

**EXHIBIT NO. \_\_\_(DEM-14C)  
DOCKET NO. UE-07\_\_\_  
PCA 5 COMPLIANCE  
WITNESS: DAVID E. MILLS**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**In the Matter of the Petition of  
PUGET SOUND ENERGY, INC.**

**For Approval of its March 2007 Power Cost  
Adjustment Mechanism Report**

**Docket No. UE-\_\_\_\_\_**

**THIRTEENTH EXHIBIT (CONFIDENTIAL) TO  
PREFILED DIRECT TESTIMONY OF DAVID E. MILLS  
ON BEHALF OF PUGET SOUND ENERGY, INC.**

**REDACTED  
VERSION**

**March 30, 2007**

**REGIONAL ENERGY MARKET EXECUTIVE REPORT**

October 26, 2005

**WEST MARKET OVERVIEW**

- More than a month after Hurricanes Katrina & Rita struck the Gulf of Mexico significant production is still off-line:
  - **69% of all GOM crude oil production is off-line (1 million barrels/day)**
  - **56% of all GOM natural gas production is off-line (5.6 Bcf/day)**
- **Price action has been extremely bullish and volatile.**
  - Natural gas prices for the NYMEX Jan 06 contract is trading near the \$15/MMBtu mark
  - Front month NYMEX volatility is 60%, **thus the market expects the contract to move on average \$0.45/day.**
- West basis markets remain very weak for the winter period.
  - **For the coming winter, the Northwest is priced more than \$6/MMBtu below the Northeast.**
  - Our price advantage should continue until new pipelines are built to take Rockies gas to the Northeast
- The West continues to have record storage inventories, but overall US winter supply adequacy concerns continue to create fear, uncertainty and a high price environment.
- **PacNW heat rates continue to be weak.**
  - Average Flat Heat Rate for 2006 is 8.0.
  - Highest heat rate is in August 2006; it is 10.4.
- Northwest natural gas utilities presented their winter portfolios to the WUTC on Oct 12, 2005:
  - All appear to have adequate supplies for the winter, and they appear prepared to meet a winter peak event.
  - All have hedged significant amounts of their portfolios at lower than current market prices.

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**REGULATORY AFFAIRS**

- **The California ISO & the CPUC are arguing over who should bear local capacity requirements in congested pockets of the transmission system.** The ISO is concerned it would be unduly burdened, if load-serving entities are not immediately required to acquire capacity and reserves in their areas. Estimates indicate that load-serving entities may need to acquire significant amounts of local resources in 2006, but these resources may not be available to smaller utilities. Otherwise, to ensure reliability, the ISO will have to continue to rely on inefficient reliability must-run generation throughout the year.
- PacifiCorp filed a unique general rate case in Wyoming last week that would enable the company to make adjustments to rates in the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> year after the effective date of the new rate structure. The proposal is intended to relieve the commission and the company of the burden of full litigation, and allow PacifiCorp to more efficiently recover prudently incurred costs. PacifiCorp also asked for an increase in ROE from 10.75 to 11 percent.
- Terasen's (BC Gas) shareholders overwhelmingly approved the proposed purchase by Kinder Morgan. The provincial government is expected to give final approval on Nov 10.

**REGIONAL INFRASTRUCTURE**

- Massive producer transportation turnbacks on Duke's Westcoast pipeline has left the pipeline significantly unsubscribed for the coming winter. Because of this, the price spread between Station 2 (northern BC) & Sumas (US/Can Border) is large enough so that all variable & fixed costs are being recovered by firm shippers.
- Only 931 miles of new circuit transmission lines were built in 2004. This was a hot topic during The Future of the West Energy Conference in Montana last week. Numerous western governors and regulators attended the meeting. In his concluding remarks, conference host Montana Governor Brian Schweitzer, said: **"We have no solutions for energy other than conservation. We cannot produce more generation and transmission over the next two years"**.

**MISCELLANEOUS**

- Two new PacNW Winter weather outlooks appear to rather consistent. Both AccuWeather and [REDACTED] are forecasting increased precipitation and snowfall at lower elevations than last year, even though the latter half of the winter is expected to milder than normal.
- The Senate Energy & Natural Resources Committee voted to include ANWR drilling authorization in a budget bill that goes to a full Senate vote next week. Even if the measure passes, the EIA expects that oil and gas would not start flowing from Alaska until 2015.

**THE GLOBAL STAGE**

- With the US natural gas price spike, we are now outbidding all European markets, except Spain, for LNG cargos thru Winter 06/07.
- **Large amounts of new LNG supplies will be coming on-line in the Atlantic Basin in 2006. Nigeria, Egypt and Trinidad will produce an additional 4.5 Bcf/day of natural gas by the end of 2006 that the US will be competing for.**
- OPEC spare capacity is expected to rise. Leading forecaster sees crude in the mid \$50/barrel in 2006.

## REGIONAL ENERGY MARKET EXECUTIVE REPORT

November 14, 2005



### WEST MARKET OVERVIEW

- Two months after Hurricanes Katrina & Rita struck the Gulf of Mexico significant production is still off-line:
  - **49% of all GOM crude oil production is off-line** (736,000 barrels/day)
  - **40% of all GOM natural gas production is off-line** (4 Bcf/day)
- **Price action has been surprisingly bearish given the amount of production that is still off-line.**
  - The NYMEX Jan 06 natural gas contract has fallen more than \$3/Dth in the last 2 weeks to \$12/Dth.
  - Front month NYMEX volatility remains high > 60%, so the market expects the contract to move ~ \$0.40/Dth/day.
- West gas markets, both spot and basis, remain very weak.
  - **Rockies spot prices for November have traded consistently under \$6/Dth!!!**
  - **On average, winter PacNW natural gas prices are more than \$7/Dth below Northeast prices!**
- The market continues to be able to inject record amounts of gas into storage in November, even though so much Gulf Coast production is off-line. This is making the market feel more comfortable about winter supply adequacy.
  - Injections are a function of above normal temperatures in the East, industrial demand destruction, and conservation.
  - Last week we injected a record 51 Bcf of gas into storage. **We could reach 3.3 Tcf of storage prior to December.**
- **PacNW heat rates continue to weaken.**
  - Average Flat Heat Rate for 2006 is now only 7.1.
  - Highest heat rate is in August 2006; it is only 9.1.
- Power prices also weakened in the last 2 weeks. 3Q2006 On-peak power has fallen from over \$90/MWh to the low \$70/MWh.

