



Newton-Evans Research Company's

# Market Trends Digest

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## **Areva T&D Apparently To Remain in French Hands After All**

After months of internal debate and consideration of proposals from GE and Toshiba, Areva's top tier of executives have decided to keep the \$7 billion-plus T&D business under French control. AREVA's Supervisory Board met on November 30, 2009 to examine the bids. After review, the Supervisory Board asked the Executive Board to begin exclusive negotiations with Alstom/Schneider.

The consortium offered 2.29 billion Euros in equity value, i.e. 4.09 billion Euros in enterprise value. The bid does not include any requirement for a seller's warranty but includes a buyer's commitment to maintain all European sites for a 3-year period.

To ensure that all AREVA T&D team members are integrated properly, Alstom/Schneider have also agreed to offer to all European employees a similar position in the same geographic area, at an equivalent qualification level and without loss of compensation or seniority.

Finally, unless the economic environment deteriorates significantly, the buyers made a commitment not to implement any layoff program except for voluntary terminations. There are still many unresolved issues including these:

- Employee Discontent with the "closed" nature of the negotiations between the French corporate executives involved in the decision-making for the business. The European employee union will be taking its case before the EU in Brussels this week, demanding assurances related to job security and existing work contracts.
- Decisions on which units of Areva T&D will go to Schneider Electric and which will go to Alstom. While this may already have been decided by the buyer consortium, it is not yet clear to Areva T&D staff or to any "outside observers" at this time how the company's assets will be re-allocated.

We hope the morale of the outstanding Areva T&D first level management and technical and sales staff will improve once things are settled. There is some likelihood that a common language was one factor in the decision to retain French control. Keep in mind that this company had successfully doubled its sales bookings in an era when other global players were struggling to hold their own or minimize losses. Areva T&D is a major shareholder in a number of T&D automation market segments, including control center systems and power market management systems IT (with its e-Terra line), substation automation (MiCom and PACIS offerings), protection and control (MiCOM line), and similar offerings for the industrial market (especially strong in oil and gas operations and in rail transport). High voltage equipment offerings are on a par with those offered by any other market participant. Areva T&D has been a strong competitor in high-voltage equipment for years, with scores of the world's largest utilities relying

on its HV equipment for electric power transmission. When it comes to FACTS, gas insulated switchgear, HVDC equipment and the like, Areva will be among the finalists for contracts along with ABB and Siemens and a growing number of Asian suppliers.

In the medium voltage (power distribution networks) business, Areva T&D is extremely competitive internationally, somewhat less so in North America. The company provides a full range of equipment for both overhead and underground distribution networks.

Power generation activities have become a growing source of revenue over the past three years for Areva T&D. In Europe, the company has been successful in launching systems to control renewables integration with power grids for both wind and solar farms. Globally, Areva T&D has been a major provider of generator circuit breakers and related disconnect switches with hundreds of installations of this equipment in power plants around the world.

Areva T&D's oil and gas industry offerings encompass customized electrical solutions for offshore and onshore applications. We are your trusted partner for successful offshore platforms, topside electrification of Floating Production, Storage and Offshore Loading (FPSO), Liquefied Natural Gas (LNG) trains, refineries and petrochemical plants.

Areva's T&D product packages and turnkey solutions cover main receiving substations, MV switching substations, power and distribution transformers, LV panels, monitoring & control centers and automation systems. Specifically for the mining sector, we provide you with explosion-proof switchgear and transformers, as well as mobile substations, in addition to our standard portfolio.

The company's steel industry solutions include EAF transformers, SVCs and special MV switchgear. For the aluminum industry, we deliver transformer-rectifier and power electronic solutions.

AREVA T&D offers a wide range of equipment and engineering solutions for track power supply of trains, metros and light rail. The company provides fully compliant protection relays, plus SCADA supervision devices for railway networks throughout the world. AREVA T&D also designs and manufactures on-board transformers for rolling stock equipments and uses well trained service teams to maintain the highest reliability of these power installations

By year-end 2007, operating income was up very sharply in the Transmission & Distribution division, to €397 million (9.2% of sales revenue) from €191 million in 2006 (5.1% of sales revenue). Rising labor costs, higher commodity prices and price pressures – particularly in medium voltage – were more than offset by profitable external growth and the positive impact of the optimization plans. All business units contributed to this performance. Through 2008, the company continued to increase its bookings, and had only a few project cancellations with which to contend.



