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MARKET RESEARCH SERVICES

Pantellos Market Research

Pantellos is pleased to announce Market Research Services in order to assist member utilities in sourcing and total cost management.

The Importance of Market Research

Market research is a critical input to the decisions associated with managing a particular supply chain. A thorough understanding of a supply chain and the trends affecting it can assist sourcing managers in making decisions related to timing the market, qualifying suppliers, negotiating pricing and improving materials management processes.

Supply Chain Coverage

Pantellos is initiating its Market Research Services in strategic supply chains that represent high spend and materially impact daily operations. Initial coverage includes wire & cable, transformers, electric meters, wood poles and pipe. Additional supply chains will be added based on member input.

Detailed Research

As part of the service Pantellos will provide members with detailed annual reports (10 pages or more) at the end of the first quarter of each year. Shorter quarterly updates will be sent at the end of each subsequent quarter for the duration of the year. Topics of the reports include a commodity definition & overview, analysis of the supply base and capacity utilization, demand trends, raw material / input trends, pricing trends and process best practices.

Pantellos Capabilities

Pantellos has leveraged the deep supply chain experience of its Portfolio Managers (PMs) to bring in-depth insight into key supply chains. Whereas a utility may only source a commodity once every few years, Pantellos PMs typically source the same commodity several times a year. Those experiences combined with the latest data from raw material indices enable Pantellos to develop a point of view on pricing and processes related to a supply chain.

Pricing

PCA Customers – No Fees

The market research report in each supply chain is <u>free</u> to utility members that have adopted a Pantellos Collaborative Agreement (PCA) in that supply chain. The research fee is included in the PCA commission.

Non-PCA Customers

Utility members that have not adopted a PCA in the relevant supply chain may purchase an annual subscription to the reporting service for a fee of $7,500 per supply chain.

For more information contact your Pantellos Development Manager or Matthew Worth at:

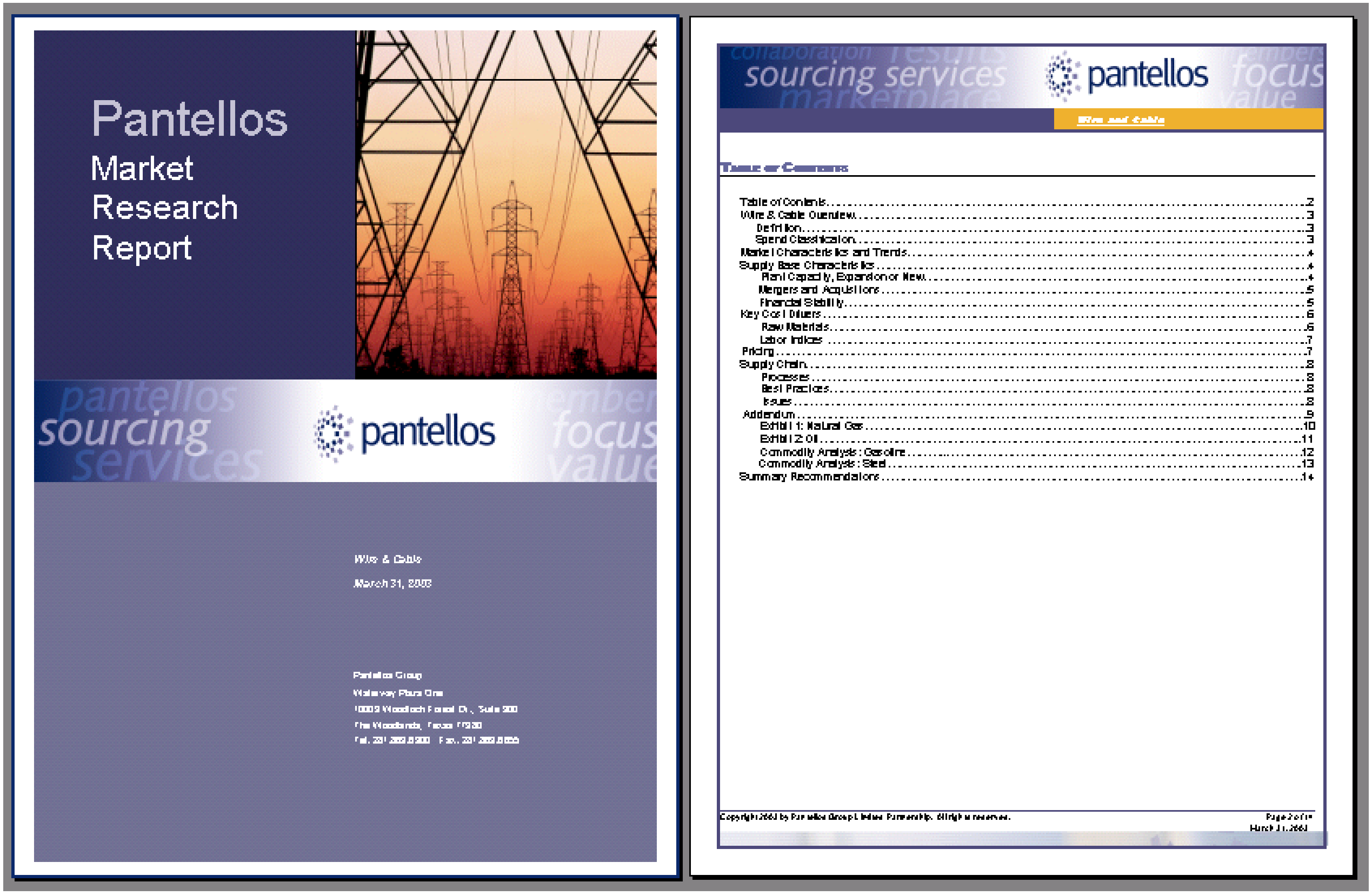
Email: matthew.worth@pantellos.com
Phone: 281-863-6788

