Market Trends Digest

March 2007

NEWTON-EVANS RESEARCH COMPANY

First Quarter Activities

Newton-Evans completed 6 studies in the month of January. This includes 4 client-funded studies on topics ranging from circuit breaker monitoring to substation communication equipment, the Newton-Evans Worldwide Study of the Protective Relay Marketplace in Electric Utilities: 2006-2008 (Volume 3: Market Forecast and Assessment), and The North American Market for SCADA Systems in Water and Wastewater Utilities (Volume 2: SCADA Market Analysis and Forecast.) In the second quarter Newton-Evans will shift focus to the topics of demand response, performance based rates, demand-side management and renewable portfolio standards.

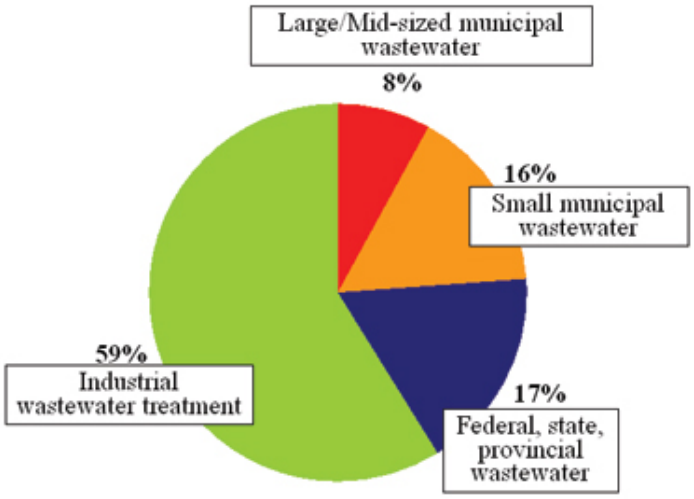
The North American Market for SCADA Systems in Water and Wastewater Utilities: 2006-2007 Market Analysis and Forecast

Following several successful gas and oil industry and electric utility SCADA studies, this is Newton-Evans' first review of water industry SCADA trends since 1995. Technology and communication advances, new market participants and growth in the use of modern computer-based supervisory control and data acquisition systems pointed to the need for a new nationwide study.

More than 150 water and wastewater utilities participated in the survey, which consisted of 18 question groups designed to provide information to consulting engineers, water and wastewater officials and integrators and marketers of control and communications systems and services. The market analysis provided by Newton-Evans describes information on market factors such as industry size and make-up, water/wastewater utility IT expenditures, and water distribution industry market segmentation.

Current SCADA Usage among Water, Wastewater and Combined Utilities

More than 150 SCADA systems were reported as being currently implemented (as of mid 2006) by water and wastewater utility respondents. Allen Bradley (Rockwell) led, with 23 mentions. Wonderware followed with 18 mentions, trailed by Intellution (IFix) with 14 mentions. General Electric was cited nine times as a supplier, ahead of the six mentions for Bristol Babcock (now part of Emerson Process), five mentions for Foxboro/Invensys and four each for Transdyn, Factorylink and Telvent.



Above: Wastewater/sewer industry market segmentation

Plans to Acquire New SCADA Systems or to Perform System Upgrades

More than 80% of the responding water and wastewater utility officials have plans to upgrade, replace or purchase a SCADA system during the 2006-2008 periods. A majority of the respondents plan a system

upgrade during this time frame. About a one-in-ten rate of these officials plans to acquire a completely new SCADA system.

More than $50 million has been earmarked by these respondents for use in upgrading and purchasing new SCADA systems over the 2006-2008 periods.

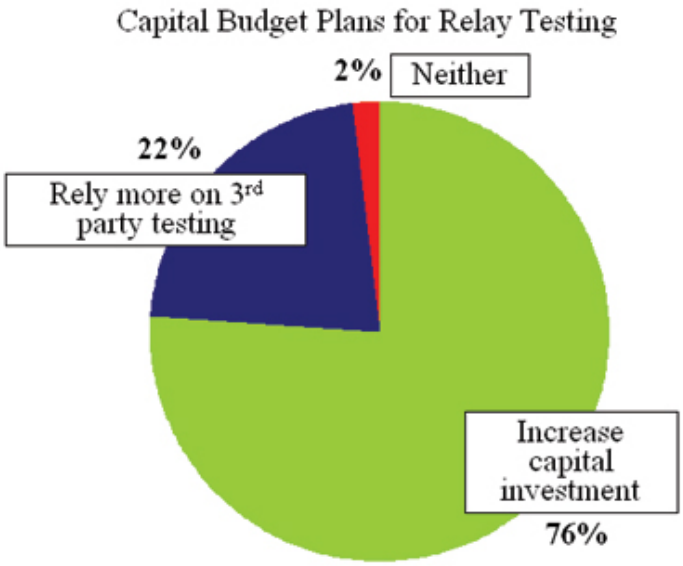
Worldwide Study of the Protective Relay Marketplace in Electric Utilities: 2006-2008 Market Forecast and Assessment

