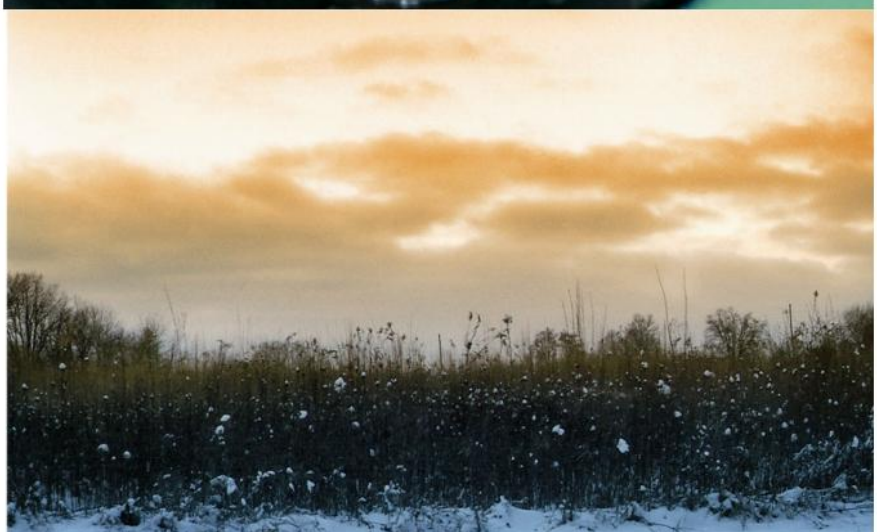
Newton-Evans Research Company's

# Market Trends Digest

February 2013





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# Newton-Evans First Quarter 2013 Research Efforts and Topics

**Client-based Studies**

Capacitor Switch Controls

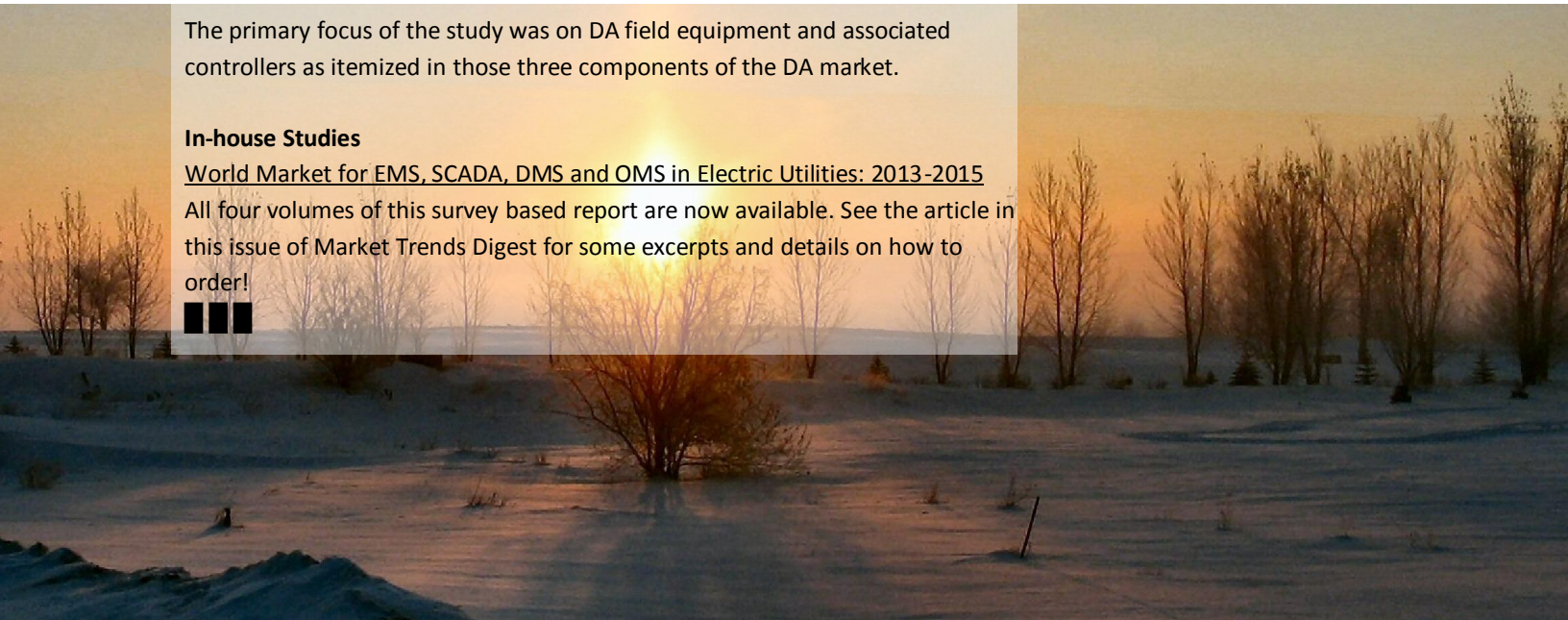
Newton-Evans is planning to do a study of the use of and purchasing processes for distribution line capacitor switch banks and controllers. Questions to be investigated include, “What criteria are used in deciding to use capacitors with switch controls vs. other options?” and "Why does your utility use switched capacitor banks vs. fixed banks?"