fast **facts**

- **Provides input into strategic decisions – market timing, price negotiations, materials management processes**
- **Initial coverage for wire & cable, transformers, meters, wood poles and polyethylene pipe**
- **Detailed annual report with quarterly update**
- **Completed by Portfolio Managers with in-depth and up-to-date experience in the market**
- **FREE to customers that have adopted a PCA in that category**
- **$7,500 fee per supply chain for annual subscription for utilities without the PCA.**

For more information about Pantellos Group Limited, visit www.pantellos.com

Sample Research Reports


Pantellos
Market
Research
Report

Wire & Cable

March 31, 2003

Pantellos Group

Waterway Plaza One

Wire and Cable

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Wire & Cable Overview

Definition

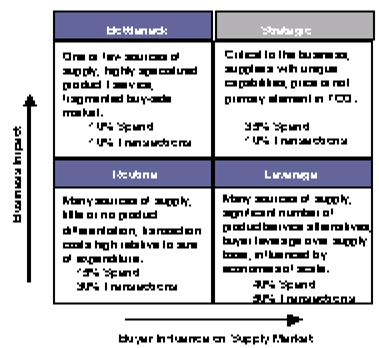
- The market overview will mainly look at wire & cable in the transmission and distribution sectors.
- The applicable sub types are: 600V service cable (LV), medium voltage (MV), bare overhead (Bare) and bare and covered copper.

Spend Classification

Strategic

- Electrical wire & cable is one of the top three commodities purchased routinely by T&D groups, and is viewed as strategic.
- The transmission sector represents about 15-20% of the total wire & cable spend by utilities.
- The distribution sector represents the majority, 80-85%, of total wire & cable purchases.
- Most utilities are heavily driven by internal specifications developed over many years. While many cables look similar, the number of variations from utility to utility can be dramatic.

Figure 1: Classification of Spend (Utility T&D Operations)



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Market Characteristics and Trends

- Electrical wire & cable represents an estimated $1.5B spend in the North American utility market.
- Utilities made a major shift from overhead to underground systems in the 1960s and 1970s. Numerous quality problems with designs and materials surfaced in the 1980s. Hence, cable replacement programs, in addition to system additions, drive demand. Housing starts tend to be a good benchmark in predicting growth.
- Over two thirds of expenditures are routine annual requirements for distribution systems. Generation and transmission expenditures represent the balance, and are more project-oriented.
- Procurement trends for this commodity, particularly with Pantellos customers, have been to purchase direct from few suppliers via long-term agreements.
- The wire & cable market, as the economy in general, has been somewhat soft over the past 1.5 years.
- Reduction in utility budgets and capital spending has been cause for lower than normal spend in the wire and cable category.
- The trend appears likely to continue through 2003.

