

# Newton-Evans Research Company's Market Trends Digest May 2012



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## 2012-2014 Electric Utility Protective Relay Marketplace

Much of the following information has been excerpted from the Newton-Evans "Worldwide Study Of The Protective Relay Marketplace In Electric Utilities: 2012-2014"

## **Digital Relays in the Mix**

The overwhelming majority of electric utilities around the world still have some EM relays in use. However, the percentage of operational relays that are digital continues to grow. The past three surveys (2009, 2006, 2004) each had indicated a decisive trend towards digital relays for almost all new relay purchases, and the 2012 survey confirms the trend. Overall, the North American portion of the installed base that consists of digital/microprocessor relays increased by about 11% over what was indicated in 2009 according to our sample (51% digital in the 2009 sample, 62% digital in the 2012 sample.)





#### Annual World Market for Protection & Control Continues to Grow

The annual sales for protective relays are currently estimated to be in excess of \$2.5 billion in 2012 with single digit percent increases over the next few years. In North America it is still clear that investor-owned utilities will dominate purchases of protective relays, but at somewhat lower rates (64%-70% of utility industry totals) than one would expect, given that this group dominates the power supply industry generally (73-77% of total utility customers, revenues, production capacity, transmission lines, etc.)

#### **Market Leaders**

Manufacturers of utility systems protection equipment continue to expand their market coverage, with more than 20 firms each enjoying at least some share of the global market. The "traditional" major international manufacturers of protective relays continue to dominate market shares outside of North America. Globally, Siemens, Alstom Grid and ABB are market leaders. GE and SEL are making their presence known and gaining shares in the EMEA, APAC and Latin American regions.

Lately, more European-based manufacturers including Schneider Electric-VAMP, Team Arteche, ZIV, Koncar, and ArcTeq are spreading their marketing wings from their historical roots in European sub-regions. Leading Chinese suppliers (NARI-Relays, XJ Electric, Benxi, among others), together with Indian suppliers including CG Global, are winning customers beyond their home country markets and are growing in importance internationally.

#### Use of Synchrophasor Data

Real-time analysis of synchrophasor data will become a major application for the emerging field of operational analytics, especially as more investorowned utilities are using it for transmission substations. Sixty-seven percent of U.S. investor-owned utilities who responded to the Newton-Evans survey indicated they already use synchronized phasor measurement and another 13% said they plan to in the near future.

#### 61850 in North American Substations

Despite comments from three of the larger U.S. investor-owned utilities that the protocol has a higher speed and better overall performance, IEC 61850 is still not widely used as a relay protocol within U.S. substations due to expressed uncertainties about interoperability, cost savings, and complexity. Only 6 of the surveyed North American utilities reported any use of IEC 61850 within their substations. Some of these early adopter utilities were hesitant to indicate any cost savings just yet, but a few reported some positive experiences. After taking into account that 94% of survey participants agreed that "It is important that we purchase known relays (a proven product with which we have had prior experience)" it is difficult for new relay suppliers to gain a foothold in the market.

This four volume study also includes vendor profiles, international survey findings, and a global market outlook. The full report is available for purchase on our website, or you may place an order via phone/fax <u>http://www.newton-evans.com/?page\_id=7</u>



## First and Second Quarter 2012 Client Studies – Wide Ranging Topics

1) Substation Design Software — The rapid growth of 3D software to assist substation planning and design teams. Findings suggest significant increases in time-savings, productivity, improved bills-of-material, and decreases in design errors and overall project costs.

2) Third Party Consulting Services for Utility Operations: This North American study found that there are significant advantages to using specialized independent consultants to assist operations management in control center activities associated with upgraded and new systems, changes in regulatory environments (especially NERC CIP compliance issues).

3) IT and OT Trends Among Mid-Size and Smaller Utilities: The findings from this study indicated that most utilities serving more than 10,000 customers DO use SCADA in operations, while a majority of all 100+ utilities in the study also utilize distribution planning software, outage management systems, and nearly one half have implemented an AVL system.

4) Fault Current Limiters for Distribution Networks: This niche "system protection-related" market is small today, but the findings from the study suggest some substantial growth in the years ahead, especially for utilities using networked distribution engineering approaches.

5) Smart Energy Value Chain Study: This study was an evaluation of world regional market segment sizes, outlook and key participants in electric power, energy pipelines and water distribution. An appraisal of the analytics market outlook for utility operations was also completed.

6) Cyber Security and NERC CIP Compliance Study: This research program was completed with a sizable sampling of mid-size electric utilities in the several NERC regions. Findings imply that the small-mid-size utilities are having a tough time meeting NERC CIP directives, with few dedicated staff resources available to focus on compliance issues.

7) Automatic Generation Control Software/Systems: The findings from this North American study conducted with utilities and ISO/RTO organizations indicated as one finding that the key inputs to AGC applications are derived from three sources: (1) Direct SCADA measurements; (2) direct telemetry measurements from plants and substations, and (3) other utilities via ICCP.