The publication of our Market Forecast and Assessment of the Worldwide Study of the Protective Relay Marketplace in Electric Utilities completes this 4-volume series. Descriptions of the domestic and international protective relay market shares are provided, accompanied by tables and charts that track trends over the past 10 years. The estimates and forecasts contained in this report are based on four sources of information:

1) Utility surveys of more than 200 mostly large utilities in 20+ countries
2) Manufacturer surveys of key protective relay suppliers and related financial and market information obtained about and/or from suppliers
3) Economic information from a variety of public sector and private sector sources
4) Surveys of Industrial End-Users of Protective Relays

Sample size:

Of approximately 5.9 million distribution line miles in North America, our sample represents about 1.1 million miles. This comprises about a 20% sample. Of 55,500 distribution substations operated by utilities, this group of respondents accounts for 11,500 or so of the total, also a 20% sample.



Above: Does your utility plan to increase the capital budget for in-house relay testing, or to rely more on 3rd party testing?

Continuing Uncertainty in the Electric Power Marketplace:

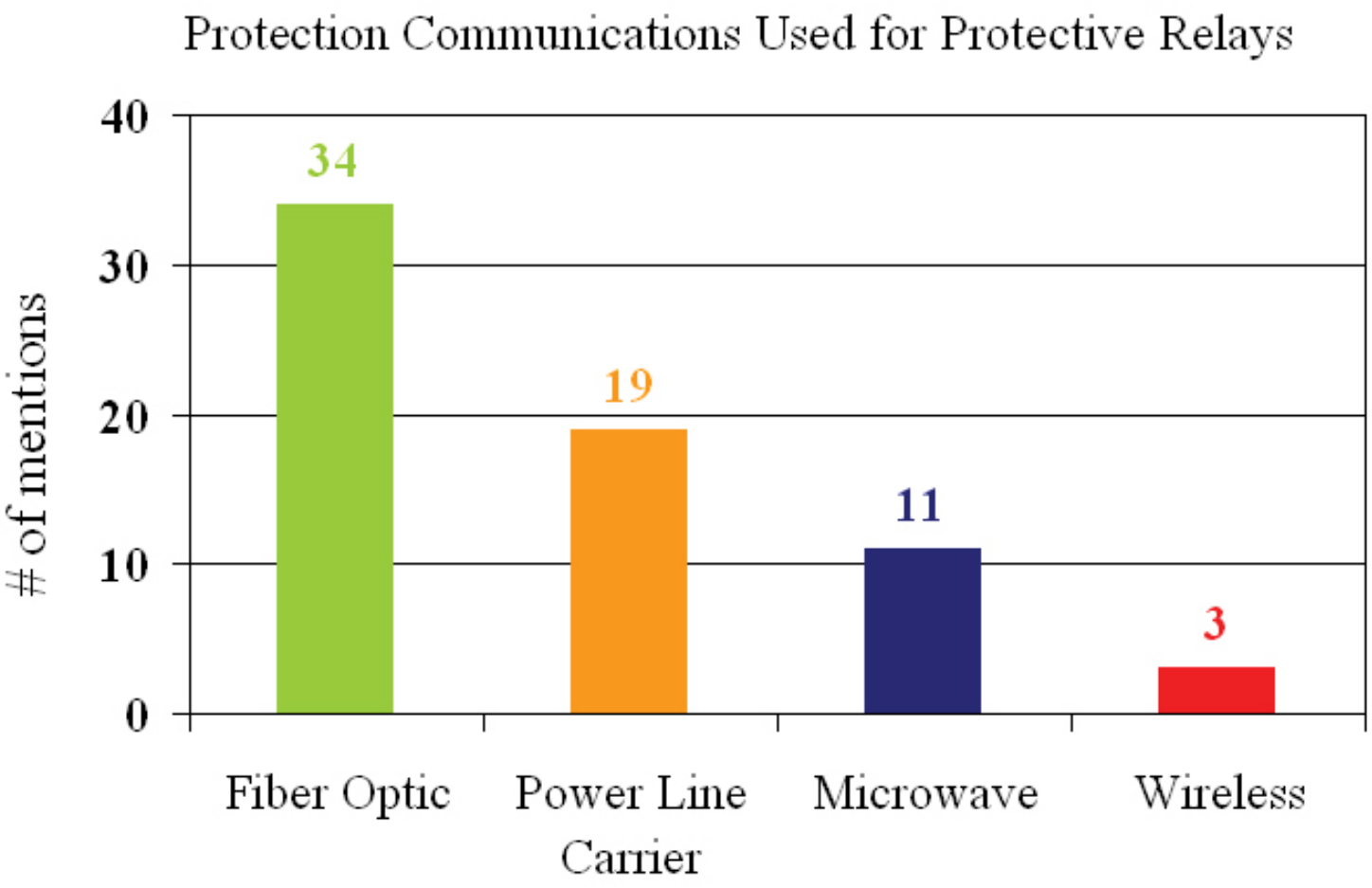
The intervening two-plus years since the last protective relay report series have yet to provide a definitive national approach to deregulation and restructuring. Back in mid-2002, the release of the proposed rule-making (known as the "Mega NOPR"), covering the development of Standard Market Design (SMD) criteria, objectives and operational consideration, was issued by FERC. This SMD document may yet have wide ranging implications for restructuring and regulation of the North American high voltage transmission grid and the future development of the national energy market. Additional new legislation affecting cyber security and utility plant and field security did not have much of an