Supply Base Characteristics

- The ability to bundle product categories has become increasingly important. Being full-line suppliers in the T&D arena positions General Cable and Southwire to continue to be leaders in the marketplace.
- The supplier base is highly competitive between five major suppliers. Estimates of market share are shown below.

Supplier	% of N. Am Market	# of Plants
General Cable	22%	6 in N. Am.
Southwire	17%	9 in U.S.
Okonite	12%	6 in U.S.
Alcan	12%	2 in U.S.
Pirelli	9%	4 N. Am.
Additional suppliers		
Hendrix/Kerite	6%	2 in U.S.
Nexans	6%	2 in Canada
Others	6%	

- International suppliers such as Sural and Conductores Monterrey have continued to gain market share in the US domestic wire & cable market.

Plant Capacity, Plant Expansion or New

- The market has echoed the economy and is somewhat soft, thus capacity is readily available.
- Key suppliers have added several new MV lines over the past 5 years.
- General Cable Corporation closed two of its seven North American plants that manufacture communications cables. The Company also has sold its non-strategic, United Kingdom-based specialty cables business, and they have formed a joint venture company to manufacture and market fiber optic cables. *Multex Investor 5/02*
- Pirelli SpA has confirmed that its Cables and Systems business is closing two UK plants; one plant is in Erith, Kent. The move follows Pirelli's November announcement that it was closing six cables plants worldwide (3 each in energy and telecom). *Nexis, 2/03*
- In energy cables, where Pirelli has 54 plants in 22 countries, Pirelli said it aims to redirect volume "towards lower-cost production facilities," and will also aim for greater specialization in these facilities. The group also said it aims to make its energy cables business more focused on higher added-value sectors. *Nexis 12/02*

Mergers and Acquisitions

- Sept. 22, 1999 – The Marmon Group announced the acquisition of The Kerite Company, a Seymour, Conn.-based manufacturer of power cable.
- Dec. 9, 2002 – Southwire Company and nkt cables, both developers of high-temperature superconducting (HTS) power cables, announced they have joined forces to manufacture and eventually commercialize HTS cable systems. The new company, to be called Ultera, will design and produce a 300-meter cable that will be installed during late 2005 in an electricity distribution system operated by American Electric Power in Columbus, Ohio. Georgia-based Southwire and nkt cables, headquartered in Copenhagen Denmark, will split the cost of developing the cable with the Department of Energy, which will fund half of the project. *Nexis 2003*

Financial Stability

Financial Stability	Alcan Inc.*	General Cable	Nexans SA	Pirelli SpA** 2001	Kerite US Private	Okonite US Private	Southwire US Private
2002 Rev in millions	$12,540.0	$1,453.9	$4,903.9	6,851.0			
2002 Rev % change	-0.7%	-11.50%	6.2%	-5.52%			
2002 Net Profit in millions	$374.0	($24.0)	($41.9)	$729.0			
2002 Profit change	730.00%	-1100.0%	-57.9%	97.3%			
ROA	0.00%	-0.30%	1.90%	0.70%			
Debt/Equity	0.47	4.25	1.69%	1.15			

Resource: Dutcher Brokerage

* Parent company of an international group involved in all aspects of the aluminum and packaging industry. Activities include bauxite mining, alumina refining, power generation, aluminum smelting, manufacturing and recycling and research and technology.