## May – September 2012 Outlook for Client Studies and Internal Research Programs

Telecommunications Usage Patterns and Plans in Energy Pipelines: Newton-Evans staff will be undertaking a client study of global transmission pipeline telecommunications usage, plans, and operational challenges. This new study will include issues such as the potential for migration of smart grid developments such as improved visualization and situational awareness for control systems operators from electric power utilities to midstream aspects from the upstream digital oil and gas fields. The potential for managed network services in the pipeline industry will be assessed domestically and internationally.

Transmission and Distribution Equipment and Services Outlook: This client study will be taking a hard look at the current T&D line item level of goods and services required to operate a transmission or distribution utility. Taking into account both internal and external economic factors on the likely rate of growth or decline in use of various equipment and services, the study will also assess the key producers and services providers for more than 75 "line items."

EMS/SCADA/DMS 2013-2015 Series: This report series has been a Newton-Evans flagship product for more than a quarter century. This newest edition will once again feature the usage, plans and market outlook for a variety of control systems used in the electric power industry. We anticipate completion of the study by year-end 2012. The four-volume study will once again feature a North American report, and international market report, profiles of more than 20 suppliers of control systems around the world, and a 36 month market outlook for related systems, supporting services, applications software, and regional trends.

Update to the mid-2011 "Smart Grid Reality Check" Report Series: The interplay between various regional and in-country economic and regulatory policies and the resulting effect on spending for smart grid will again be evaluated. While some research reports seem now to include ALL T&D spending as "smart grid" related, the fact is that most spending for infrastructure (transformers, switchgear, cable, meters, etc.) will continue on as if there was no "smart grid" component. Most categories of infrastructure equipment has indeed been improved, made more reliable, and smartened as appropriate, with each subsequent generation of product release over the past 100 years.

## **Our Website**

If you haven't already had an opportunity to explore the completely revamped Newton-Evans Research website, you may want to take some time to do so. Sign up for Market Trends Digest and you will gain immediate access to a treasure trove of a decade worth of MTD editions featuring electric power and energy industry research articles on a wide variety of study topics.

For more articles like this visit our website: <u>http://www.newton-evans.com/</u>



## **U.S. Transformer and Substation Market Overview Series**

## NOW AVAILABLE

Newton-Evans Research Company has released 2 report series from its U.S. Market Overview Series: The Substation Automation Series and the Transformer Market Series.

The SA series looks at 13 topics from RTUs and PLCs to Substation Communications and Integration Specialists. Overall, the market for substation automation products and services is expected to increase at a slow but steady rate. One example of this trend can be found in Power Quality Recorders:

## Substation Automation – Power Quality Recorders 2011-2014 U.S. Outlook in \$MUSD

2011	2012	2013	2014
\$55	\$58	\$61	\$65

The Transformer series focuses on 11 transformer topics including transformers various voltage ranges, shunt reactors, oil-filled vs. dry type, and transformer lifecycle management services, monitoring and diagnostics. Despite the overwhelming number of market leaders across these 11 categories, there are a few companies that seem to be constant competitors:





### **Overview**

The Market Summary Series of more than 90 T&D and related automation report topics provides an effective, low-cost approach for management to quickly obtain an assessment and overview of key attributes of each industry segment, including 2011 estimates of U.S. market size for utilities (by type) and for industrials; key players, and the near-term outlook for the segment. Each report includes definitions of what is included in the segment, lists of market participants and their estimated 2011 revenue, a market share assessment (pie chart), 2011 market size range estimates, history and outlook of estimated spending changes.

### Methodology

The data for these reports is being obtained through secondary research, interviews with equipment/systems suppliers, industry consultants, the U.S. Department of Commerce, and from information gathered from more than 200 earlier Newton-Evans survey based studies.

### **Reports in the T&D Market Summary Series:**

Protection and Control Series: Complete Series Price: \$875.00 PR01 - Feeder Relays PR02 - Line Differential Relays PR03 - Generator Relays PR04 - Motor Control Relays PR05 - Electro-Mechanical Rela5ys PR06 - Drop-In Control Houses PR07 - Synchrophasors (PDUs/PDCs) PR08 - Teleprotection Power and Distribution Transformer Series

Complete Transformer Series Price: \$975.00 TX01 - Mobile Transformers TX02 - Medium Power Transformers TX03 - Med-Large Power Transformers TX04 - Large Power Transformers TX05 - Very Large Power Transformers TX06 - Shunt Reactors TX07 - Special Transformers (Arc, Furnace) TX08 - Distribution Transformers (OH, Oil, 5kva+) TX09 - Distribution Transformers (Dry Type) TX10 - Transformer Life Management Services TX11 - Transformer Monitoring and Diagnostics Control Systems and Services Series Complete Control Sys. & Svcs. Price: \$975.00 CS01 - EMS Systems Integration CS02 - Distribution SCADA CS03 - Geographic Information Systems CS04 - Customer Information Systems CS05 - Outage Management Systems CS06 - Meter Data Management Systems CS07 - Mobile Workforce Management Systems CS08 - Advanced Distribution Automation CS09 - Electric Power Market Management System CS10 - Power Exchange Systems Integration