Communications Architecture for Data Acquisition

In January and February Newton-Evans is conducting a short survey of utilities on the topic of communications architecture. The main focus of the study is to determine for our client what reasons utilities have for either migrating to an Ethernet/IP infrastructure for bulk power communications, consolidating substation communications to a single path to the main control center via regional control centers, or implementing a second (new) data acquisition infrastructure.

Distribution Automation Equipment Plans

In January, Newton-Evans completed a client study based on a survey of North American electric utilities. The survey was conducted over two weeks, and gathered data on the likely usage patterns, technical trends and growth rates associated with three components of the DA market: 1) DA field equipment, 2) Controllers required for the DA field equipment, and 3) Platforms/software required for DA information handling.



The primary focus of the study was on DA field equipment and associated controllers as itemized in those three components of the DA market.

**In-house Studies**

World Market for EMS, SCADA, DMS and OMS in Electric Utilities: 2013-2015

All four volumes of this survey based report are now available. See the article in this issue of Market Trends Digest for some excerpts and details on how to order!

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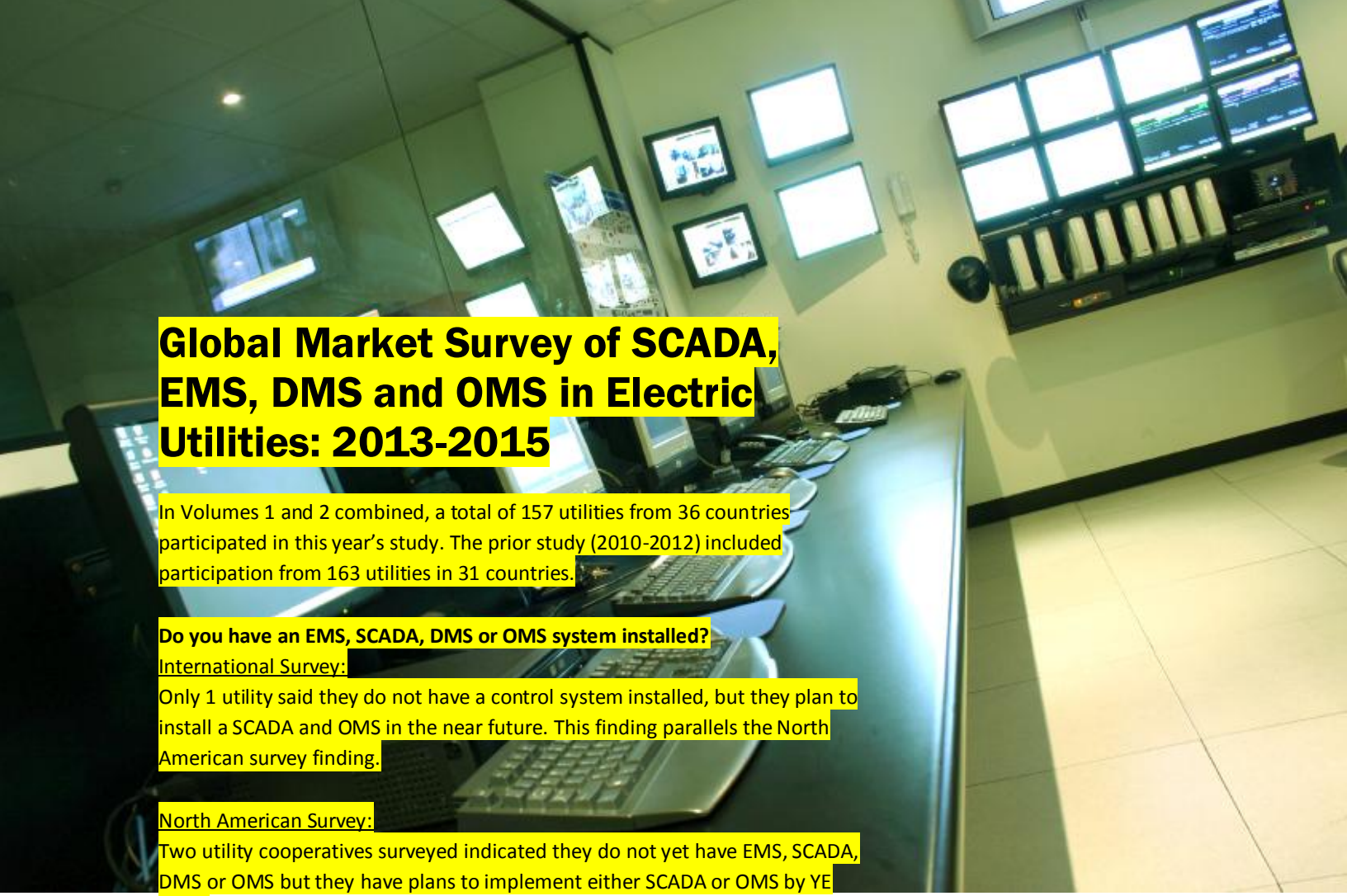


# Global Market Survey of SCADA, EMS, DMS and OMS in Electric Utilities: 2013-2015

In Volumes 1 and 2 combined, a total of 157 utilities from 36 countries participated in this year's study. The prior study (2010-2012) included participation from 163 utilities in 31 countries.

**Do you have an EMS, SCADA, DMS or OMS system installed?**

International Survey:

Only 1 utility said they do not have a control system installed, but they plan to install a SCADA and OMS in the near future. This finding parallels the North American survey finding.

