Newton-Evans Research Company's

MARKET TRENDS DIGEST

for the Computer, Communications, and Controls Industries

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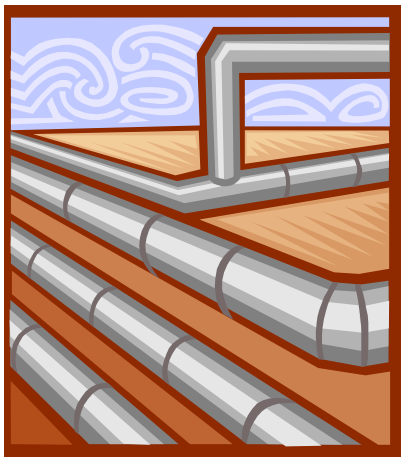

Nine out of Ten Gas/Oil Pipelines and Gas Distribution Utility Respondents Currently Using Remote Valve Operations

In recent years, Newton-Evans Research Company has conducted several research programs providing a clear view of the international market for supervisory control and data acquisition (SCADA) systems among electric, water and gas utilities, and gas and oil pipeline companies. Newton-Evans is currently conducting its third *worldwide* study of SCADA systems in gas and oil pipeline operations and gas distribution utilities. The report series is entitled "The World Market for SCADA Systems in Gas & Oil Pipeline Operations and Gas Distribution Utilities: 2005-2007." This new series will provide an in-depth evaluation of the central and remote site hardware, applications software and communications services that oil and gas pipeline operations and distribution utilities will be requesting during their next round of procurements for SCADA systems. The research study will result in a comprehensive and informative series of reports on control systems

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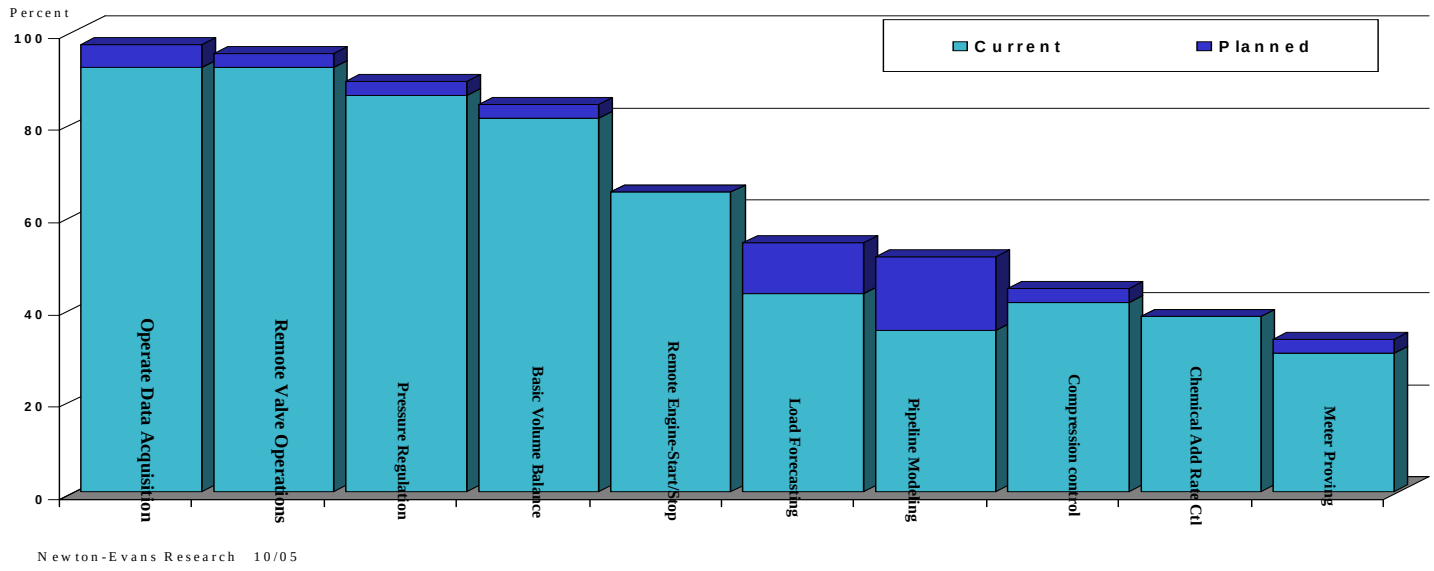
usage patterns and plans of pipeline operations and gas distribution utilities worldwide. Current market sizes will be assessed and projections, on a world-region basis, for the next several years will be offered. A separate report profiling more than 40 suppliers of oil/gas pipeline SCADA-related systems, software and services will also be available.