impact on the protective relay market as well as during the 2002 to 2004 period. In fact, as of year-end 2004, the US Congress had failed to pass any effective piece of energy legislation.

Things changed however, with the passage of the Energy Policy Act of 2005 (known as EPACT 2005). In part, this legislation is aimed at improving electric power grid reliability, and is also helping to drive up sales of digital protective relays (among other T&D equipment). With the advent of new energy developments, from renewables to the advent of advanced metering infrastructure, to demand response initiatives, there will be additional new opportunities for expanding the role and use of protective relays throughout the high voltage and medium voltage grids, and more use of low voltage relays as well.

Special thanks to our customers who ordered these and other reports during our February and March 30% off sale as advertised on our website www.newton-evans.com. Please check our website for the latest information on our research studies, frequent report sales, trade events and activities.

Below: Protection Communications for protective relays



New 2007 Studies and Reports from Newton-Evans Research Company

Performance Based Rates for U.S. Electric Utilities: A 2007 Status Report.

This U.S. market study is well underway with information already gathered in early March, 2007, from all of the state public utilities commissions and from several large investor-owned utilities.

Charley Lidard is again heading up the Newton-Evans investigation into PBRs. This is the third such study undertaken since 2002, and we are attempting to track changes nationwide in the use of performance-based or penalty-based rate structures, and the effects that these special rates have on T&D spending and on service delivery reliability.

This new report will be available in April, 2007. The introductory report price is $395.00 – good through April. After that date, the price will be $450.00.

Demand Side Management: The Next Generation

This new demand side management (DSM) market study is a follow-on and update to our research series on this topic conducted back in 2001, when DSM and active load control were on the wane. Now with the emergence of demand response, concerns for carbon emission, higher energy prices, and growth in consumption and demand, with limited new capacity coming online in the next few years, DSM is once again coming to the forefront as a key electric power demand management tool. DSM had also been the focus of consulting assignments with major American electric utilities in the 1990's.

The new study is under the direction of Jeff Gerhold, who had also served as our lead researcher on the 2001 study. The new research program will result in the publication of a three volume set of reports. Volume One will provide the results of surveys with systems planning officials at more than 100 North American utilities; Volume Two will provide a synopsis of the major and mid-size participants in the market for next generation DSM and load management tools and systems. Volume Three will provide the market forecast and assessment, and general outlook for load management and demand side management activities and programs through 2010.

Introductory pricing for the three-volume report series, to be available in May, 2007, is $1,975.00, increasing to $2,495 in June, 2007.