### REGULATORY AFFAIRS

- **California energy authorities are considering raising the price cap on wholesale electricity prices from \$250/MWh to \$400/MWh due to the massive run-up in natural gas prices.** California only buys about 5% of its power on the spot market these days, so even if prices rose temporarily to the cap, it would have a minimal effect. If approved by state regulators and the FERC, the cap would be raised about a year from now at the earliest.
- The contentious issue of whether or not Northwest Natural Gas is required to take back its industrial transport customers at the utilities' hedged winter gas price has been solved. The utility is not required to take back its large industrial customers and provide them with its hedged commodity price of \$7.35/Dth. (The market price for that period is \$10.50/Dth). However, Northwest Natural will provide a cap for the industrials where they will not pay more than \$11.80/Dth
- House leaders were forced to take the Arctic National Wildlife Refuge (ANWR) drilling provision out of a budget bill last week. The Senate may revive the measure, but coastal offshore drilling appears to have no hope of being passed.

### REGIONAL INFRASTRUCTURE

- With Rockies trading about \$1.40/Dth below Sumas so far in November, NWP has developed constraints along the mainline for South to North flows. The pipeline came close to calling an Operational Flow Order (OFO) last week, which would have forced firm shippers to flow incremental gas supplies from Sumas and reduce Rockies flows. The steep Rockies price discount vs other markets is making producers more and more anxious and motivated to build long-haul pipelines going east.
- **BPA failed to get support for its "convergence" plan as to how it might integrate its dominant grid operations into a regional transmission organization.** The intent was to try to merge the region's public power sector Transmission Improvement Group (TIG) model with most of the region's Grid West model. Grid West would be in-line with FERC's preferred regional transmission organization model, but under this model FERC has centralized control, at the expense of regional regulators and stakeholders.

### MISCELLANEOUS

- **The start of the 2005/06 water-year for the PacNW looks very positive.** June rains raised reservoir to near normal levels, and **precipitation for Sept & Oct was more than 150% above average.** Snow pack is slightly above normal.
- Industrial/Manufacturing demand destruction has been significant with the rise in energy prices. The American Chemistry Council reports that there were 70 plant closures in 2004, and another 40 are slated for closure this year. Of 120 new chemical plants expected to be constructed around the world next year, only one will be built in the USA.

### THE GLOBAL STAGE

- With US natural gas price falling significantly, and European markets rising, we are again being outbid for spot LNG cargoes in the Atlantic. Imports to the US have fallen to pre-hurricane levels of 1.3 Bcf/day
- Crude oil prices continue to slide both in global and domestic markets. **Crude oil prices closed at a 4-month low today at \$57.75/bbl**
- The next OPEC meeting is Dec 12. With prices having fallen about \$15/bbl in the last 2 months, OPEC may be close to cuts in production quotas.

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

November 30, 2005

### NORTH AMERICAN MARKET OVERVIEW



- More than two months after Hurricanes Katrina & Rita hit the Gulf of Mexico significant production is still off-line:
  - **38% of all GOM crude oil production is still off-line** (564,000 barrels/day)
  - **30% of all GOM natural gas production is still off-line** (3 Bcf/day)
- Cumulative hurricane related losses so far are as follow:
  - 93 million barrels of crude oil. (This represents ~ 3% of our annual domestic production)
  - 492 Bcf (billion cubic feet) of natural gas. (This represents ~ 4% of our annual domestic production)
- **Significant progress has been made in recent days to bring gas & crude production back on-line**
  - Excess capacity at non-damaged natural gas processing plants is being used.
  - Constrained gas behind damaged pipelines is being diverted to non-damaged ones.
- Despite the massive production losses, **energy markets have made incredible efforts to reduce winter shortage risks.**
  - We have averaged 55Bcf/week of gas into storage since the hurricanes! We have the 2<sup>nd</sup> highest inventory on record.
  - Another large addition to distillate (heating oil) inventories this week has us 11% ahead of last year.
- High prices have stimulated drilling efforts. **We currently have more rigs drilling for gas and crude oil than ever before.** However, production per rig has continuously declined. The result is that domestic production is fairly stagnant.
- Calpine, with the largest gas fired merchant generation fleet in the country, appears to be headed for bankruptcy.
  - This indicates that just about the only real spare capacity in the energy market is excess gas-fired generation.
  - **The generation overbuild that occurred during the “energy crisis” has still not been absorbed by the market.**
  - Heat Rates, despite a record hot summer, have remained low, and therefore generation profits have too.

### WESTERN MARKET SNAPSHOT

- Northwest natural gas continues to enjoy a significant price advantage over Northeast prices.
  - Sumas spot prices are \$2.50/Dth below Northeast spot prices.
  - For the rest of winter, **Northwest forward prices are trading \$6.50/Dth below Northeast forward prices.**
- Northwest and Northeast power prices are trading at fairly comparable levels in the spot market. (~\$85/MWh flat)
- **Northwest forward power prices for the rest of the winter are ~\$55/MWh below Northeast forward prices,** indicating that natural gas is the marginal fuel in both markets.
- **PacNW heat rates have risen somewhat in the last two weeks, but are still historically low.**
  - Average Flat Heat Rate for 2006 is now 7.6.
  - Highest flat monthly heat rate is in August 2006; it is 9.3.

### GLOBAL ENERGY TRENDS

- Over the last few weeks European natural gas prices for the winter have skyrocketed, increasing by nearly \$6/Dth. At the start of November, the US was outbidding Europe by nearly \$2/Dth, and we were importing 1.8 Bcf/day of LNG. However, **with the European price run up, our LNG imports have shrunk to near term historic lows of about 1.1 Bcf/day.**
- Ahead of OPEC's next meeting on Dec 12<sup>th</sup>, there have been indications that the organization is willing to raise inventory levels to ease market supply concerns and stabilize prices. **OPEC is considering increasing stockpiles so that they cover 56 days of global demand from the current 52 days forward cover.** This is a very encouraging and a somewhat surprising development, since crude oil prices have been falling steadily for 3 months and are now trading in the mid \$50/bbl. This is well off the highs of \$71/bbl at the end of August, but prices are still very high from a historic perspective.