Preliminary data from one survey question concerns functions and control/acquisition applications currently being performed by survey respondents. Respondents were also asked to indicate those functions or applications they plan to bring on-stream over the 2005-2007 period. Over ninety percent of the respondents thus far noted current use of "remote valve operations" and "operating data acquisition." Eighty-six percent of the respondents indicated "pressure regulation" and 81 percent noted current use of "basic volume balance." These are followed by five other functions/applications with a mention rate of greater than 30 percent - "remote engine – start/stop" (65 percent); "load forecasting" (43 percent); "compression control" (41 percent); "chemical addition rate control" (38 percent); and, "pipeline modeling" (35 percent).

Mentions of functions and applications to be brought on-stream by year-end 2007 were fairly minimal. Only three functions were mentioned by more than 10 percent of the respondents, thus far. These are "pipeline modeling" mentioned by 16 percent, "full scope online simulation" mentioned by 14 percent, and "load forecasting" noted by 11 percent of respondents. See Figure 1.

Figure 1
Functions and Control/Acquisition Applications
Current and Planned
2005



Pricing for the complete three volume report series is $4,250.00. Volume 1, Global Summary of Research Findings, is priced at $1,950.00. Volume 2, Market Analysis/Forecast, is also $1,950 when available. SCADA vendors will be profiled in Volume 3, which will be available for $750.00. For further information, please call Newton-Evans at 1-800-222-2856 or email Loretta Smolenski at Lsmolenski@newton-evans.com.

Prepaid orders that are received by December 30, 2005 are entitled to a 20% discount on all volumes ordered.

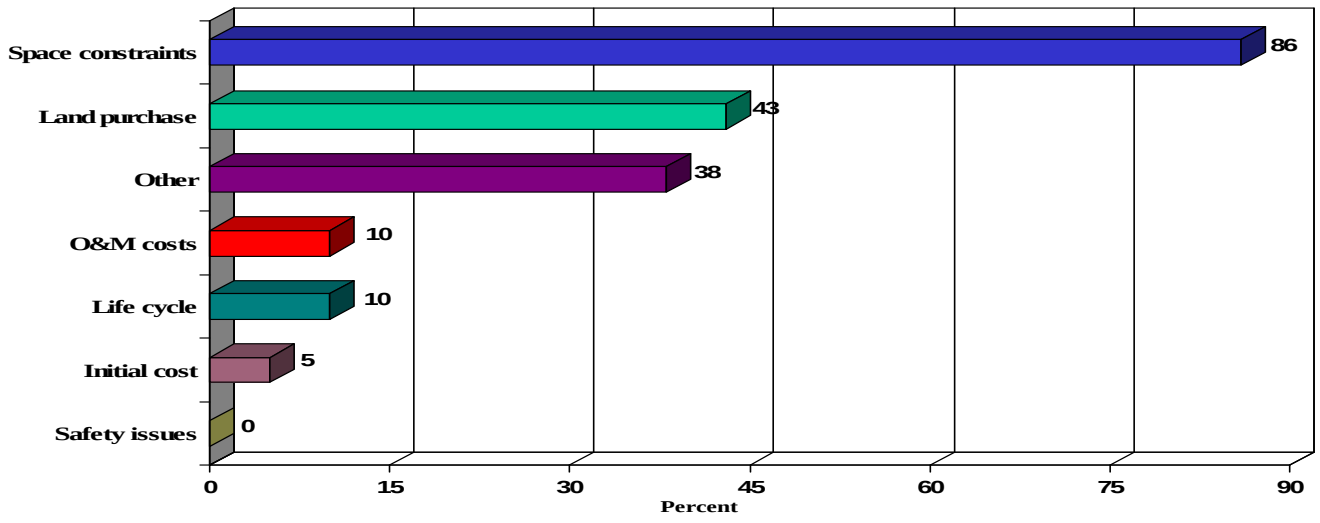
Space Considerations and Constraints Important Factor Influencing Decision to Use Gas Insulated Switchgear (GIS) Equipment

In the first half of 2005, Newton-Evans completed a study to determine the current use of gas insulated switchgear (GIS) in large U.S. electric utilities. One topic encompassed in the study included influencing factors that affected the responding utilities to purchase gas insulated switchgear over air insulated switchgear (AIS).