White Paper and Overview Report Topics

New topics are constantly being added to Newton-Evans library of Executive Summaries and White Papers. New research publications being studied now and scheduled for availability during the second quarter include:

Mergers and Acquisitions in the North American Electric Power Industry: A Retrospective on Successes and Failures. The report will be available in May. The cost for the research paper will be $195.00.

Demand Response: The Commercial and Industrial Market Solution to Electricity Demand Side Management Requirements. This new study is well underway and will result in a report summary available in mid-May. The publication cost is: $195.00.

Broadband Over Power Line: A Global Perspective on Developments: This 25-page report will provide an independent view of the potential for BPL as a commu-

nications technology for utility use as well as a platform on which to provide broadband capability to the world's estimated two billion citizens having access to electricity, but without direct access to cable, fiber or DSL-based broadband services. The report will be available in April. Publication cost is $250.00.

Renewable Portfolio Standards: Mid-2007 Assessment. This overview report, based on PUC interviews, and follow-up research with affected power generation facilities, will provide the essential backgrounder for all types of readers interested in the advancement of renewable energy and the mandates, imperatives and implications for North America power generation facilities and consumers. Within the past few years, about one half of the states within the U.S. have issued RPS directives. Publication date: June 15, 2007. Price: $295.00

Upcoming Studies

Our two flagship series of studies covering the global markets for Energy Management Systems, SCADA and Distribution Management Systems and on Substation Integration and Automation will be conducted during the June-December period of this year. The studies will be priced at the same level as for previous editions of these same studies dating back every two years for the past 20 years.

Keep in mind that our current 30% discount offer applies to all currently available multi-client report series and individual volumes. Additional information can be found at our web site www.newton-evans.com

Broadband over Power Line: A Newton-Evans Market Assessment

After attending the recent Winter Meeting of the United Power Line Council, it is clear that the BPL market is still in an "embryonic" stage of development and commercialization. From our company's own research into this soon-to-be emerging communications technology market, it appears that there are about 100 "trials" underway globally and only a handful of urban deployments through early 2007. These deployments, scattered around the world, have been made by a few utilities and a few city governments. Newton-Evans believes that two "outside entities" hold the keys to eventual large-scale BPL deployments. These are: public service regulatory agencies and international standards development bodies. Our studies indicate that the current number of paid BPL

subscribers, globally, is fewer than 250,000. However, many more could be served by current BPL deployments. Average annual revenues per paid subscriber range from $240 USD to about $600 USD. The main drivers for this market to develop are different for investor-owned utilities than they are for local, state and federal governments that may also operate local electric utilities.

Utilities can obtain significant benefits to their internal operations from BPL deployment, and for several of the utilities researched, almost none want to be directly involved in the retail telecommunications services business. On the other hand these utilities do want to gain the benefits of BPL for their internal use in remote asset management, monitoring and network control. For the last half-century, some electrical utilities have used low-speed power-line carrier (PLC) circuits for control of substation devices, voice communications, and protection of high-voltage transmission lines. High-speed data transmission has been enabled more recently using the same medium voltage electric power transmission lines used for power distribution. A short-range, low-voltage form of power-line carrier is used for home automation and in-house intercom systems.

BPL will become a key communications enabler in some areas of the world for advanced metering infrastructure, a necessary communications-centered-utility-side platform that will enable true automated meter reading. In other utilities, BPL will serve as the enabling communications technology for demand response and a new generation of demand side management (DSM) programs.

In addition, many observers see BPL as eventually able to replace other forms of communication used to provide remote asset management for electric utilities. This would lower the recurring communications services costs related to SCADA if communications are still via leased lines or dial-up phone service. If fiber has not yet been installed, BPL may become the internal communications technology of choice. For decades, applications such as tele-protection, substation control, distribution automation and hundreds of remote area automatic meter reading installations have been justified using older, narrow bandwidth forms of PLC and/or ripple technology.

Some utility regulatory agencies around the world are mandating or preparing to mandate the development of Automated Metering Infrastructure (AMI) programs among electric power (and gas, and water) utilities. The advent of these programs is premised on a two-way service-area wide communications capability. This holds promise for hundreds of millions of dollars/euros of investment in BPL as well as investments in extensions of Asymmetric Digital Subscriber Line (ADSL), Hybrid Fiber-Coaxial (HFC) and cable, especially to provide access to the more rural segments of the electric power service areas. However, the costs to serve the rural markets of the world with high-speed telecommunications tend to be significantly higher per subscriber than are the costs to serve urban population centers due to the additional equipment (repeaters, couplers, boosters et al) and the low customer density per m ile/kilometer.