North American Survey:

Two utility cooperatives surveyed indicated they do not yet have EMS, SCADA, DMS or OMS but they have plans to implement either SCADA or OMS by YE 2015.

**Upgrades, Replacements and New Systems**

International:

There is clear supporting information obtained from the utility operations managers, specifiers and buyers that point to a significant level of upgrades and replacements of existing control systems around the world. Several "first-time" purchases of DMS and OMS systems are also being planned.

It is important to note that the international utilities participating in the survey tended to be larger and more likely to be involved with bulk power transmission than their North American counterparts. As a result there is a higher proportion of EMS usage (57% to 31%) and DMS usage (43% to 19%). North American utilities were more likely to have an OMS (66% to 48%) by year-end 2012.

North America:

Newton-Evans believes that this 36-month period (2013-2015) represents the most significant planning for upgrades and replacements of EMS, SCADA, DMS and OMS technology since the company first undertook formal studies of the power delivery control systems market in 1984.

For EMS users, the need for increased regulatory reporting and NERC CIP compliance reporting, the integration of multiple forms of renewable energy coming onto the grid at HV and MV levels, the need to interoperate with market management systems, ISO/RTO systems and to provide information to the distribution network management systems, and in some form to the business side of the utility organization are all coming to the forefront of operational decision making. Coupled with systems obsolescence among the 50% or so of EMS systems that have been in use for more than a decade, this next 24-36 month period should bring about significant project activity for the EMS supplier community. Volume 3 in this series will detail the outlook for energy management systems both in North America and around the world.