On the survey, respondents were asked "*What factors influence your utility's decision to purchase gas insulated switchgear over air insulated switchgear?* The six factors listed on the survey were: space consideration/constraints, safety issues, initial cost v. AIS cost, O&M costs v. AIS costs, life cycle v. AIS, and land purchase.

Responding utilities were in general agreement that space considerations and constraints was the most important factor influencing their decisions to use GIS equipment in substation applications, as indicated by nearly nine out of ten utilities responding to this question. This was followed by land purchase, mentioned by 43 percent. All other factors received less than a ten percent mention rate.

Figure 2
Factors Influencing Decision to Purchase GIS over AIS



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Utilities were also given the option to write-in a response. Some of the responses from these utility officials included aesthetics (three mentions), seismic, and more reliability and capability for same space.

See Figure 2.

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Developments in the EMS, SCADA and DMS Market: A Newton-Evans Update

As of mid-October, Newton-Evans has recorded more than 200 EMS, SCADA and DMS contracts during the period from January 2003 to August 2005 awarded by the world's utilities in an open bid manner of procurement. These contracts have a total value of more than $820 million USD. The top three global suppliers including ABB, Areva T&D, and Siemens accounted for about $600 million – a whopping three quarters of the total amount tracked.

In addition to these contracts, there has been at least $500 million in contract extensions, system upgrades and retrofits that has been sole sourced back to the current suppliers over the same period. Values of sole source or restricted bid contracts throughout the world reached another $250 million, in Newton-Evans estimation. We have no reason to think that a significant change in the ratio of that amount would go to other than these same three global players.

2004 Contracts Review:

Importantly, for 2004, the bulk of large contracts have been awarded in a single region – the Mediterranean, Middle East, African region. The top 10 awards in this region accounted for more than $284 million USD.

Among South Mediterranean countries, Tunisia led the way with the largest contracts, followed by Algeria and Morocco. In the Middle Eastern sub-region, Iraq, Qatar, Saudi Arabia and Iran all contracted for mid-size and large systems worth at least one million dollars. The active African countries in 2004 included Nigeria, Ethiopia, Sudan, South Africa, Uganda, Ghana and Zambia.

The Asia-Pacific region utilities outside of China announced a total of 17 awards amounting to about $63 million. In addition, there were multiple domestic tenders awarded in China at the district, county and urban levels, accounting for more than $50 million. Chinese suppliers receiving these contracts included: China EPRI, NARI, XJ Systems, Yantai Dongfang, and several smaller companies.

In North America, Canadian activity remained low, while about 50 U.S. utilities contracted with suppliers for new systems or major upgrades; although no single large open bid procurements were noted. Only a handful of systems were awarded for more than one million dollars.

Mexico did purchase another system in 2004 as did utilities in Chile and Peru, but the Central and South American region had been quite active in 2003.

Western European nations accounted for relatively few procurements that were announced publicly, with eight such awards totaling about $35 million tracked by Newton-Evans. Eastern European awards from four countries totaled more than $70 million, with most of this coming from a very large Bosnia NCC contract – bundled with some related grid infrastructure funding.

2003 Contracts Review:

While the published news of awards values in 2004 was almost double that announced for 2003 contracts, there was almost the same level of procurement activity in terms of individual awards, however the average values were at lower price levels.

Three regions each accounted for more than $60 million of announced contracts for electric utility EMS, SCADA and DMS systems. These regions were: North America, Asia-Pacific and Mediterranean-Middle East-Africa. North American utilities accounted for about 60 individual contracts at an average of about one million dollars. Asia-Pacific countries spent an average of four million dollars per contract, while the Med-Mid-East-African nations spent more than eight million dollars per average contract award. These statistics

are skewed upward by one or two very large contracts per region in the latter two regions. Kazakhstan awarded a contract for nearly $20 million USD, while the UAE also handed out a large contract valued at almost $37 million.

