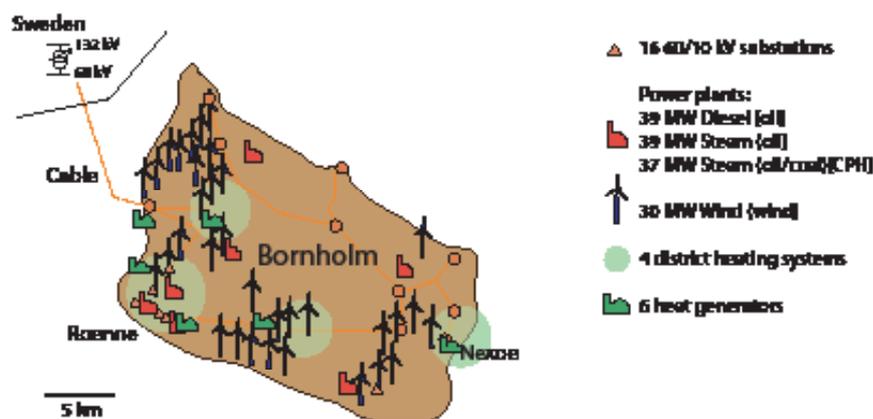
The project with the University of Denmark is one of many academic-based smart grid collaborations ABB has with prestigious learning institutions around the world, including projects in the US, Sweden, Germany and Italy. In the US, for example, ABB is a corporate partner of the FREEDM Systems Center, a National Science Foundation Engineering Research Center headquartered at North Carolina State that is developing key technologies to revolutionize the US energy grid.

ABB is also very active on the industry side. One notable research collaboration on smart grids is with automotive giant General Motors. Since September 2010, ABB and GM have been studying electric car batteries. The project

investigates energy storage uses for electric vehicle batteries once their useful life in the vehicle is over. Future smart grids will also need to supply a vast infrastructure for electric vehicles, which require a wide range of energy storage solutions.

"In the fields of engineering and technology, cooperation and open innovation between companies, universities and research institutions can enhance the development of new ideas and knowledge, putting them on a faster growth path than would be possible by acting alone," said Brice Koch, Head of Marketing and Customer Solutions at ABB.

"The combination of acquisitions, venture capital investments, strategic partnerships and research initiatives are not only expanding ABB's market scope, but also accelerating the understanding of the future electric grid," said Koch.



The power system on the island of Bornholm serves 28,000 customers and has a peak load of 55 MW



Photo. credit: Laszlo Ilyes

## ABB telecommunications and substation automation systems for Brazilian transmission project

ABB has won a contract with a Spanish company Isolux Corsán, main contractor for the Xingu and Macapá power transmission lines, to provide substation automation and telecommunications systems for six new substations in Brazil. The project is part of a Brazilian government scheme to connect the Amazon region in north-eastern Brazil to the power system serving the rest of the country. This is one of the largest transmission projects to be carried out in Brazil in recent years.

The Linhão, or “Big Line” project will ultimately connect the cities of Manaus, the capital of Amazonas state, and Macapá, the capital of Amapá state, with Tucuruí hydropower plant. With a generation capacity of 8,370 MW, Tucuruí is Brazil’s second largest hydroelectric plant. The new line, and the hydropower it will bring, will help to reduce local dependence on thermal power plants and diesel-powered generators in 27 of the towns and cities along the left bank of the Amazon River.

The main components of ABB’s delivery to Linhão are the substation automation systems that will be installed in three 500 kV substations being built at Xingu, Jurupari and Oriximina. The systems use ABB’s modular design to ensure maximum flexibility and the most cost-effective solution for the customer. In all, ABB will supply 125 protection and control cabinets for the substations, the largest substation automation order ABB has received in Brazil this year.

The panels will be equipped with ABB’s Relion® 670 series protection and control IEDs (intelligent electronic devices). These units provide maximum flexibility and performance, and meet a range of requirements in generation and transmission protection systems.

The telecommunications equipment for the project will include products from ABB’s FOX family of solutions. The FOX 515 multiplexer, for example, will enable multiple analog signals or digital data