CS11 - Cyber Security Software for Control Systems

Distribution Automation Series. Complete Series Price: \$975.00 DA01 - Automatic Circuit Recloser Controls DA02 - Sectionalizers DA03 - Voltage Regulators DA04 - Capacitor Bank Controllers DA05 - Fault Indicators DA06 - Pole Top RTUs DA07 - Line Mounted Monitoring Devices DA08 - Communications Components - Power Line DA09 - Communications Components - Wireless Cellular DA10 - Communications Components - Radio DA11 - Software for DA DA12 - Engineering Services for DA Medium Voltage Series Complete MV Series Price: \$1,500.00 MV01 - Air Insulated Metal Clad Switchgear MV02 - MV Motor Controllers MV03 - MV Gas Insulated Switchgear MV04 - Automatic Circuit Reclosers MV05 - Outdoor Distribution Circuit Breakers (5-38kv) MV06 - OEM Switches MV07 - Load Interrupter Switchgear MV08 - Overhead Switches (15-38kv) MV09 - Sectionalizers

- MV10 Fused Cutouts
- MV11 Pad Mounted Switchgear
- MV12 Bus Duct
- MV13 Substation Pad Mount Capacitors
- MV14 Current Controllers/Fault Current Limiters
- MV15 Current Limiting Fuses and Links
- MV16 Instrument transformers
- MV17 Substation Based Power Equipment Centers
- MV18 Submersible/Underground MV Switchgear
  - MV19 MV Surge Arresters
  - MV20 MV Voltage Regulators

Substation Automation Series: Complete Series Price: \$975.00 SA01 - Remote Terminal Units SA02 - Programmable Logic controllers SA03 - Substation Automation Platforms SA04 - Multifunction Meters and Recorders SA05 - Inter-Utility Revenue Meters SA06 - Digital Relays SA07 - Digital Fault Recorders SA08 - Sequence of Events Recorders SA09 - Power Quality Recorders SA10 - Substation Reclosers SA11 - Substation Automation Integration Specialists SA12 - Substation Communications SA13 - Substation Voltage Regulators **High Voltage Series** Complete HV Series Price: \$975.00 HV01 - FACTS and RPC HV02 - HVDC HV03 - Air Insulated Substations HV04 - Gas Insulated Substations HV05 - Air Insulated Switchgear HV06 - Gas Insulated Switchgear HV07 - High Voltage Bushings HV08 - High Voltage Capacitors

- HV09 High Voltage Circuit Breakers
- HV10 HV Disconnect Switches
- HV11 High Voltage Circuit Switchers
- HV12 HV Instrument Transformers
- HV13 Air Core Reactors
- HV14 HV Surge Arrestors
- HV15 Generator Disconnect Switches
- HV16 Generator Circuit Breakers

For more details on how to order visit our website at www.newton-evans.com or send us an email: info@newton-evans.com

## ConnectivityWeek 2012 Gathers 100+ Speakers Defining the Energy 2.0 Market

ConnectivityWeek 2012 will take place May 22-24, 2012 at the Santa Clara Convention Center in Santa Clara, CA.

ConnectivityWeek 2012 to bring in more than 100 top speakers from utilities, technology, government and energy consumption.

Top keynote speakers include United States Chief Technology Officer, California Public Utility Commissioner, Assistant Secretary of the Department of Energy, Senior Vice President (SVP) and Chief Information Officer (CIO) of Pacific Gas and Electric (PG&E), and more, to help define market for Energy 2.0.

ConnectivityWeek 2012 is gathering top speakers representing utilities, energy consumers, government and technology players to spark the dialogue that will help define the market for Energy 2.0, May 22-24, 2012, in Santa Clara, Calif.

Kicking off the conference as part of the May 22 opening Green Button plenary are Chief Technology Officer (CTO) of the U.S.A. Todd Park and California Public Utility Commissioner Catherine Sandoval.

Following this Green Button-focused plenary, the U.S. Department of Energy (DOE) Assistant Secretary Pat Hoffman will announce winners of the highly anticipated "Apps for Energy" contest, which has been put together by the DOE and its partners: Grid 21, Itron and PG&E. Hoffman will be joined onstage by Karen Austin, SVP and ClO of PG&E; Bill Reichert, Managing Director of Garage Technology Ventures; and more.

The breadth of speakers at ConnectivityWeek 2012 comprise the Energy 2.0 landscape and include representatives from energy supply, technology, electricity consumption verticals, and government.

For more information on this conference visit <a href="http://www.connectivityweek.com/2012/">www.connectivityweek.com/2012/</a>