In Central and South America, at least eight systems involved international competition, and contracts worth more than $19 million were announced by the utilities.

Utilities in at least eight different Western European nations procured control systems contracts worth at least one million dollars. In total, such larger contracts reached $44 million, in terms of contracts that had gone to tender. It is likely that at least as much was awarded on a sole source basis, to existing suppliers for system upgrades and retrofits.

Interestingly, neither Western Europe nor North America saw evidence of any large procurement, with only a handful of contracts reaching even five million dollars in either region during this "sub-par" year for electric power control systems spending.

Central and Eastern European utilities spent more than $25 million with major Western control systems suppliers in 2003. Romania, Bulgaria, Czech Republic, Lithuania, Slovakia and Serbia each awarded contracts of one million dollars or higher to Western suppliers, with Romania's eleven million dollar award for a new national control center highlighting spending in the region.

Supplier Performance:
The three largest global suppliers of electric power control systems during the period of January 2003 through August 2005 were the following: Siemens, Areva T&D and ABB. Together, these three firms accounted for about $600 million in "new" open competition contracts awarded by the world's utilities.

The top five contracts in terms of value for Siemens (Bosnia, Nigeria, Sudan, Morocco and the UAE) reached $256 million – or about 59% of the company's intake. For ABB, the five largest contracts received included Iraq, Algeria, India, Philippines and Vietnam. These combined contract values amounted to an estimated $106 million – or 57% of the company's intake during this period. Areva T&D also accounted for about 57% of its electric power control systems revenue from five key contract awards (Qatar, Tunisia, Saudi Arabia, Ethiopia and Egypt) worth about $125 million dollars on a combined basis.

This is a very interesting and important assessment, in that the three largest suppliers dominate the market for high-end, high-value systems contracts, but in each separate region there can be fierce competition with other qualified global suppliers (GE Energy, SNC Lavalin, et al) and "extra-regional" firms (Hitachi, MELCO, EFACEC, VA-Tech, Telvent, et al).

As values of systems range downward from multiple millions of dollars, the competition becomes even fiercer, with strong in-country providers (such as ACS and OSI in the US market; PSI in Germany, China's XJ Systems, Yantai Dongfang, NARI and China EPRI), and as many as a dozen other credible suppliers in these and other regions and individual countries).

Please visit Newton-Evans Research Company's website to receive a diversity of data. Our website provides links to 15 energy associations and 13 energy trade publications.

Previous MTDs are also available on the website. Trade events for the remainder of 2005 through year end 2006 are also available on the Newton-Evans site.

Ethernet Ports Available in a Typical Substation

Volume I of Newton-Evans Research Company's series of reports on substation automation and integration programs in electric utilities: 2005-2007 was released in September 2005. The volume contains information on the North American market.

There were several new topics surveyed in this substation study update. One subject matter concerned Ethernet ports that are available in a typical substation, if these ports are secured, and if so, through what method.

Thirty-six officials indicated that no Ethernet ports were typically available in their transmission and distribution substations. Of those who did indicate having such ports, the nominal midpoint was eight ports, with a few having either 24 or 48 ports.

Eighty percent of the utilities responding positively to this question indicated that their substation Ethernet ports were in fact secured.

Two-thirds of the utility officials who had indicated secure ports stated that they were secured via port security methods, and 50 percent of the responding utilities said that other methods were being used. Other methods included the following: authentication, IP addressing; firewalls; LAN security; NMS, SCADA autocal; separate VLAN; software security; password; and, all Ethernet switches are in locked buildings and behind dual redundant firewalls.

See Figure 3.