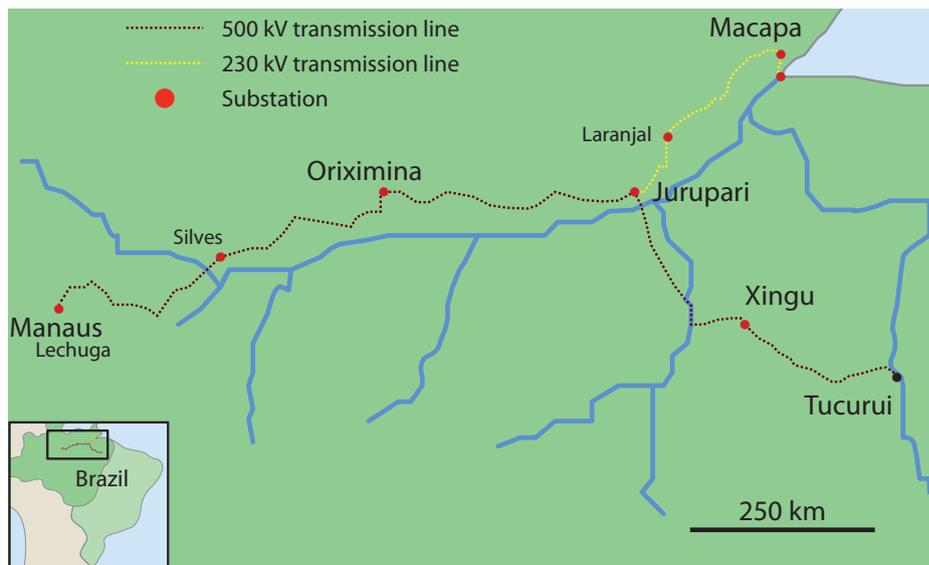


ABB substation automation and telecommunications systems will serve the 508 km Tucuruí-Xingu-Jurupari line and the 683 km Oriximiná-Jurupari-Laranjal-Macapá line.

streams to be combined and transmitted as a single signal, making the best possible use of the available bandwidth. The combination of ABB’s experience, global support network and portfolio of complete solutions enables close cooperation with customers at every stage of the project, from planning through delivery to commissioning and after-sales service.

Because of the extreme sensitivity of the Amazonian region and the challenging terrain, the Linhão project has been the subject of much scrutiny and careful planning. For example, the new line will cross the Amazon river in two stages at the island of Jurupari. The two stages, with two spans each, will be 1.2 km and 2.2 km wide, which means the transmis-

sion towers will need to be 150 and 295 meters high, respectively. The taller one will be almost as high as the Eiffel Tower in Paris. Efforts have also been made to minimize land use by reducing the width of the transmission corridor.

In addition to the potential negative impact on the rain forest and human populations in the area, Linhão planners also considered the benefits of bringing hydropower to the near 3 million local residents. Offsetting the reduction in greenhouse gas emissions gained by replacing an estimated 1000 MW of thermal generation against the rise in emissions caused by suppression of plant growth in the transmission corridor, the project is expected to avoid the emission of 1,460,000 tCO<sub>2</sub>e per year.



Because of the extreme sensitivity of the Amazonian region and the challenging terrain, the Linhão project has been the subject of much scrutiny and careful planning. Photo. credit: David Evers.



Photo. credit: Luis Garcia

## Utility Communications road show for EPCs in Spain: enhancing the network of ABB suppliers

EPC (engineering, procurement and construction) companies are key customers for ABB's Utility Communications group. They provide end-users with broader access to ABB products and systems, and offer valuable support in turnkey project delivery.

To ensure that our EPC customers are fully up to date with our latest technologies and have a clear understanding of our utility communications portfolio, we have taken a localized approach to EPC partnerships. We have established specialized training and information programs for the companies according to their geographical location. These include local information “road shows” for EPCs in specific countries, including China, South Korea, Japan and Spain.

This year, our EPC road show in Spain included presentations on a range of topics, agreed with each of the companies in advance. These included a set of sessions tailored for Isolux Corsán in Madrid.

Isolux Corsán is a global benchmark in the areas of concessions, energy, construction and industrial services. It operates in 30 countries, across four continents. The company is very active in high-voltage power transmission, with over 5,237 kilometers of lines under

concession in India, Brazil and the United States. It also holds a worldwide leadership position among companies world-wide specializing in EPC projects for solar photovoltaic plants.

The program agreed between ABB and Isolux Corsán included four sessions, covering the principles of utility communications, new trends in the field and ABB’s utility communications portfolio. During the highly interactive sessions, participants were able to discuss actual tenders and projects with ABB experts, who provided detailed information on the advantages offered by ABB solutions.

Such interactions enable Isolux Corsán to tackle increasingly complex projects, such as that in the Amazonas region of Brazil, described on pages 8-9 of this newsletter, and in new countries like India and Kenya.

“We are very satisfied with the presentations,” commented Juan Manuel Gutierrez, Global Engineering Lead at Isolux Corsán. “They gave us the opportunity to know more about the technical requirements in the telecommunications solutions for utilities and the need for a proper design and selection of our partners. The presentations in Madrid also offered the possibility for more staff from our company to take part in the different sessions. We expect to have similar events organized by ABB in the future.”



Hermann Spiess, Head of Product Management for ABB’s Utility Communications business, presenting at one of the Isolux Corsán seminars.

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**Published by**

Siân Curtis

[sian.curtis@ch.abb.com](mailto:sian.curtis@ch.abb.com)

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