For the first half of 2009, T&D's backlog had climbed to nearly \$9 billion. Revenue had reached \$3.9 billion, up significantly year-over-year, and on a track to exceed \$7.5 billion for calendar 2009. Major new awards made this year to Areva T&D recently have included these:

- \$150 million with State Grid of China for HVDC systems for interconnection projects (Northeast China-Three Gorges).
- \$120 Million in awards from South Korea's KEPCO for 400MW conversion substations – also for HVDC links between Jeju Island and the mainland.
- \$75 Million for 4 UHV units for PowerGrid India.
- \$180 million for Indonesia's national electric power utility PT PLN.
- \$100+ million from Bahrain's EWA for large power transformers and 29 66kv substations.

While no one yet knows how the business units within Areva T&D will be allocated between Alstom and Schneider, or whether the two firms may simply keep the business intact and operating as an autonomous new entity, here are some initial thoughts on how it may eventually play out.

Regarding Alstom's potential interest we believe the following units are of special interest: Certainly most, if not all, of the high-voltage equipment, possibly the automation systems business (with transferability of the e-Terra technology for power plant control systems) as well as portions of the industrial side of Areva T&D (rail transport, oil and gas) and certainly the renewables power generation portfolio of control systems recently launched. Alstom is already the current leader in the development and marketing of a complete range of systems, equipment and service in the railway market. Alstom relies on company-operated, product knowledgeable sales organizations in its marketing efforts.

Schneider Electric can certainly benefit and gain synergy with the following Areva T&D business units: Medium voltage equipment – which can complement the offerings currently available from Square D and M-G; low voltage panels and some of the industrial offerings geared to switchgear and small power transformers also serve as line extensions. Schneider's successful multi-partner channel strategy, so successful in the low voltage and lower MV ranges, would remain comfortable with these additional products. The company has a strong presence within electric utilities, and equally impressive is the regard with which it is held within the industrial and construction sectors of the economy, both of which are expected to rebound by mid-2011.



## **Renewable Portfolio Standards** and the Outlook for Interconnection of Wind Energy Resources

According to the Department of Energy's EERE (Energy Efficiency & Renewable Energy) division, a renewable portfolio standard is:

“a state policy that requires electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date. Currently there are more than 20 states and DC that have adopted RPS policies. Together, these states account for more than 43% of the total electricity sales in the United States.” (U.S. D.O.E.)

The renewable resources accepted, the percentage of renewable energy required for compliance, and the effective dates of the RPS legislation vary in each state.

The impact of RPS is already being felt in the United States, with significant increases in utility adoption of renewable energy sources to help them meet the requirements in those states that have adopted RPS policies. The effect of having nearly one half of the United States already passing legislation aimed at increasing the nation's use of, and reliance upon, renewables has meant a dramatic increase in wind power utilization as well as with solar, small hydro, and other renewable sources in the past three years.

Electrical equipment manufacturers and integrators of systems for electric utilities and generators must adopt their business strategies to be able to participate in this burgeoning market for equipment such as wind turbines, solar panels, hydro equipment and the like. The need for new models of transformers, switchgear, adoptive relaying, and other control and monitoring products and sensors is required and will only continue to grow.

Similarly, the push to integrate renewable sources with the grid operations of the utilities means a significant change in how the IT-centered control and monitoring systems operate and link up and control with these renewable sources of energy. Unlike fossil or nuclear plants, there will always be supply variances due to the vagaries of nature upon renewable sources (e.g., wind pattern changes, rainwater shortfalls, etc. crop harvests for biofuels, etc). that must be compensated for by use of smarter control systems and alternative resources.

Newton-Evans Research estimates the impact of RPS development by the various states on the United States market for utility and industrial purchases of T&D equipment and control systems will exceed ten billion dollars or more over the 2010-2015 period. Wind systems integration will likely be the most important contributor to this impact.