Figure 3
Security of Ethernet Ports

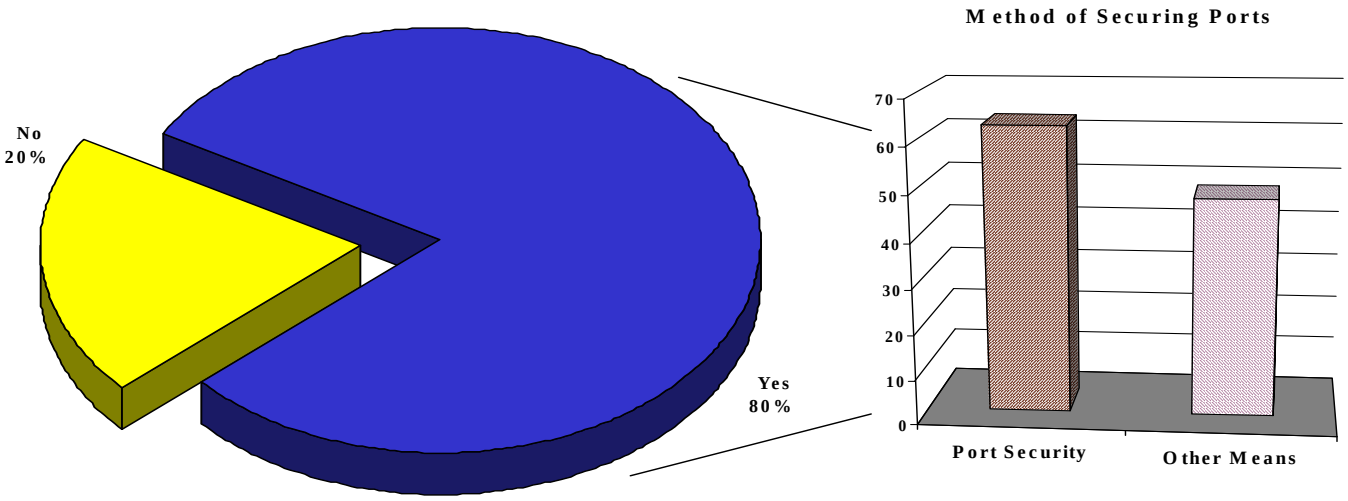
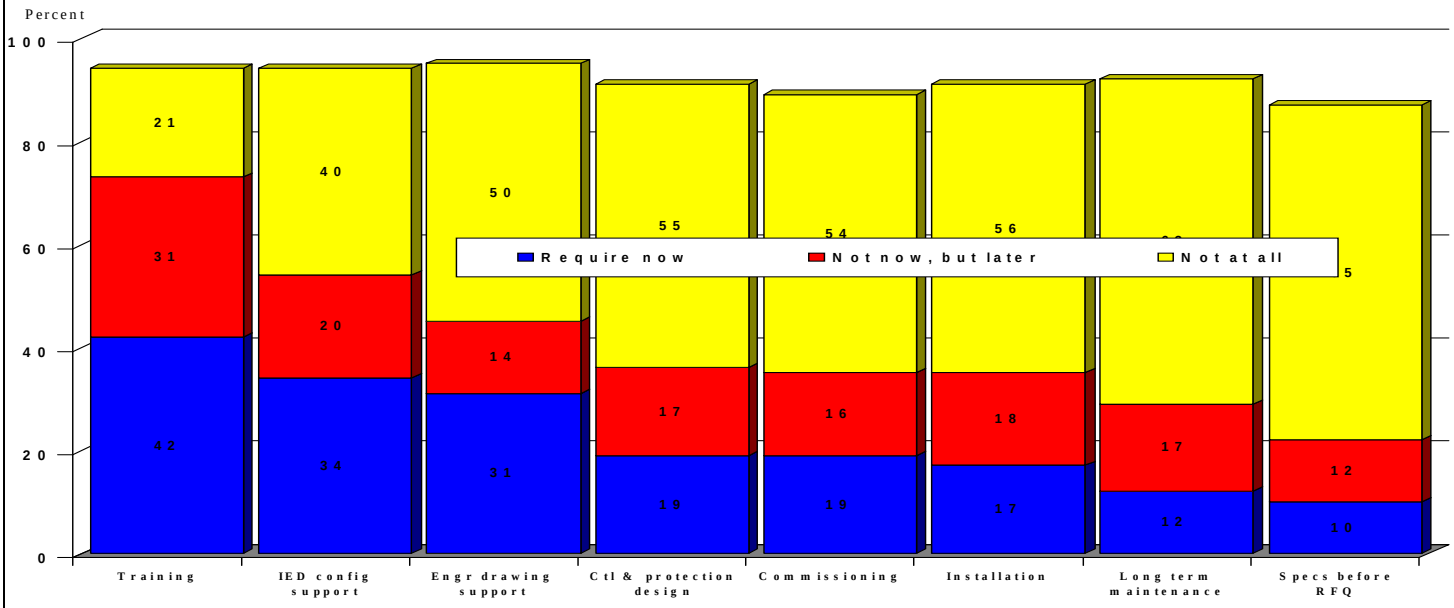