### REGIONAL INFRASTRUCTURE

- The greed of Rockies producers coupled with the desperation of East Coast consumers is being spurred on by an ever widening natural gas price differential between West and East. The intense desire to arbitrage away this price spread can be seen in the interest placed in building a large long haul pipeline from the Rockies to the East Coast. Both Kinder Morgan and El Paso are competing to build such a pipeline. The El Paso project got a big boost this week as potential shippers indicated they were willing to commit to more than 3 Bcf of future capacity during the “open season”.

### MISCELLANEOUS

- **The single biggest driver of domestic energy prices, and even global energy prices for the next four months will be Northeast weather.** Monitor the weather from Chicago to Boston & New York to understand how energy prices are behaving.
- Latest forecasts for the Pacific Northwest indicate that **for the Jan - June 2006 period we will have near normal hydro conditions vs the 30 yr. average.** For the last three years we have consistently averaged in the mid-80% of normal range.

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

December 19, 2005



### NORTH AMERICAN MARKET OVERVIEW

- Significant production is still off-line in the Gulf of Mexico after the hurricanes, but **repairs have been made quickly lately**:
  - **28% of all GOM crude oil production is still off-line** (426,000 barrels/day)
  - **22% of all GOM natural gas production is still off-line** (2.2 Bcf/day)
- **Natural gas prices hit new record highs last week**, as very cold weather gripped the Mid-West & East Coast
  - The January 2006 NYMEX contract reached \$15.78/MMBtu
  - Temperatures for Chicago were 48% below normal, and New York was 18% below normal
- Due to the cold weather during the first half of December, **last week's storage inventory was a record withdrawal**
  - The market withdrew 202 Bcf of storage, vs the 5 year average of 104 Bcf.
  - There is currently 2,964 Bcf of gas in storage, vs the 5 year average of 2,857 Bcf.
- **The market has been exceptionally volatile**, trading almost exclusively off weather and weather forecasts
  - Based on forward volatilities, **the market expects the January natural gas contract to move on average \$0.51/Day**
- **Last week's price spike sent Northeast natural gas prices well beyond low sulfur distillate fuel prices** based on MMBtu equivalency, even when you include emissions costs. Rough calculations indicate that distillate traded around \$13/MMBtu, while gas prices traded above \$17/MMBtu. Those that have dual fuel capability switched from gas to fuel oil.
- **Energy Industry consolidation is on the rise**, so far 2005 is already 38% ahead of 2004 based on acquisition dollars spent. This suggests that returns & revenues are robust in our industry and worth pursuing...
  - Last week Florida Power & Light announced they were buying Constellation Energy
  - ConocoPhillips announced plans to purchase Burlington Resources

### WESTERN MARKET SNAPSHOT

- **Last week both natural gas & power prices reached levels not seen since the "energy crisis" of 2000/01.**
  - Sumas spot prices traded well into the \$13/Dth range
  - Mid-Columbia day ahead on-peak power prices trade into the \$130/MWh.
- Implied spot market heat rates in the Pacific Northwest were remarkably high last week. Flat heat rates reached into the low 10s, and plants that had not run in months came on-line.
- Forward heat rates, however, have remained virtually unchanged.
  - Average Flat Heat Rate for 2006 is 7.5.
  - Highest flat monthly heat rate is in August 2006; it is 9.4.
- The last few weeks have been dry, making the hydro forecast a bit less optimistic. Accumulated runoff since October 1st has been 127% of normal, but forecasts are coming in slightly below normal at about 95%.

### GLOBAL ENERGY TRENDS

- European natural gas prices are still trading above US prices, despite the price spike, and therefore **we are not attracting any additional LNG**. Import volumes are at their historic levels for 2005 – approximately 1.4 Bcf/day.
- **The world's largest natural gas production plant came on-line over the weekend in Trinidad**. It produces approximately 800,000 Dth/day of LNG for export. The logical market for this LNG is the USA, due to the geographic transportation advantage, but even so, if European prices are high enough, some of it will be diverted.
- OPEC met on Dec 12<sup>th</sup>, and decided to keep production at current levels. However, they will have a special session on January 31 to reassess supply and demand factors.
- Chinese crude oil demand has grown by 4.4% over 2004. However, **apparently in November 2005, Chinese crude demand was 33% greater than in November 2004.**

### REGIONAL INFRASTRUCTURE

- The California Public Utility Commission plans on adding 3000 MW of solar power capacity through incentives to home owners and businesses worth \$2.8 billion over the next 10 years.
- Despite significantly colder than normal temperatures in the PacNW last week, natural gas pipelines and distribution systems held up well. **Last week the West region had one of its largest natural gas storage withdrawals on record**, yet we still have more inventory than ever before at this time of year.

### MISCELLANEOUS

- **Last week vintage 2005 SO2 emissions credits traded up to \$1,500 /ton**. Four years ago the price of these credits was \$150 /ton.
- China's economy vaults to fourth largest economy, literally overnight, as previously unaccounted for business were discovered in a year long census effort. Mostly likely this will put added pressure on the Chinese to let their currency float more with the market.

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

January 5, 2006

### NORTH AMERICAN MARKET OVERVIEW



- WHAT A DIFFERENCE A YEAR MAKES! (Well even just two weeks)
  - **The fear and shortage premium has come entirely out of the market.**
  - Very warm weather and continued warm weather forecasts have been the primary drivers in the price collapse.
- **Natural gas prices are the lowest they have been in 4 months**
  - Prompt month NYMEX contract has fallen \$6/Dth (40%) since mid-December 2005!
  - Prices 6+ month forward have fallen as well, but are still \$0.50-\$1 above pre-hurricane levels
- Today's EIA storage inventory number showed an **INJECTION** of 1 Bcf for the week ending Dec 30, 2005
  - The average over the last 5 years for this week has been a withdrawal of 128 Bcf
  - With the warm weather, it is possible that we will have another injection next week
- Significant production is still off-line in the Gulf of Mexico after the hurricanes:
  - **27% of all GOM crude oil production is still off-line** (404,000 barrels/day)
  - **19% of all GOM natural gas production is still off-line** (1.9 Bcf/day)
- Power prices across the country have retreated along with gas prices
  - February on-peak power prices in New York have fallen from ~\$135/MWh to ~\$90/MWh.
- **The massive collapse in natural gas prices has not created a situation where natural gas are trading below residual fuel oil** based on MMBtu equivalency, which is surprising, since crude oil prices have remained strong.