Regarding the second and potentially larger market segment for BPL is the provision of BPL services to the public as a third alternative to DSL and fiber/cable modem

services in urban areas. Newton-Evans believes that the development and deployment of BPL may be the "great equalizer" that eventually provides the distant suburban and rural electric power service areas of the nation and the world with advanced high-speed communications services. Some telecommunications services companies and/or internet service providers (ISPs) are already leasing or negotiating for power line routes from power utilities to provide BPL services to end-use customers.

The United Power Line Council in the USA, the European PLC Utilities Alliance, the France-based PLC Forum, Japan's PLC-J, South America's APTEL, the international BPL Industry Association, and the UK-based Universal Powerline Association, are all working intensely to help "plant the seeds of future growth for BPL" and all anticipate larger "rollouts" of BPL to a commercial level beginning later in 2007.

Factors Contributing to Growth of BPL:
First and foremost, the necessary infrastructure is already in place to use power line communications (PLC) as an access technology to deliver broadband capabilities. There are power wires and cables already installed in any location where information would be delivered; therefore no new wiring is required for any building, which would enhance the cost-effectiveness of rolling out PLC. Also helping its low-cost nature is the fact that on average in the US, the cost of the equipment needed to set up PLC in the home is cheaper than that of other broadband solutions, such as DSL and cable modem, usually costing between $45-$75 per connection. By being a "plug and play" technology, BPL may also be seen as a much easier set-up for prospective users.

Anyone who has access to electric power would have the means to access broadband using their existing outlets to receive and send signals. Therefore, more people (literally billions) in more locations would be able to access the Internet. Also, users aren't restricted to one "wired" area in the building or home, as any outlet would suffice to access the technology. If using wireless technology, the base can be plugged into any outlet.

In North America, where the electrical distribution system would need extra equipment to propagate the broadband signals over power lines (BPL), the smaller number of users connected to the distribution lines would mean that the connection speed of each household would be increased.

Worldwide Status of BPL Deployment:
Internationally, certain Western nations, including Australia, Spain, USA, Germany and France have now gained significant experience with sizable pilot implementations and limited or substantial commercial deployments. Today's examples include the urban-wide deployment of BPL for the city of Mannheim in Germany, the city of Manassas in Virginia in the USA, among others.

In addition to two key factors already discussed in this report (regulatory approvals and equipment/service/protocol standards) another current key issue remains the high cost of BPL equipment today. At least 50 trials around the world have been underway for about five years or so. Another 50 or more trials and a few commercial deployments are underway in February 2007.

According to one research firm (Paul Budde Communications – Australia) most BPL developments are taking place in Europe, with interesting test cases taking place in Africa and Asia as well. The UN is stimulating the use of BPL in developing nations as a way to introduce Internet services and thereby helping citizens of these countries.

European Deployments:
Major BPL deployments in Europe include these: Mannheim (85,000 households), Fribourg (50,000 households), Linz (35,000 households), Dresden (15,000) and Hameln (25,000 households). Other trials include ENEL (2000 connections), Isle of Man (planned test for 40,000), Reykjavik (up to 50,000) and Scottish Hydro (3,000). Recently, the local Italian utility for Brescia (Selene) deployed a PLC broadband commercial service. Monthly subscription rates range from 17 euros for 4Mb/sec or 28 euros for 10 Mb/sec. The goal here is to attract 12,000 of its 90,\,000 customers to PLC broadband service within three years.

European-wide BPL revenues from paid subscribers (only a portion of the above connected sites) reached perhaps 35-50 million US dollars by 2004, jumping to as much as $60 million in 2005, and perhaps crossing the $100 million level by 2006. The Australian researcher Paul Budde Communication is forecasting 2007 totals possible reaching $250 million.

Asian Deployments:
Little activity underway yet, except for a promised roll-out in Hong Kong underway in late 2006. Most of the advanced countries in the region, including Japan, South Korea, Singapore and Taiwan have had limited tests and some pilot systems over the last few years, but no major commercial BPL offerings have happened to date.