### Integration Costs of Wind Energy

At the start of 2009, U.S. wind energy installations had exceeded 28,000 megawatts (MW) of generating capacity or about 1% of U.S. electricity supply. According to the National Conference of State Legislatures,

“The size of the electricity market and the load balancing area play a significant role in the ease and cost of wind integration. Larger markets have more resources to cost effectively balance energy demand and supply, which reduces the overall variability in the system. Large regional energy markets also offer a better variety of financial mechanisms that can reduce the cost of wind integration. Perhaps most important are the region’s wholesale market structure and scheduling practices. Regions with sub-hourly markets or sub-hourly scheduling (the large ISOs, for example) have greatly reduced wind integration costs because they can more quickly access the response capabilities of the conventional generators. Regions that only allow hourly scheduling generally have higher integration costs.

The mix of energy generation resources in an electricity market also plays an important role in determining the cost of integrating wind power. Research conducted in California and elsewhere found markets that incorporate large amounts of hydroelectric and natural gas generation—both of which can be easily adjusted to meet changing demand—tend to have lower integration costs than systems that rely on more inflexible generation, such as coal or nuclear power. California found that the cost of integrating wind energy is essentially zero, in part due to the large number of flexible generators in the state and the large balancing area. Other large market areas have found integration costs to be less than 0.5 cents per kWh when wind energy contributes up to 25 percent of energy generation.” (NCSL)

Furthermore,

“Demand response policies, which help large electricity users reduce their non-essential electricity use on command, can also be a very cost effective way to accommodate the variability of wind power. Too much wind power sometimes is a concern. This issue can arise in a system that supplies substantial wind energy output during periods of low demand—generally at night when winds can be high and most demand to reduce production in such plants, a large influx of wind energy can cause operational problems and increase costs. Larger power markets, forced curtailment of wind plant output, and addition of new loads that can make use of excess nighttime energy can help avoid this problem. One nighttime load that may become prominent in the near future is charging electric and hybrid vehicles.” (NCSL)

#### References

U.S. Department of Energy. “States with Renewable Portfolio Standards.” *EERE*. 16 June 2009. Web. 10 Dec 2009.  
[http://apps1.eere.energy.gov/states/maps/renewable\\_portfolio\\_states.cfm](http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm)

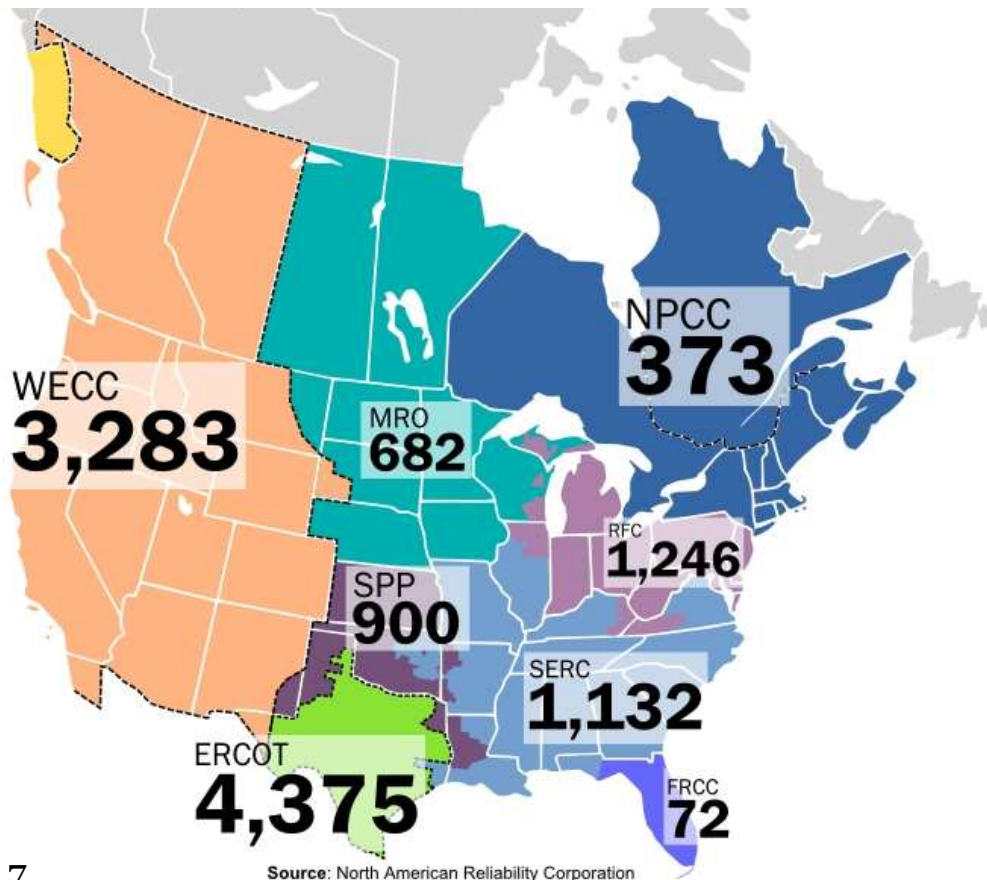
National Conference of State Legislatures. “Integrating Wind Power into the Electric Grid, Perspective for Policymakers.” *Renewable Energy Web Page*. 2009. Web. 14 Dec 2009. <http://www.nationalwind.org/assets/publications/WINDFORMATTED5.pdf>  
ISBN 978-1-58024-555-5