### WESTERN MARKET SNAPSHOT

- **Natural gas & power prices have retreated greatly, but are still historically high.**
  - Sumas spot prices are trading about \$8/Dth. (They averaged \$5.65/Dth for January 2005)
  - Mid-Columbia day ahead on-peak power prices trade \$61/MWh. (They averaged \$52/MWh for January 2005)
- Implied spot market heat rates in the Pacific Northwest have fallen as well. Flat heat rates are currently in the mid 7s, vs the plus 10 mark just a few weeks ago.
- Forward heat rates, however, have remained virtually unchanged.
  - Average Flat Heat Rate for 2006 is 7.8.
  - Highest flat monthly heat rate is in August 2006; it is 9.5.
- Near term historic and projected **precipitation and natural stream flows through July are expected to be 98% of normal**, according to the Northwest River Forecast Center. Hymet and 3Tier project the same period to average ████% of normal. All services have increased their forecasts during the last few weeks.

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### GLOBAL ENERGY TRENDS

- A natural gas supply agreement dispute between Russian & Ukraine during the last week, coupled with very cold weather in Europe has spiked EU natural gas prices even higher. As a result **US LNG imports have decreased to record lows**. The average import quantity last week was a meager 1.1 Bcf/day.
- **U.S. LNG imports for 2005 averaged approximately 1.75 Bcf/d. This is essentially flat with 2004.** Most experts predicted a 20% year on year increase, but numerous cargo diversions to Europe kept imports flat.
- OPEC has been indicating that it may lower production at its next meeting to support crude oil price. The organization is concerned that the usual Q2 global demand slow down will create an oversupply situation. The next scheduled meeting is January 31.

### REGIONAL INFRASTRUCTURE

- **The PacNW is awash in gas at the moment.** The Jackson Prairie storage facility that was ████% full at Christmas is now ████% full, as regional demand has plummeted.
- The West region as a whole injected 8 Bcf into storage last week, and we currently have record storage inventories across the West.
- The proposed KinderMorgan / Sempra Rockies Express pipeline, which hopes to take Rockies gas to Eastern markets got 1.3 Bcf/day of conforming bids during its "open season" last week. (Close to their 1.5Bcf target)

### MISCELLANEOUS

- Total US crude oil storage stands at 321.6 million barrels, which is 12% ahead of last year levels. Distillate fuel oil stocks are ahead of last year by 2%.
- **Gasoline stocks on the other hand are 7% behind last year levels, and behind the 5 year average.** Last month domestic gasoline demand reached its highest levels since the peak of the Summer driving season in August.
- US refinery utilization rates are running at 89% of capacity.

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

January 26, 2006

### NORTH AMERICAN MARKET OVERVIEW



- **Near term natural gas & power prices continue to weaken dramatically** driven by unseasonably warm weather.
  - **We appear headed for the warmest January ever recorded nationally.**
  - The market is “writing-off” winter, because 3 out of 5 winter months are already history.
- Prompt month natural gas prices are now below pre-Katrina hurricane levels, but...
  - **Natural gas prices beyond summer 2006 are still higher than they were before the hurricanes.**  
This is primarily due to the fact that the market recognizes that there will be a large amount of excess storage when we exit this very warm winter season, but in the longer term, North American is still supply constrained.
- Today’s EIA storage inventory number was a withdrawal of only 81 Bcf.
  - Last year’s withdrawal was 230 Bcf. The 5-year average for this week is 180 Bcf.
  - **We now have the highest storage inventories ever recorded for this time of the year** both nationally and the West.
- Significant production is still off-line in the Gulf of Mexico after the hurricanes:
  - **25% of all GOM crude oil production is still off-line** (343,000 barrels/day)
  - **16% of all GOM natural gas production is still off-line** (1.65 Bcf/day)
- Power prices across the country continue to retreated along with gas prices
  - February on-peak power prices in New York have fallen to \$70/MWh.
- **The massive collapse in natural gas prices has created the rare situation where natural gas is now trading below residual fuel oil** based on an MMBtu equivalency. *With so much gas on the market, can some coal get displaced short term?*

### WESTERN MARKET SNAPSHOT

- **Energy markets in the Pacific Northwest continue to fall rapidly, due to a lack of demand, and a lot of precipitation.**
- Precipitation for January, as measured at Grand Coulee has been 170% of normal. For the water year to date (Oct 1–Jan 23) precipitation has been 116% of normal.
- The NW River Forecast Center in their Jan 20, 2006 mid-month update is now projecting stream flows at Grand Coulee to be 101% of normal for the Jan-Jul period.
- Snowpack: Cascades are 100 - 110 % of normal. BC is also above normal, and the Sierras are 122 - 160 % of normal.
- NOAA predicted a weak La Nina forming in the Pacific Ocean. La Ninas generally bring cold, snowy & wet winters to the NW Cascades & Rockies. La Ninas occur every 3-5 years; the last one occurred in 2000-2001, and it was a mild event.
- **Implied forward heat rates in the Pacific Northwest have fallen greatly with the robust hydro situation.**
  - Q2 2006 On-Peak heat rate is only 5!
  - Highest Flat monthly heat rate for 2006 is in August; it is 9.

### GLOBAL ENERGY TRENDS

- **Geo-Political Risk continues to prop-up global crude oil markets. This week, summer forward crude oil contracts traded over \$70/bbl.**
  - Iran’s nuclear ambitions are the biggest driver in the equation, but Nigerian rebels attacking oil platforms and foreign oil companies has contributed as well.
- **Last week it became known that Kuwait's oil reserves are only half those officially stated, according to internal records.** It was estimated that Kuwait held about 10 % of the global reserves prior to the discovery. The bigger fear of course is Saudi Arabia, which holds an estimated 25% of the world’s crude oil reserves. Some industry experts have been saying for years that the Saudi’s are overstating their reserves. Saudi Arabia has denied this, but has not allowed any outside geological surveys. *Is the Kuwait re-statement a harbinger of things to come?*

### REGIONAL INFRASTRUCTURE

- **With the falling market heat rates most gas-fired power plants are being displaced,** which is adding incremental natural gas to a market already flush with supplies.
- Natural gas transportation values along the Duke/Westcoast Pipeline in BC remain robust, despite warm temperatures. Spreads for January & February are trading \$0.10/Dth above all variable and fixed costs, and summer forward spreads are twice what they were last year. The massive producer turnbacks have altered the shipping dynamics to where it is more advantageous to hold firm transport.