** Pirelli has three core businesses: energy cables, telecom cables, and tires.

- Cost reduction initiatives as well as recently completed investments have helped Alcan in 2002. The company exceeded its projected 2002 savings from the integration of Alusuisse Group Ltd. and from its restructuring program. The Alusuisse merger integration saved $157 million in the year and the restructuring program saved $178 million.
- General Cable has been impacted by the prolonged decline in spending by their telecommunications customers and by lackluster demand in the industrial and energy segments in North America. The company was hit with after-tax charges resulting from their discontinued operations, additional severance and plant closure costs.
- The collapse of the telecom market and the sharp downturn of industrial investments greatly affected Nexans.
- The performance of Pirelli SpA Group in 2002 was strongly influenced by the unprecedented crisis in the telecommunications equipment and infrastructure market. This market has seen a worldwide contraction in demand of approximately 70%.

Key Cost Drivers

Raw Materials

- Raw materials make up 75-80% or more of the product cost.
- The following table illustrates the percentages:

	Polymeric Materials	Metals	Reels	Other Materials	Freight
Type	Insulation (XLP, XLPE, EPR) Polymeric shields (semi-conducting) Jackets (LLDPE, PVC, TPE	Copper Aluminum Lead	Wood Steel Plastic	Metal Tapes Cloth & Plastic Tapes End Seals	LTL Carriers TL Carriers Overnight Express
Estimated % of Product Cost	MV: 35-50% LV: 40-45% Bare: 0%	MV: 25-40% LV: 40-45% Bare: 80-90%	MV: 3-10% LV: 3-5% Bare: 3-10%	MV: 0-1% LV: 0% Bare: 0%	MV: 3-7% LV: 3-7% Bare: 3-7%

- Producer margins are relatively low. For example, Pirelli's Cables and Systems sector gross operating profit was 7.6 percent of sales in 2001, down from 10.2% in 2000. *Pirelli Website*
- Price variability, due to metals adjustment, continues to be a source of inefficiency and frustration to utility procurement managers. Suppliers have shown willingness to enter into firm metals contracts provided specific quantities could be committed.
- Polymeric materials fluctuate indirectly with oil prices. Typically there is little variation over annual periods, and manufacturers tend to negotiate firm prices with compound suppliers such as Union Carbide. There can be swings in compound prices over a 3-5 year period. Suppliers negotiating long-term agreements with utilities typically seek adjustment clauses that allow for relief if unexpected swings occur. With economic conditions being what they are today and gas and oil prices skyrocketing, the compound suppliers are raising prices as much as 30%.
- Wire & Cable manufacturers are being forced to implement rate increases because compounds, freight, utility cost as well as insurance adjustments have increased, therefore eroding profit margins.

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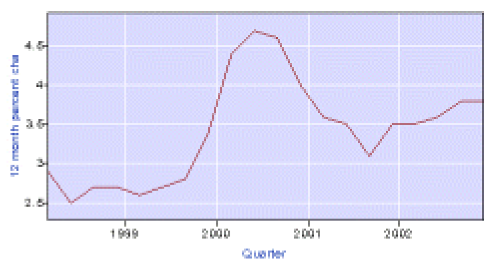
Labor

- In manufacturing, annual gains peaked in 2000 with an annual increase of 4.4%. In 2001, annual gains were 3.4% and in 2002 they were 3.6%.

Employment Cost Index

```
Series Id:        ECU12402A
Not Seasonally Adjusted
compensation:     Total compensation
ownership:        Private industry
periodicity:      12 month percent cha
group:            Manufacturing
```



Source: BLS

Year	Qtr1	Qtr2	Qtr3	Qtr4
1998	2.8	2.6	2.7	2.7
1999	2.8	2.7	2.8	3.4
2000	4.4	4.7	4.8	4.0
2001	3.8	3.6	3.1	3.6
2002	3.6	3.8	3.8	3.8

Pricing

- March 14, 2003, General Cable announced that they are compelled to raise their selling prices to all their distributor and electric utility customers, including those under long-term agreement. *General Cable Website*
- On Feb 14, 2003, Alcan Cable announced it would increase prices on a wide range of its Utility and Building Wire products effective March 3, 2003. The necessary price adjustments reflect the reality of the unsustainable low prices for many products. Rising raw material, fabrication and transportation costs have forced them to implement an 8% price increase on all insulated cable products. *Alcan Cable Website*
- On Feb 7, 2003, AT Plastics announced that as a result of high raw material costs, it was implementing selling price increases on its products through the first quarter of 2003, consistent with the rest of the industry. *AT Plastics*