**Does your utility have/plan to deploy some form of analytics by YE 2015?**

International:

Seventy percent of utilities outside the U.S. and Canada currently use or plan to use OMS analytics, and 71% currently use or plan to use asset analytics. There is a much higher level of participation and interest in analytics internationally than within the U.S. and Canada, with 39%-44% of respondents planning on implementing 1 or more of the 4 options listed on the survey.

There seems to be more analytics in use in Europe than other world regions at present. Fifty-five percent of European utilities responding to the survey said they currently use asset analytics, and 36% said they currently use OMS analytics; this is quite high compared to utilities in Latin America and the ME/A region, where only 1 or 2 utilities said they currently use any of these 4 types of analytics even though 8 or 9 utilities said they plan to implement some of them by year end 2015.

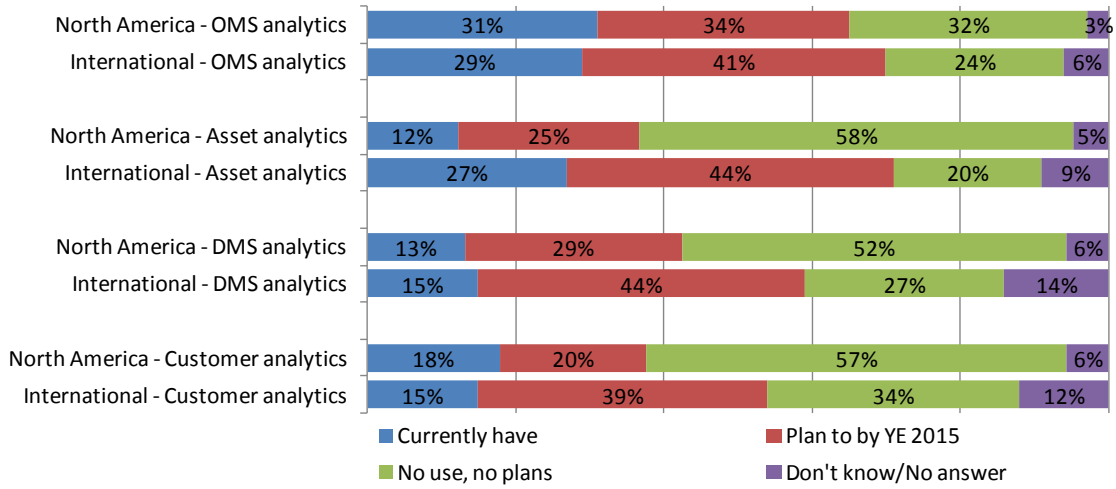
North America:

Sixty-five percent of utilities either currently use or plan to use OMS analytics. Fewer utilities reported any use of Asset analytics, DMS analytics or Customer analytics, but almost a third plan to deploy some DMS analytics in the near future.

Cooperatives and Canadian utilities seem to have a slight head start over investor owned utilities with respect to OMS analytics; 32% of Cooperatives and 38% of Canadian utilities said they use analytics now while only 21% of investor owned utilities do so.

As the role of analytics grows in importance to the operational side of electric power utilities, this question will become one of the tracking topics covered in future editions of this Newton-Evans study.

*Does your utility currently have or plan to deploy some form of analytics by YE 2015?*



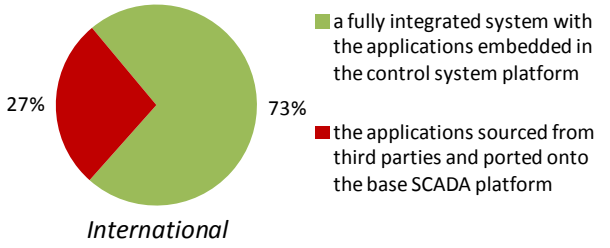

**Does your utility prefer a fully -integrated system with embedded applications, or third party applications ported onto system?**

International:

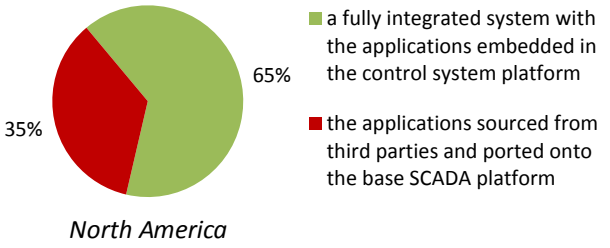
Almost three-fourths of respondents overall said they would prefer "a fully integrated system with the applications embedded in the platform" over having the applications sourced from third parties. The 12 respondents from Latin America were 50/50 between these 2 choices.