Hong Kong has now about 40,000 active subscribers to a BPL service operated by Cheung Kong Group over the Hong Kong Electric powerline infrastructure. The Hong Kong in-home service is built around Intellon's turbo chipset (<85Mb/sec rate). Australia may be the Asia-Pacific region's "hotbed" for BPL deployment with projects underway with three utilities testing or commercializing BPL as of year-end 2006. These include Aurora Energy (Hobart), Country Energy (Bathurst) and Energy Australia (Sydney). Four other Australian utilities are awaiting results of these tests.

North American Deployments:
Current Communications is a provider of services for two of the major rollouts in the United States at this time. The first has been in Ohio, with a subsidiary of Duke Power (CINERGY) The roll out here is to about 1.5 million customers, but the number of paid subscribers is quite small at this point (1,500 or so). In Virginia, the city of Manassas has signed up 900 residents for BPL services. In Texas, TXU is working with Current Communications on what will become the largest North American deployment of BPL, reaching as many as two million customers.

Other commercial deployments of BPL are occurring in the United States at South Central Indiana REMC, Consumers Energy, Lebanon (Indiana), Bowling Green (Ohio), Central Virginia Electric Cooperative, National Grid (New York) and Pennsylvania Power and Light. Duquesne Broadband is the BPL service provider for Duquesne Light Company in Pennsylvania.

Clearly, a few states are now taking the lead with public utility commissions that are aggressively freeing BPL constraints to encourage rapid development. California, New York and Texas are among the leaders. These are the same states that are also legislating for demand response programs and advanced metering infrastructure.

In Canada, IP Applications, an outsourcing service provider, and PUC Telecom are working on Canada's first test of BPL in the province of Ontario.

South American Deployments:
At least five South American countries have undertaken at least a small BPL test program since 2001. These include Argentina, Brazil, Chile, Honduras and Peru.

Middle East and Africa Deployments:
In this region, Saudi Arabia is probably the most advanced country with regard to BPL deployments. ElectroNet is a Saudi-based BPL provider which has successfully completed a test in Khobar City using KAICOM BPL equipment. Other companies operating tests in Saudi include Electronia and SACMAC.

Expansion of BPL throughout the Middle East is quite likely, given the rather low population density and medium level of powerline access. Countries such as Iran, Egypt, Jordan and Syria, with their population distribution characteristics, offer some good potential for using BPL as a cost-effective alternative to satellite services and to the limited deployments of cable and DSL. In South

Table: Estimates and Forecasts of Growth in Deployment and Paid Subscribers to BPL Services: 2006-2010

Region	Electricity consumers covered by BPL deployments YE 2006	Paying subscribers to BPL services YE 2006	Electricity consumers covered by BPL deployments YE 2008	Paying subscribers to BPL services YE 2008	Electricity consumers covered by BPL deployments YE 2010	Paying subscribers to BPL services YE 2010
Asia-Pacific	195,000	65,000	5,500,000	150,000	14,000,000	1,500,000
South Asia	5,000	2,000	500,000	25,000	5,000,000	300,000
Western Europe	295,000	55,000	3,000,000	350,000	11,000,000	2,000,000
C/E Europe CIS	2,500	5,000	500,000	60,000	3,500,000	450,000
North America	745,000	75,000	6,500,000	500,000	20,000,000	2,500,000
Central/South America	14,000	10,000	3,000,000	75,000	6,000,000	250,000
Sub-Saharan Africa	1,000	2,500	500,000	30,000	4,000,000	75,000
Middle East	40,000	1,000	750,000	20,000	6,000,000	125,000
World Totals:	1,297,500	215,500	20,250,000	1,210,000	69,500,000	7,200,000