## Transmission Overview: Upgrading the U.S. Grid. Assessing Needs, Challenges, and Specific Projects

Newton-Evans is publishing a timely mini-report on the status of the national grid's modernization. According to the 2009 NERC Long-Term Reliability Assessment, in order to implement the "Smart Grid" and thus improve reliability, the United States needs to develop, on-time, more than 11,000 miles (17,710 km) of the total 32,000 miles (51,520 km) of transmission lines (200 kV and above). This means that entities need to more than double the average number of transmission line miles constructed over any five-year period since 1990.

There are a few factors inhibiting the progress of implementing the transmission lines; namely: line siting regulations, Not In My Backyard (NIMBY) mentality, and allocation of funds. The figure below illustrates the number of miles of planned lines through 2013, broken down by Regional Transmission Operators ("RTO"). A Newton-Evans report delves into the RTOs' specific projects and their statuses. The report is expected to be ready for publication by the end of 2009.



## Reports Scheduled for **2010**

First quarter 2010 is shaping up to be a good start for Newton-Evans' 32<sup>nd</sup> year, with our third survey of Capital Expenditures and O&M Expenditures for Electric Power T&D Investments scheduled for publication in mid February. This time around we responded to reader feedback and added a question regarding various budget ranges for overall T&D automation, transmission infrastructure, and distribution infrastructure in addition to our usual checkbox grid that measures general budget increases/decreases/no changes and the reasons given for them.

As in the June 2009 survey, the Dec/Jan survey will be directed to upper level managers and senior staff directly involved with transmission and distribution planning, as these officials were most likely to be involved in some or all aspects of formulating the T&D budget and planning for smart grid initiatives within the utility. Our last survey effort received 118 utility responses from 36 different countries.

Also in 2010, Newton-Evans will revisit two of our multi-volume, flagship studies on EMS, SCADA, and DMS in Electric Utilities as well as Substation Automation and Integration. This will be the 12<sup>th</sup> and 10<sup>th</sup> editions of these studies (respectively.)

As always, Newton-Evans welcomes any ideas for research topics in addition to the following few that we are already considering: Renewable Portfolio Standards Update in 2010, Industrial Micro grids and Automation Plans, World Outlook for Meter Data Management, and North American Electric Power T&D Infrastructure.

Please let us know if you have an interest in having Newton-Evans conduct other topical studies. Don't forget that much of our research work is undertaken for individual clients on a wide variety of energy-related infrastructure and automation topics.

### Multi-Volume Studies

World Market for EMS, SCADA and DMS (12th Edition)

World Market for Substation Automation (10th Edition)

### Individual Reports

CAPEX 2010-Outlook (Estimated Publication Date: February 15<sup>th</sup> 2010)

CAPEX 2010-Mid-Year (Estimated Publication Date: June 21<sup>st</sup> 2010)

### Client-Suggested Additional 2010 report topics

RPS Update in 2010

Industrial Micro grids and Automation Plans

World Outlook for Meter Data Management

North American Electric Power T&D Infrastructure

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