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- On Nov 5, 2002 Southwire announced a price increase for bare and 600 volt insulated aluminum utility cable products. The increase will affect orders received November 4, 2002 and later. Comparing 2nd quarter 2002 with the same period a year earlier, average operating margins have shrunk by over 50%. *Southwire Cable Website*
- Most contracts contain a metals adjustment clause allowing for fluctuations in copper and aluminum prices. Copper is usually more volatile than aluminum. Prices are typically adjusted monthly or quarterly.

Supply Chain

Processes

- Most IOU's purchase direct from manufacturers rather than through distributors; however, the exceptions to this practice have recently emerged as Strategic Sourcing has included more distributor involvement.
- Within the public sector, the majority of wire & cable products are purchased either on a spot basis or via annual contract. The primary channel is through distribution rather than direct from the manufacturers.
- Current common practices find utilities continuing to focus on the lost and low hanging fruit to capture cost savings.
- Utilities continue to explore improved efficiencies around inventory and planning processes.
- VMI and consignment programs are popular but regularly fail to address the root issues around forecasting and planning
- Utilities scrap a very high rate (5-15%) of their cable purchases. This is due to reel length purchases, how material is distributed and tracked when issued to field crews, as well as the discrepancies between standard lengths delivered and the actual required length to complete the job.

Best Practices

- Strategic sourcing agreements with heavy integration between buyer and supplier are common.
- Leading companies are continuing to eliminate cost through improved planning, forecasting and execution of work schedules.
  -Consignment and VMI processes continue to improve when specific targets around inventory levels and turn over rates are established.
  -Utilities that have studied and evaluated reel lengths, use of partial reels and scrap programs incorporating Like-Kind-Exchange have seen savings as high as 18% (18% refers to the savings associated to the total dollars recovered from the scrap program).
  -e-Commerce technologies such as - EDI, ERS, ASN and EFT continue to help streamline processes when implemented effectively. Adoption of the XML and XCBL standards continues to increase. For example, more than 50 percent of the current Pantellos wire and cable supplier trading parties are either currently integrated, or in the process of integrating, to the Pantellos Marketplace.

Issues

- Continuing to ignore poor forecasting, planning and execution will cause excessive purchasing inventory levels.
- Overall logistics from the manufacturer to the utilization (inventory, transfers...) continue to be a problem for both the buyer and supplier.
- Failure to aggregate scrap and evaluate the current disposal process will prevent utilities from capturing savings in this area.
- Continued collaboration between all parties to improve business processes is critical.

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Addendum Re: March Producer Requests for Price Increases

In mid-March 2003 several major cable & wire manufacturers have sent letters to customers to request price increases. Manufacturers are citing price increases based on the volatility seen in the market around oil and gas. In most cases, letters have been sent to utility customers with a promise of further details that will clarify the need for increases.

Although there is some merit to the concerns regarding increases in natural gas pricing, the markets have radically reversed their upward trend since the manufacturers issued their letters two weeks ago. Utilities should scrutinize supplier requests based on the market data provided in this Addendum.

Price Increase Requests

As of March 25, 2003 Alcan, General Cable, Pirelli, Hendrix and Southwire have sent notices to their customers that they will be seeking relief in the form of price increases.

- Alcan has asked for 8% on insulated products,
- General has asked for 7% on 600v insulated and 10% on MV
- Pirelli has asked for 8% on 600v insulated and 10% on MV.

Rationale for Price Increases

Suppliers appear to be basing their requests due to increased cost of materials:

- Natural gas prices: driving up the price of compounds (jacketing, insulation, semi-conductive compounds, and start up compounds)
- Oil prices: driving up the cost of freight services
- Some suppliers have also requested increases related to steel, labor rates and reels.