### MISCELLANEOUS

- **LNG imports have fallen to the lowest levels in two years, as European countries outbid US markets.** For the last few weeks we have been averaging only 0.9 Bcf/day. This represents about 1.5% of average domestic demand.
- **China and India,** the world's two fastest growing energy consumers, agreed to co-operate in securing crude oil resources overseas. The agreement is aimed at preventing the two nations' competition for oil assets from pushing up prices.

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

February 14, 2006

### NORTH AMERICAN MARKET OVERVIEW



- **Near term natural gas & power prices continue to weaken...**
  - January 2006 was the warmest January ever recorded nationally.
  - **The market has written-off winter!** The focus is now on the massive storage inventory going into summer 2006.
- Prompt month NYMEX natural gas prices are approaching \$7/Dth.
  - **Market sentiment is that prices will remain weak, or get weaker through the first half of summer**, but thereafter the threat of hurricanes, and the possibility of at least a normal winter should keep prices fairly firm.
  - Storage is always near full going into winter, and yet price spikes still occur regularly, because storage represents an insufficient and shrinking means of meeting increasingly inelastic winter weather demand.
- **Significant production is still off-line in the Gulf of Mexico after the hurricanes, and it is coming back slowly.**
  - 25% of all GOM crude oil production is still off-line (364,000 barrels/day)
  - 16% of all GOM natural gas production is still off-line (1.55 Bcf/day)
  - Some capacity may never return, at least not in its original form. BP, for example, has decided to not repair its 650,000 Dth/day Grand Chenier gas processing plant in Louisiana.
- Near term natural gas prices have collapsed so that they are trading well below residual fuel oil.  
**The question is what is the floor for natural gas prices in the near term?**
  - At \$5.75 - \$6.00/Dth natural gas starts to displace some inefficient coal peaking plants.
  - Sustained prices at \$4.00 - \$4.50/Dth discourages new drilling & LNG development (but LNG is influenced by global pricing)

### WESTERN MARKET SNAPSHOT

- Energy markets in the PacNW have continued on a fairly steady downward trend, due to ample natural gas & hydro supplies.
- Spot market Heat Rate is approximately 8, which is right in line with the national average.
  - Highest spot Heat Rate is in California; it is 9.3.
  - Lowest spot Heat Rate is in the Ohio Valley; it is 5.5. (Due primarily to Appalachian coal).
- Forward market Heat Rates have strengthened slightly, but remain weak.
  - Q2 2006 On-Peak heat rate is 5.75. (Lots of run-off is expected to keep gas-fired power plants off-line).
  - Highest Flat monthly heat rate for 2006 is in August; it is 9.45.
- **Last week FERC raised the spot market price cap in the West-trading region (WECC) from \$250/MWh to \$400/MWh.**
- **During the next few days, the region will experience its coldest weather yet this winter.**
  - Core Gas is projected to have a [REDACTED] Dth/day load on Friday. (Average February load is [REDACTED] Dth/day)
  - Power Portfolio is projected to have an [REDACTED] MWh load on Friday. (Average February load is [REDACTED] MWh/day)

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### GLOBAL ENERGY TRENDS

- **Crude oil markets are largely ignoring geo-Political risks...**
  - The prompt month WTI Nymex crude oil contract has fallen \$10/bbl in 2 weeks.
  - Crude oil is currently trading at \$58.55/bbl. There should be good buying support around the \$56/bbl level.
  - Iran seems intent on continuing its nuclear weapons development program, and a peaceful solution seems remote. (Although largely ignored by the market at the moment, this situation poses the biggest upside risk).
- It is expected that OPEC will start talking about production cuts at its next meeting if prices drift into the mid \$50/bbl range.
- **US LNG imports have picked up dramatically during the last two weeks.**
  - Imports have risen from 0.9 Bcf/day to 1.55 Bcf/day.
  - This is mainly due to the fact that British & EU natural gas prices have fallen significantly.

### REGIONAL INFRASTRUCTURE

- Northwest Pipeline, which owns a 1/3 share in the Jackson Prairie natural gas underground storage facility in Chehalis WA, along with Puget & Avista, is planning on holding an "open season" to gauge the regional market interest in additional storage capacity, if it were developed.
- Last week Northwest Pipeline, along with Fort Chicago and PG&E, also announced that it was sponsoring a 1 Bcf/day LNG regasification terminal in Coos Bay, OR. The terminal would connect to both regional interstate pipelines, Northwest & PG&E to provide gas to Oregon & California.

### MISCELLANEOUS

- For the first year ever, **in 2005 the UK became a net importer rather than an exporter of crude oil.** Apparently the nation's North Sea fields are insufficient to meet its needs.
- The current infatuation with bio-diesel as an alternative transportation fuel seems rather misplaced, since it takes 11 acres of planted corn to fuel one car for one year.



## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

March 8, 2006



### NORTH AMERICAN MARKET OVERVIEW

- **Near term natural gas & power prices continue to weaken, forward markets remain firm.**
  - Prompt month natural gas prices have fallen another \$0.50/Dth to \$6.55/Dth, in the last two weeks.
  - The December 2006 natural gas contract is up \$0.05/Dth for the same period at \$9.78/Dth.
- NYMEX natural gas prices have been fairly stable during the last few weeks...
  - Based on forward volatilities, **the market only expects the April 06 contract to move on average \$0.19/Day**
  - The big “bearish” factors of record storage inventories, and warm weather patterns, and near normal hydro conditions have already been priced into the market, so significant new price drops have really not occurred.
- **Surprisingly, in the last 3 weeks, almost no gains have been made in bringing hurricane-damaged production back on-line:**
  - 25% of all GOM crude oil production is still off-line (360,000 barrels/day)
  - 15% of all GOM natural gas production is still off-line (1.5 Bcf/day)
- Some bullish factors are starting to appear that may limit how much further natural gas and power prices can fall:
  - At \$5.50 - \$5.75/Dth natural gas starts to displace some inefficient coal plants in the West.
  - Industrial demand from big energy consumers like fertilizer manufactures is starting to reappear.
  - Fear of another active hurricane season is being fueled by the fact that Gulf of Mexico water temperatures are already 1.5 degrees above normal, which is very favorable for storm development. The expectation is that we will have 20 named storms this hurricane season.