Figure 4
External Assistance Needed by Respondents for Substation Automation Related Activities



One topic that has been included in Newton-Evans' substation automation and integration surveys over the years concerns external assistance that is currently needed, or will be needed over the next two years, for various substation automation activities. The question is asked to gain insight into what types of services could be provided by third-party firms, whether they are specialist service firms, or equipment or systems suppliers, into the substation marketplace. Nine distinct activities were listed on the survey for respondents to indicate that external assistance was required now, not yet but later, or not required at all. The activities were: pre-packaged substations (SS control house arrives "on a truck"); training; installation; control and protection design; commissioning and testing; engineering drawing support; specifications development to help define needs before RFQ; IED configuration support; and, long term maintenance agreements.

By mid-2005, utilities were indicating a need for training assistance (42%), for IED configuration support (34%) and for engineering drawing support (31%). These rates exceed the demand seen in earlier studies. The activity indicating the least need for external assistance was specs development to help define needs for the RFQ. Training assistance and engineering drawing support also were the top two activities indicated by officials as needing external assistance in the near future (31 percent and 20 percent, respectively).

In Newton-Evans' mid 2002 study, utilities indicated a fairly strong need for training services (37%), and for IED configuration support (25%). Future needs also extended beyond these to include installation services, commissioning and testing, and control and protection design activities, all indicated as future requirements by at least one quarter of the large respondent group. Less likely to be "outsourced" for assistance were: prepackaged substations, specification developments, and long term maintenance agreements.

Results from the 2000 study indicated that training and IED configuration support were being requested quite strongly (27% and 24% needed these services). "Not yet but later" was indicated by 40% of the group for training services, 39% for IED configuration support, and 34% for commissioning and testing, followed by 29% planning to have a need for installation services.

Newton-Evans Research Company Participation In Energy Industry Events in 2005 and 2006

During 2005, Newton-Evans participated in several conferences with activities ranging from attendance, and discussions, to presentations and exhibits. The year kicked off with Charley Lidard representing the company at the **DISTRIBUTECH** Conference in San Diego.

ENTELEC was the Spring Conference held in New Orleans for the energy telecommunications industry. Newton-Evans exhibited its reports and services and also presented the preliminary findings .

from its 2005 global study of gas and oil industry SCADA trends.

In June, Newton-Evans sent two members (Gerry George, Chuck Newton) to Torino, Italy to participate in the international **CIRED** Conference. This outstanding four day event is held every two years in a different European city. Gerry George has written a terrific synopsis of the conference posted on the Newton Evans web site, and read by a few hundred people each week, according to our site logs.

In August, Newton-Evans Research Company participated in the US **InfraGard 2005 Conference**, with a presentation of SCADA security usage patterns in the world's energy utilities and pipeline operations.

In October, Chuck Newton delivered the keynote address to the **REMOTE 2005** Conference to the 200-plus delegates from around the world, discussing energy control systems and current applications usage and trends.

On November 30, 2005, in Fairfax, Virginia, Newton-Evans and Kema Consulting are co-hosting the initial meeting of the new Cigre B5.22 workgroup, "Wi-Fi Protected Access for Protection and Automation."

Newton-Evans will also be co-hosting a T&D market briefing with Energy Central in February 2006 during Distributech week in Tampa, Florida.

Keep in mind that a quick visit to our web site, a click under "Trade Events" will list key electric, gas/oil and water related technology events held in all regions of the world.

Please note that copies of Newton-Evans presentations from past conferences are available by written request to cnewton@newton-evans.com.