North America:

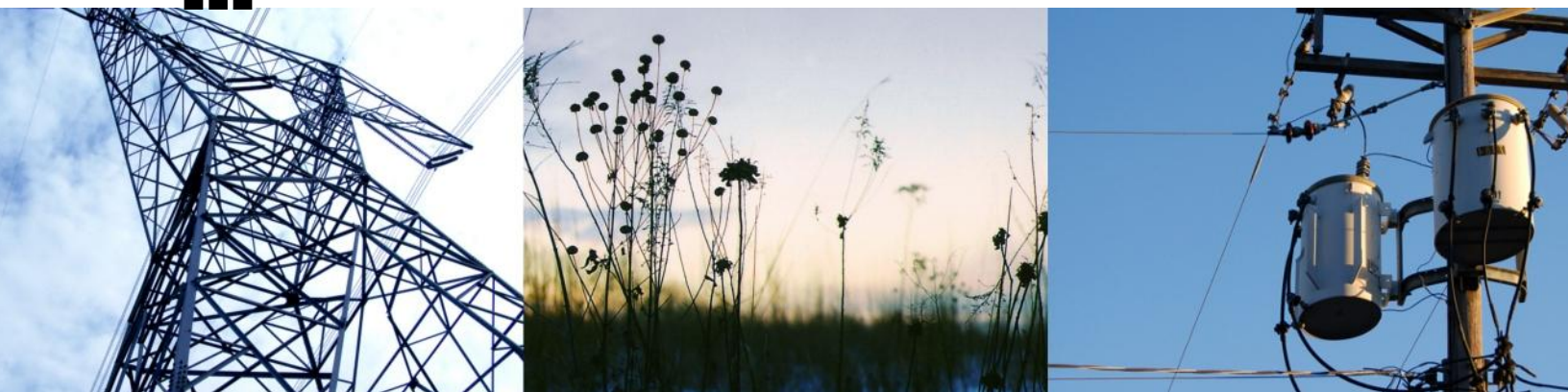
When given a choice between these two options, most (65%) prefer the fully integrated system with embedded applications. Nine out of 11 utilities with more than 1 million customers also chose this option.




*International*




*North America*



# Topics Researched by Newton-Evans in 2012

The numerous topics researched by Newton-Evans staff during 2012 included a number of timely and thought-provoking client-funded studies. Among the client studies conducted over the past year were these:

- Cyber Security Practices and NERC CIP Compliance Issues for Mid-Size Utilities
- North American Study of the Market for Third Party IT and OT Service (Cloud Computing for Utility Operations)
- Substation Automation --- Cyber Security Perspectives of Substation Planners
- 3-D Substation Design Outlook – Determination of Advantages for Intelligent (3D) Design Software for New and Retrofit Substation Programs
- For CIGRE we completed a detailed international study involving utilities in more than 40 countries on the topic of cyber security practices related to protection and control. This was our third “pro bono” survey completed for CIGRE in four years.
- For a major contractor for the U.S. Department of Energy, we completed a study of Smart Grid Manufacturing Readiness for each of eight core SG technologies.
- For a major engineering university, Newton-Evans completed studies of control room standard operational practices and operator visualization with major utilities and ISO/RTO’s.
- Completed a global assessment of various utility IT and OT markets in the electric power, gas and water utilities for a major international software company.
- Prepared a market analysis and five year outlook on more than 50 product categories for a leading T&D equipment manufacturer.
- Completed an assessment of the North American Market for Third Party Control Center Services for a major Consulting firm.

In addition to the 2012 publication of the multi-volume series on protection and control, Newton-Evans staff also completed a library of 86 individual market summaries for various T&D equipment, providing market sizing estimates, market shares and outlook.