### WESTERN MARKET SNAPSHOT

- Spot energy markets in the PacNW have continued on a steady downward trend, due to ample natural gas & hydro supplies.
- Spot market flat Heat Rates have fallen from approximately 8 last month to approximately 7.5 today.
  - Sumas daily gas prices averaged \$6.70 last month, today they were \$5.70 per Dth.
  - On-peak power prices averaged \$51 last month, today they traded \$43.50/MWh.
- Near-term forward market Heat Rates have fallen slightly, due to a robust hydro situation:
  - Q2 2006 On-Peak heat rate is 5.39. (All gas-fired power plants are expected to be off-line).
- West regional gas storage remains at record levels.
  - There are currently 271 Bcf of gas in storage, vs 224 Bcf last year, and the 5-year average is 188 Bcf.
  - This equals 220,000 Dth/day of additional gas on the market vs last summer. (PSE’s ave summer load is [REDACTED] Dth/day).
- Due to the massive natural gas price declines in the last 3 months and due to rising drilling costs, EnCana, one of North America’s biggest producers, has decided to cut its 2006 drilling budget by \$500 million. Reductions appear to target Rockies coal-bed methane projects.

REDACTED  
VERSION

### GLOBAL ENERGY TRENDS

- **Crude oil markets have been fairly stable during the last few weeks, despite serious geo-political events.**
  - The prompt month WTI Nymex crude oil contract has traded between \$60.30 - \$63.92/bbl.
  - In this time period insurgents have attacked Saudi Arabian refineries, and the Iran nuclear issue continues to fester.
- OPEC met today and decided to keep its production output at 28 million barrels per day, which is where it has been for the last 8 months. The organization cited Nigerian violence and possible UN sanctions against Iran as supply concerns.
- The UN’s nuclear inspection agency said, “it can’t conclude that there are no undeclared nuclear materials or activities in Iran”. **This opens the door for the UN Security Council to levy political and economic sanctions on Iran.** The energy related risk is that Iran retaliates by keeping crude oil exports off the market.

### REGIONAL INFRASTRUCTURE

- Colorado’s largest utility, Xcel Energy, was forced into rolling blackouts late last month, stemming from failed natural gas supply deliveries. The extreme cold weather caused gas well and gas processing equipment failures.
- More than 4,000 MW of nuclear & coal fired power plants are currently off-line, some due to maintenance, others may be closed permanently. Amazingly, the 1,600MW Mohave coal-fired power plant in Nevada is shuttered due to environmental concerns. It would cost \$1 billion to in emissions controls to bring the plant back on-line.

### MISCELLANEOUS

- **LNG imports to the US are virtually non-existent!**  
We are importing less than 1 Bcf/day on average so far this year, which is less than we did in 2004 and 2005.
- We have nearly 5 Bcf/day of LNG import capacity, yet we attract almost no global LNG, because the rest of the world is outbidding us for it. The only steady source of LNG supplies are from Trinidad.
- We had a massive 6+ million barrel build in crude oil stocks today; the biggest build in 2 years. Our crude oil inventories are now 10% ahead of last year.

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

March 28, 2006



### NORTH AMERICAN MARKET OVERVIEW

- **Natural gas & power markets have settled into a fairly tight trading range during the last few weeks.**
  - April 2006 NYMEX natural gas prices have ranged between \$6.50 - \$7.50/Dth.
  - April 2006 Mid-C peak power prices have ranged between \$39 - \$42 /MWh
- **Bullish Market Factors**
  - Hurricane Fears (About 1.5 Bcf is still off-line from last year & an active hurricane season is predicted)
  - Crude Oil (Domestic inventories are 10% ahead of last year, & 15% of the 5 yr. Ave., yet crude is \$66/bbl)
  - LNG (During the last month, imports have averaged less than 1 Bcf/day. The US is ~ 60 Bcf/day market)
  - Gas on Coal Competition (West natural gas prices have are flirting with displacing inefficient coal units)
  - Return of previously off-line industrial demand (Fertilizers & Plastics, primarily)
- **Bearish Factors**
  - Huge natural gas storage surplus (519 Bcf ahead of last year, 741 Bcf ahead of the 5 yr. Ave.)
  - Canada also has a large storage surplus (This should translate into ½ Bcf of incremental exports to the US this summer)
  - Gas / Residual Fuel Oil Substitution (Gas has traded consistently below Residual, few switching opportunities exist)
  - Northwest Hydro is Normal (For the last 3 years it has averaged 85% of normal)
  - The Summer of 2005 was one of the hottest on record (Gas fired power plant demand should be lower this year)
- The factors described above pertain to the domestic gas and power markets in the medium term (< 12 months).  
**(In the long term, we have not made any significant improvements to our tight supply / demand situation)**

### WESTERN MARKET SNAPSHOT

- Near term natural gas prices have risen over the last few weeks vs power prices, thus **Heat Rates have fallen:**
  - Q2 2006 On-Peak heat rate is now 4.9 vs 5.4 in early March.
  - The highest On-Peak Heat Rate for any month is in August 2006. It is 9.1
- The timing of the bulk of the hydro run-off is becoming a bit more clear, as less than expected water was passed through the Columbia River system in February and March. Colder than normal temperatures was the main factor. **We may therefore have more water than anticipated in the June – July period.**
- For the West region, we have 239 Bcf of natural gas in underground storage, compared to 211 Bcf last year, and 173 Bcf for the 5-year average.
- The large storage surplus, coupled with the increased hydro supplies is more than offsetting the fact that western nuclear and coal fired power plants are off-line, and therefore power prices have been stable, even showing slight declines .
  - It is estimated that 1,800 aMW are off-line due to nuclear outages (SONGS & Palo Verde 1) and 700 aMW from coal plants (Mohave & Boardman), but we are getting ~ 4,000 aMW of increased hydro generation vs last year.

### GLOBAL ENERGY TRENDS

- **Crude oil prices are up more than 10% in the last three weeks**, which is somewhat surprising given the large US inventory surplus. However, crude oil is a global commodity:
  - Geopolitical unrest continues to support higher prices. (Norwegian oil workers strike threat, Nigerian unrest, etc.)
  - China & India's economies are expected to grow 9% on average this year; together they contain almost 1/3 of the world's population. Their demand for energy is expected to grow exponentially as they continue to industrialize.  
**(The US consumes 25 barrels of oil per capita per year, China & India consume less than 3 per capita).**
- The UN Security Council seems unable to agree on sanctions, or a clear course of action on Iran and how to curb its nuclear weapons ambitions. Most experts believe that any clear action, whether sanctions or a military strike, are at least a year away. This of course means that fear of crude oil supply disruptions will linger on.