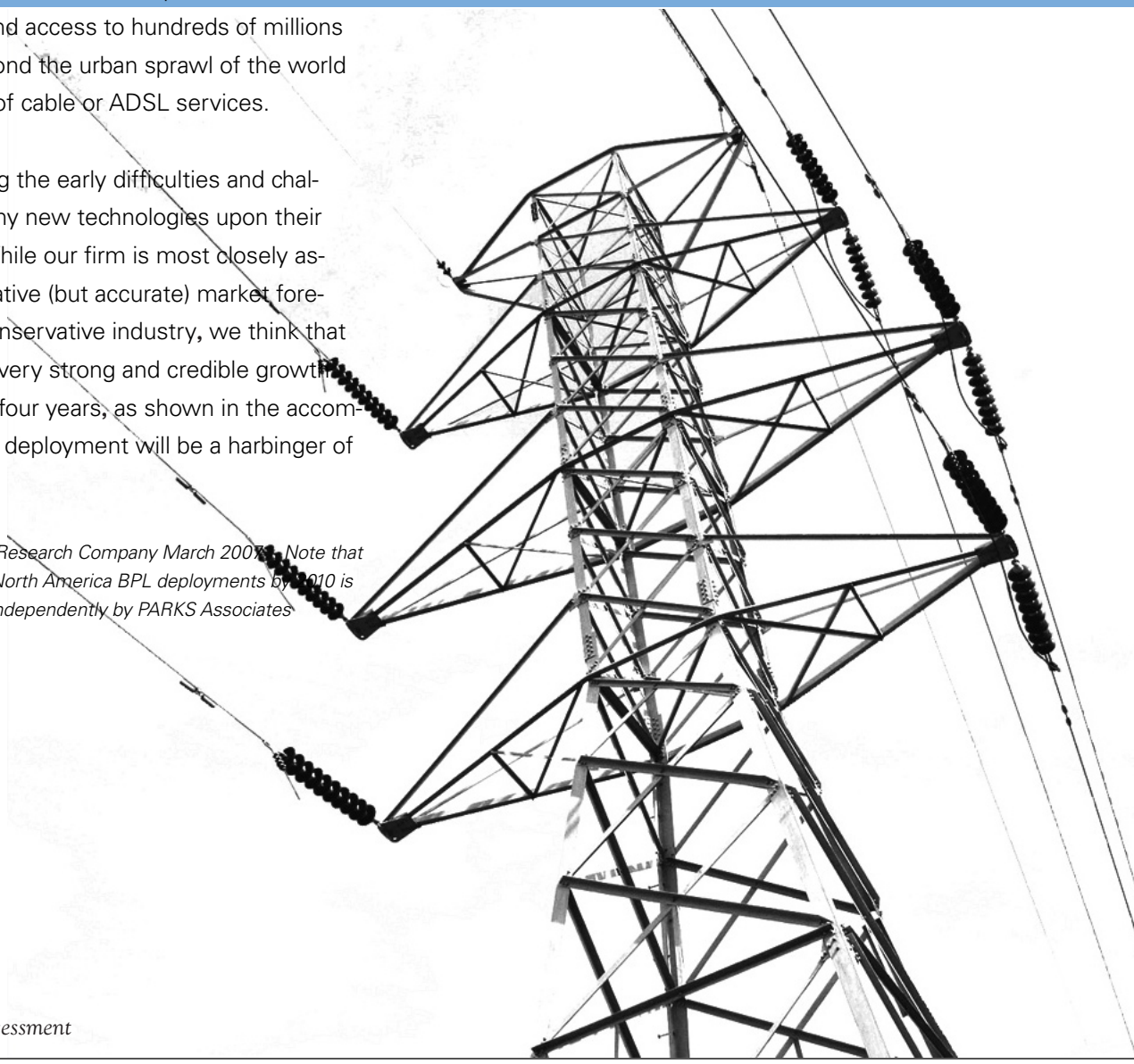
Africa, Pretoria is the likely site of the first African deployment of BPL.

SUMMARY OF OBSERVATIONS:

Overall, despite some formidable obstacles and the maturity of competing technologies, Newton-Evans believes that the BPL market will become an important alternative to existing communications technologies. BPL makes sense for many utilities as an ancillary or primary internal communications enabler. It also makes sense to utilities to provide access rights to professional telecommunications services companies that are in a position to serve the needs for broadband access to hundreds of millions of people that live beyond the urban sprawl of the world and beyond the reach of cable or ADSL services.

BPL is now overcoming the early difficulties and challenges that plague many new technologies upon their initial development. While our firm is most closely associated with conservative (but accurate) market forecasts provided for a conservative industry, we think that BPL will display some very strong and credible growth patterns over the next four years, as shown in the accompanying chart. The TXU deployment will be a harbinger of things to come.

Prepared by Newton-Evans Research Company March 2007. Note that Newton-Evans forecast for North America BPL deployments by 2010 is also the forecast arrived at independently by PARKS Associates (Dallas, TX)



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The Worldwide Study of the Protective Relay Marketplace in Electric Utilities: 2006-2008 — ❒ **Complete set: $5,250**

❒ Volume 1: North American Market	$1,750	❒ Volume 2: International Market	$1,750
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