Example of supplier rationale (illustrative)

- Compounds: 5%
- Steel 1.5%
- Packaging: 0.5%
- Freight 0.1%
- Labor: 0.5%
- Total Price Increase: 7.6%

Commodity Analysis – Natural Gas

The Facts

Dow, Equistar and Borealis represent the major suppliers of compounds. Dow has announced increases of $0.06 per pound on January 24, 2003, $0.05 per pound on February 21, 2003 and $0.06 per pound on March 4, 2003 (March increase was listed as a "surcharge" while January and February were announced as increases). This represents approximately a 28% increase since December of 2002.

Natural gas prices have driven this increase. Prices spiked to $9.10 per MMBtu at the end of February. HOWEVER, natural gas prices have dropped over the past week and were at $5.20 per MMBtu as of March 19th. Prices should level off and remain consistent with the end of the traditional heating season.

Addendum Exhibit 1 charts the prices for natural gas futures contracts near settlement (next page).

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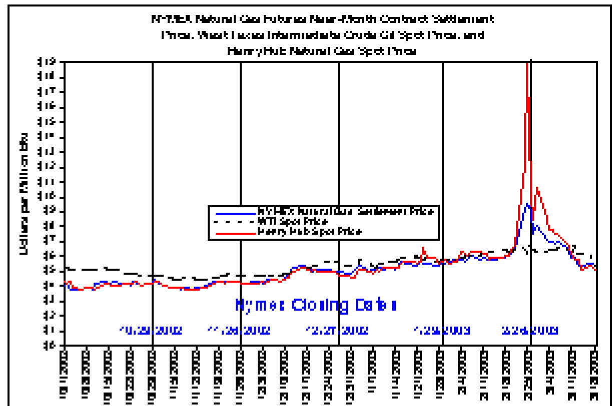
Addendum Exhibit 1: Natural Gas Futures and Crude Oil Spot Prices for Past 8 Months



Note: The West Texas Intermediate crude oil price, in dollars per barrel, is converted to $/MMBtu using a conversion factor of 5.80 MMBtu per barrel. The dates marked by vertical lines are the NYMEX near-month contract settlement dates.
Source: NGW Daily Gas Price Index (http://intelligencepress.com)

Conclusions Regarding Increase Requests for Compounds

Suppliers have cited a doubling of natural gas prices in the past 12 months and a quadrupling over the past 12 months. The increases of the past 12 months were driven by war tensions and the market has returned to equilibrium with the start of the war. This is consistent with the market fluctuations of the Gulf War in 1991 (see Addendum Exhibit 2). If this trend holds true, prices will decrease further upon conclusion of the war.

Current market prices are up approximately 20% from October 1, 2002. As indicated on page 6 of this report, compounds make up approximately 40% of the variable cost of medium and low voltage cable. As such, if manufacturers have not secured/managed their commodity risk effectively (i.e. through hedging) they may be facing as much as an 8% increase in the variable cost to produce these cables.

Pantellos recommends that utilities seek details regarding cable manufacturers' supply contracts and hedging practices. Any negotiation regarding price increase should only address short-term relief in anticipation of reduction

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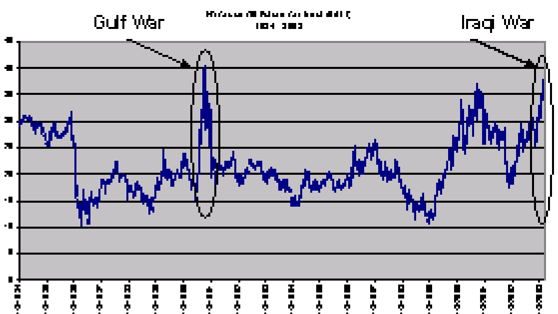
in gas prices upon completion of the current war. Furthermore, there is opportunity to tie long term contracts to natural gas indices in order to ensure realization of savings when prices decline even further.

Addendum Exhibit 2: Peace and Wartime Trends for Oil Futures (01/03/1984 – 03/11/2003)



Wartime Oil & Gas Trends

The above chart indicates that oil and gas prices increased significantly during the war and plummeted quickly thereafter. Primary inflection points include:

- July 1, 1990 $16/bbl
- August 1, 1990: $20/bbl
- October 11, 1990 $40/bbl
- January 16, 1991 $32/bbl
- January 17, 1991 $21/bbl

Prices hovered close to $20/bbl for the rest of 1991 and went down further in 1992.