### REGIONAL INFRASTRUCTURE

- Wyoming Interstate Company's Piceance gas pipeline goes into service on April 1. It has a capacity of 350,000 Dth/day and will run from the Piceance Basin in Colorado to interconnect with the WIC & CIG gas pipelines in Wyoming. These are the first steps to bringing Colorado gas north and then east to Kansas & Nebraska. Regardless of which large competing long haul pipeline carries Rockies gas to the East Coast, this Piceance pipeline is well positioned to feed either one.

### MISCELLANEOUS

- US consumer confidence grew to the highest level in four years based on a strong labor market with decreasing unemployment and increasing wages. (This is helping rally crude and gasoline markets)
- Cyclone Glenda (a 165-mph hurricane) is forcing evacuations in northern Australia, shutting in crude oil production and LNG exports. (Bulls are finding this a good reason to continue to rally crude oil markets).

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

April 11, 2006

### NORTH AMERICAN MARKET OVERVIEW



- Natural gas & power markets continue to trade in a tight range.
  - The May 2006 NYMEX natural gas contract has been trading between \$6.65 - \$7.45/Dth.
  - May 2006 Mid-C peak power prices have ranged between \$24 - \$20 /MWh
- **Even though spot markets are weakening slightly, forward prices are stable or strengthening.**
  - The prompt month NYMEX contract is trading down to where it was a month ago, yet Winter 2006/07 Sumas prices are up \$0.45/Dth from a month ago.
  - A month ago Mid-C May 06 On-peak power prices were \$28/MWh, today they are trading near \$20/MWh, but Dec 06 Mid-C On-peak power prices have risen from \$69/MWh to \$73/MWh.
  - *This suggests that the market rightfully realized that in the longer term we have done very little to solve our energy supply situation. The current lack of volatility and weakness is primarily a function of a record warm winter.*
- 1.36 Bcf/Day of natural gas supply is still off-line from last year's hurricanes. Repairs have been much slower than expected.
- BP's 460,000 bbl/Day Texas City refinery is restarting production, 6 months after being shut by Hurricane Rita
  - At full capacity, this plant provides 3% of US gasoline supply.
  - This may ease some of the bullish concerns about adequate gasoline supplies for the "summer driving season".
- LNG cargoes have picked up during the last few days to more historic levels of about 1.8 Bcf/Day, but imports for the first quarter were well below the 2004 & 2005 averages.

### WESTERN MARKET SNAPSHOT

- Mid Columbia runoff expectations have decreased slightly to 96% due to low precipitation in Feb and Mar. Conversely, the Snake River runoff has increased, lifting runoff volumes at The Dalles at the lower Columbia back to normal levels (100%).
- BPA is being forced to draft heavily to meet flood control levels, and spring runoff is commencing, so **there is a great deal of hydro power currently available to the market.**
  - The high volume of water is forcing maximum generation at the dams, leaving no room to carry reserves on Mid-C hydro. As a result, parties must occasionally run out-of-the money gas fired units to meet reserve requirements.
  - Due to the ample water situation, Heat Rates have been compressed further to under 4 for Q2 2006.
  - Heat Rate further out in time have remained mostly unchanged, since the ability to store water is limited.
- Heat Rates remain historically weak for the PacNW. The average On-peak Heat Rate for Q1 2007 is only 7.8.
- Record natural gas storage inventories persist for both the US as a whole, and the West.
  - The first storage injection of the season is expected tomorrow, at about 35 Bcf.

### GLOBAL ENERGY TRENDS

- **Crude oil prices continue to surge upward to new record highs.**
  - The December 2006 WTI crude oil contract is trading above \$72/bbl.
- **The run-up in crude oil prices are being fueled primarily by geopolitical events:**
  - Nigerian rebels are calling for specific attacks on Exxon Mobil personnel and production facilities.
  - Western diplomats are saying that Iran is on the verge of operating a 164-centrifuge cascade, used to produce fuel for nuclear power reactors or material for the explosive core of an atom bomb.
  - The New Yorker published a lengthy article over the weekend discussing Iran's nuclear weapons projects, and different military strike options against Iran. ([http://www.newyorker.com/fact/content/articles/060417fa\\_fact](http://www.newyorker.com/fact/content/articles/060417fa_fact))
- For the second half of 2005, **China's economy grew at 11.5%. India grew at 7.3% in 3Q05 & 9.8% in 4Q05** vs the prior year. Both economies grew faster than expected, and faster than historically observed.

### REGIONAL INFRASTRUCTURE

- The 54 Bcf Clay Basin gas storage facility in Utah is shut down for most of April for scrubber installations, in order to improve gas quality issues that have in the past not met other regional pipeline specifications. One would think that with this large field inoperable during the start of the injection season that prices would be weaker in the Rockies, but prices have remained relatively strong, indicating that gas can move more easily east into the mid-continent with the new pipeline capacity.

### MISCELLANEOUS

- The EIA said that U.S. retail gasoline prices should increase another 10 to 15 cents from the current national average of \$2.68 a gallon and peak in May.
- The virtual merger between The NYMEX and the Chicago Mercantile Exchange should cause more energy commodities to trade electronically rather than by "open outcry" on the floor of an exchange. Chicago Mercantile Exchange's highly regarded Globex electronic trading platform will be open for business around the clock.

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

May 3, 2006



### NORTH AMERICAN MARKET OVERVIEW

- **The Energy Market in North America is currently a tale of two different commodities.**
  - Crude oil and its derivatives (gasoline, fuel oil, etc.) are very bullish.
  - Natural gas is relatively bearish in the short term.
- **Crude oil is trading at new record highs**, and has been on a steady upward march since February 2006
  - **January 2007 WTI crude oil is trading near \$78/barrel.**
  - Although the market is well supplied, based on domestic inventories, and OPEC production numbers, the fear premium caused by geopolitical unrest continues to underpin high prices.
- **The prompt month NYMEX Natural Gas contract looks weak**, trading between \$6.50 - \$6.90/Dth.
  - As with crude, there is ample gas on the market stemming from a record warm winter and a huge 450 Bcf storage inventory surplus vs last year.
  - Forward natural gas prices, however, remain well supported, as the market thinks the current glut will be worked off.
- The Contango Effect (The market is said to be in "Contango" when near term prices are weak compared to futures prices)
  - This current price structure makes storage capacity for both gas & crude oil exceptionally valuable.
- **US Energy Secretary Bodman said that high gasoline prices present a crisis for Americans**, yet he also said that there are no quick solutions, and that prices will remain high for the next few years.
  - In an attempt to ease prices, the Bush Administration has temporarily suspended deliveries into the Strategic Petroleum Reserve, suspend ethanol as a gas additive, and proposed raising car fuel efficiency standards.