As a result of the participation of hundreds of respondents to all of these studies and our internal self-funded multi-client research programs, we were able to donate more than $6,000.00 to various charities … all because of survey

respondent requests to make donations to American and Canadian Red Cross, UNICEF and Wounded Warriors Project in lieu of their accepting stipends.

Conference participation was also a focus for the company during 2012.

DistribuTECH – San Antonio
Utility University Course: *Communications Systems and Networks in Today's Utility Operations*
Presentation: *Trends in Protection and Control*
Presentation: *Smart Grid Communications*

Smart Grid Communications Forum – Atlanta
Presentation on Smart Grid Communications Systems Design

iPCGrid – Pacific Gas and Electric - San Francisco, CA
Presentation: *North American v. International Trends in Protection and Control*

UTC - Orlando, Florida
IEEE PES Meeting – San Diego, California
CIGRE – 2012 CIGRE Session Paris, France
*Presentation on Findings for Cyber Security Practices for Protection and Control*

Industrial Control Systems ( ICS) Conference – Norfolk, VA
*Presentation on Cyber Security in the Energy Industry*

# DistribuTECH 2013: A Personal Viewpoint

*By Chuck Newton*

It is always a treat to travel out to San Diego, where the weather usually is nice, warm and sunny, at least relative to much of the country in January. This year, the weather was cooler than it had been in prior DistribuTECH years, but still pleasant for us east coast and Midwest visitors.

This year's DistribuTECH event, the 23rd edition, drew a record number of visitors (9,534), record number of exhibitors (435), and more opportunities to learn about industry developments related to smart grid, renewable energy, and T&D infrastructure than ever before. The 14 conference tracks included a total of 77 different sessions. More than 350 individuals participated as speakers or panelists at these informative sessions. Quite an impressive and ongoing record of growth from the very first DistribuTECH held in Orlando back in 1991.

SDG&E, SMUD, CAISO and Duke Energy were among utilities winning awards for various best in class activities, with Southern Company winning the "Utility of the Year" award. Meanwhile best CEO awards went to PEPCO's Joseph Rigby (Best Large Utility CEO) and Walter Haase, of Navajo Tribal Utility Authority, (Best Small Utility CEO).

There were several terrific exhibits on the show floor that were better designed this year, and several that have been recently configured with user friendly touchscreens to allow show floor visitors to more easily conduct some self-learning exercises about various new and evolving technologies. I thought General Electric and Alstom had two of the best examples of user friendly exhibits on smart grid topics. ABB and Siemens both had large, open exhibits that brought together their respective infrastructure equipment with their advances in automation.

In the mid-size supplier category, EFACEC ACS and NovaTech both had very sizable, inviting displays of automation offerings, from the control center out to the distribution network. Infrastructure company exhibits from Hubbell, S&C, G&W, Cooper and several others did a great job of getting across the merging of their respective new generations of T&D infrastructure equipment with some nifty smart grid tie-ins, including an array of communications options

often coupled with specific monitoring, control and condition assessment attachments.

The concern for cyber security improvements, the need for improved operator visualization and the closely related need for situational awareness improvements in control centers was reflected in a host of vendor displays and apparent in my discussions with representatives from several of the key consulting engineering firms exhibiting this year.

The conference sessions were very well attended, packed to capacity for the most part, and I was pleased to note the inclusion of entire tracks on C&I technology, network infrastructure, substation integration, and transmission activities - with the hot topics of synchrophasors and dynamic line ratings being featured.

All in all DistribuTECH 2013 came off as a very informative conference, with some truly excellent opportunities for learning more about the technology that "keeps the lights on" for all of us. I am looking forward to coming down to San Antonio next January for the 24th edition of DistribuTECH.

Order Now!

NEWTON-EVANS RESEARCH COMPANY

# *The World Market Study of SCADA, Energy Management, Distribution Management & Outage Management Systems in Electric Utilities: 2013-2015*

## *4 Volume Series*

*See Order Information on last page for details*

This publication is Newton-Evans Research Company's tenth major in-depth international research program on supervisory control and data acquisition (SCADA) systems, energy management systems (EMS), distribution management systems (DMS), and Outage Management Systems (OMS). The four volume series measures current market size and offers projections on a world region basis through the year 2015. It includes a North American Market Survey and Analysis, International Market Survey and Analysis, World Market Assessment and Forecast, and SCADA/EMS/DMS/OMS Supplier Profiles for major companies.