Conclusions regarding requests for increases related to gasoline & freight

Expect similar market dynamics during this war. Any price adjustments should be temporary and/or tied to a commodity index.

Note: many analysts expect oil prices to return to the $20/bbl level by the end of 2003. The end of the war and the end of the Venezuelan oil fields strike will determine the timing.

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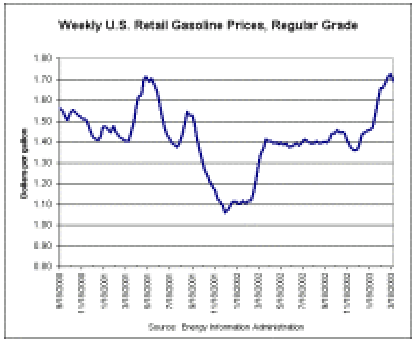
Commodity Analysis: Gasoline (Impact on Freight Charges)

Addendum Exhibit 3: Retail Gasoline Prices, Past 2.5 Years

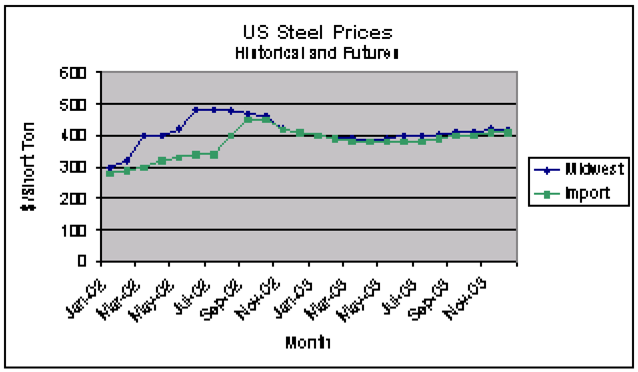


Conclusions

Gasoline prices have spiked and are likely to return to equilibrium at the same rate as the natural gas market, based on the trend from the last war. Any price relief should be temporary and linked to an index.

Commodity Analysis: Steel

Addendum Exhibit 4: US Steel Prices 2002 - 2003



Conclusions regarding requests for price increases related to steel

According to *North American Steel Markets Monthly*, cold rolled steel prices peaked in August of 2002 at $480/short ton. March prices are listed at $390/short ton. The fluctuations were due to:

- Low demand in 2001 halted to capacity shutdown in early 2002
- Temporary upward market fluctuation in summer of 2002 due to imposition of Section 201 tariffs on foreign steel.
- Late 2002 increase in domestic capacity (due to tariffs on foreign steel) made production outpace demand again.

Steel futures remain flat through the end of the year, hovering around the $400/short ton mark.

Conclusion: price increases related to steel prices appear to be unfounded based on market price trends.

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Summary Recommendations

Wire & cable manufacturers are facing slight, temporary increases in the variable cost to produce medium voltage and low voltage cable.

- Natural gas price temporary fluctuations could impact their variable cost by as much as 8% if they have not adequately hedged or tied their contracts to indices.
- Gasoline price temporary fluctuations could impact the cost of delivery, but fuel is a relatively small percentage of the total price of the wire & cable product.
- Steel price trends do not justify any increases whatsoever.
- Labor rates (as indicated on page 7 of this document) were up only slightly at the end of 2002 and are significantly lower than the year before. There is no apparent justification for a price increase here.

Some Potential "Rules of Thumb" in Addressing Price Increase Requests

- Ask the supplier to break down the components and variable cost of the product and tie the price increases to market trends.
- Don't just rely on historical prices. Use futures and forecast values. In almost every case, indices are expected to head downward.
- Don't misinterpret the temporary spikes in oil & gas as long term pricing trends. The Gulf War trend is the best leading indicator for the direction of those indices.
- If you are willing to accept any price increases due to these temporary conditions, insist that they be tied to an index so that you may benefit when these commodities decrease in price. If you share in the price increase, you should share in the price decrease.

For additional information, please contact Don Server at Pantellos (281) 853-6738.