The world regions included in the research publications are North America, Western Europe, Central/Eastern Europe, Mediterranean, Middle East, Sub-Saharan Africa, Latin America, and Asia Pacific. The series provides a comprehensive and informative report on the control systems usage patterns and plans of electric utilities around the world.

**Key Issues Addressed**

- Approximate number of Poletop RTUs, Feeder/secondary RTU's/Smart DA devices, Substation RTUs, PLCs, SA platforms, Synchrophasor measurement units, and Substation level phasor data concentrators. Anticipated numbers planned for installation by year-end 2015, along with protocol requirements.
- Have utilities converged SCADA/DMS and OMS functions?
- Cyber security concerns if EMS/DMS or DMS/OMS are combined.
- Plans to implement IEC 61850 beyond 2015.
- Communications Methods in use and planned for use

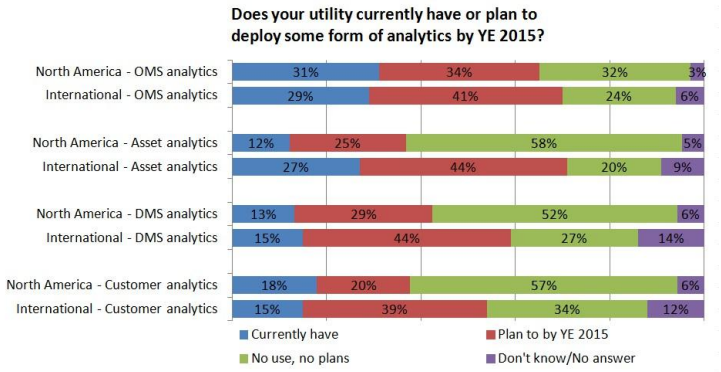
**Sample Survey Topics**

- Extent of use of SCADA, EMS and DMS systems by the world's electric power utilities.
- How distribution circuit designs move from GIS to DMS
- SCADA/EMS/DMS/OMS procurements. New, replacement and upgrade plans for SCADA/ EMS/DMS.
- External assistance and third party services requirements in control center operations.
- Choice of communications protocols within substation, & from substation to external EMS/SCADA/DMS host network.
- Deployment of Operational Analytics
- Unit responsibility for hardware server maintenance

**Research Methods**

Chief operations and chief engineering personnel were the principal source of information for this program of the world electric power market for SCADA, EMS, DMS and OMS systems in electric utilities. The field survey work is conducted using several primary research methods including personal interviews, e-mail, mail and fax surveys, with telephone follow-up conducted by Newton-Evans staff and research partners. Discussions and information exchanges with international suppliers provide additional market insight.

**Sample Charts:**

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|---|---|---|---|---|
| | Low | High | Low | High |
| 2005 | 250 | 450 | 40 | 70 |
| 2006 | 300 | 500 | 40 | 75 |
| 2007 | 300 | 500 | 40 | 80 |
| 2008 | 350 | 600 | 40 | 90 |
| 2009 | 350 | 600 | 40 | 100 |

| | Value Range $500,000 - $999,999 Estimated # of Projects | | Value Range $1 MILLION & OVER Estimated # of Projects | |
|---|---|---|---|---|
| | Low High | Low | High | |
| 2005 | 8 | 15 | 7 | 12 |
| 2006 | 10 | 20 | 8 | 15 |
| 2007 | 10 | 25 | 10 | 20 |
| 2008 | 10 | 30 | 12 | 30 |
| 2009 | 15 | 35 | 20 | 35 |

# Ordering Information:

To order this report series, phone, fax or mail this form with a check (U.S. dollars) or purchase order number to Newton-Evans Research Company, Inc., 10176 Baltimore National Pike, Suite 204, Ellicott City, Maryland 21042, USA. You may also visit our website at www.newton-evans.com to place your order via credit card, and download the reports directly.

Research Series

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