### WESTERN MARKET SNAPSHOT

- **Yet another Pacific Northwest utility has been purchased by an outside company.** It was announced last week that the Australian company Babcock & Brown plans on buying Northwestern Corp, Montana's largest utility.
- NW River Forecast Center is predicting that **the Jan-Jul flows above Grand Coulee will be 102% of normal.**
  - The large run-off volumes are depressing spot market power prices, to where off-peak power is a mere \$4/MWh.
  - At times the run-off has been so significant that [REDACTED]
- **Heat Rates have risen slightly in the past week, but remain historically weak.**
  - The average On-peak Heat Rate for Q3 2006 is 8.5.
  - The average On-peak Heat Rate for Q1 2007 is 8.0.
- **Sumas spot gas prices are in the \$5.30/Dth range; they have not been that low since November 2004.**

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### GLOBAL ENERGY TRENDS

- **Crude oil prices continue to be driven upward by geopolitical fears:**
  - Iran continued its defiant stance, saying it would ignore a UN resolution against its atomic energy program.
  - Bolivia has announced the nationalization of the natural gas industry, sending troops to each facility owned by foreign companies. Bolivia's reserves of 50 Tcf are the second largest in South America, behind Venezuela.
- **Crude oil also continues to be driven up by real fundamental demand.**
  - China's economy grew at an estimated 10.2% in 1Q2006.
  - The EIA Administrator states that there is no "speculative bubble" behind the rise in US crude oil prices, demand is simply outstripping supply.
- Domestic LNG imports for April 2006 averaged approximately 1.6 Bcf/day, which is a significant increase relative to 1Q2006 volumes, but still lagging behind the 2005 daily average.

### REGIONAL INFRASTRUCTURE

- As part of Northwest's Capacity Replacement project, a result of the pipeline's failures suffered regionally over the last several years, the company has begun significant work in western Washington. The project involves abandonment of 268 miles of their 26 inch pipeline between Sumas and Washougal, while constructing approximately 80 miles of additional pipeline capacity to support their 36 inch line. The project will replace most of the approximate 360,000 Dth/day of capacity lost from the failed 26 inch line.

### MISCELLANEOUS

- Fuel switching economics have favored burning natural gas rather than residual fuel oil for electric generation for a few months now. As crude and its derivatives continues to remain strong, and gas remains relatively weak, the floor price for natural gas becomes coal fired generation of various economics and efficiencies.
- The Canadian dollar is at its highest exchange rate ever vs the US dollar. It settled at 0.90 today. (Energy related natural resource length pays off for Canada)

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

May 17, 2006



### NORTH AMERICAN MARKET OVERVIEW

- **Both natural gas and crude oil markets have entered a weak pricing environment.**
  - Crude oil prices are down nearly \$7/barrel in the last week.
  - Natural gas prices are down nearly \$1/Dth in the last week.
- **The NYMEX prompt month natural gas contract broke through 3 month long key support of \$6.50/Dth last week.**
  - The spot NYMEX contract is now the lowest it has been in a year.
  - Cash prices are now the lowest they have been since November 2004. Rockies traded \$4.75/Dth last week.
- Natural gas prices continue to be pressured by **record underground storage inventories**, and for the last three weeks that surplus vs last year has been growing.
  - **We currently have 480 Bcf more natural gas in storage than last year!**
  - If hurricanes and very hot summer weather do not materialize to help balance the surplus, the market will run out of storage injection space at the end of summer, and natural gas will be forced to temporarily displace coal units.
- **Prices beyond the 6 month period remain very strong from a historic perspective.**
  - The NYMEX winter price strip is trading at \$10.50/Dth!
  - This contango shaped forward price curve makes storage capacity exceptionally valuable.
- Power prices are tracking lower with gas prices, but there is a delayed and lagged effect, as less liquid power prices are slower to react to the current bearish market sentiment.

### WESTERN MARKET SNAPSHOT

- The Pacific Northwest continues to have near normal hydro conditions, and the spring run-off is in full effect.
  - No gas-fired power plants are expected to run until maybe July, when the run-off starts to subside.
  - Heat Rates have remained relatively unchanged and stable.
- **Cal ISO's chief economist stated that plant retirements will outpace in-state generation additions starting in 2006.**
  - California's load has grown on average 1000 MW annually during the last four years, and the state has been able to keep pace with new plant additions. However, with the retirement of the 1,500 MW Mohave coal plant, which sold the majority of its output to California, the state is losing ground on the supplying demand.
- Southern California Edison reached an agreement with its major renewable energy providers, including wind, solar, biomass, geothermal and small hydro to purchase power at a fixed price for the next five years at a cost of \$61.50/MWh, with a 1% annual escalation.

### GLOBAL ENERGY TRENDS

- **Crude oil prices are falling due to an easing of immediate geopolitical risks, and supply & demand fundamentals.**
  - Iran continued to defy the West, but the UN Security Council is divided on what to do about it. No definitive action is expected anytime soon.
  - China refined 7% more crude oil last month than a year ago, and there is talk that China is considering making its currency more market sensitive, which could slow the country's manufacturing.
  - Saudi Arabia says it is "quadrupling" exploration activities to boost its oil reserves by 25% by 2025.
- **Investors are liquidating long commodity positions, not just energy, but others as well.**
  - Gold is down ~ \$35/ounce in the last week
  - Copper prices are down ~ 8% in the last week.

### REGIONAL INFRASTRUCTURE

- The Northwest Power and Conservation Council adopted a resource adequacy standard last week that will serve as "a gauge used to assess whether the Northwest power supply is adequate in a physical sense, that is, in terms of 'keeping the lights on.'" The new standard also is intended for incorporation by the Western Electricity Coordinating Council in its congressionally-mandated development of resource adequacy. This action is the first region-wide standard for resource adequacy. Had such a mechanism existed in the 1990s, the region would have seen indications of the 2000-2001 energy crisis, according to the NWPCC.

### MISCELLANEOUS

- US crude oil inventories are 5% higher than last year, and crude oil imports are on the rise.
- Gasoline inventories showed a build last week, the third in a row, and the US imported near record quantities of gasoline last week. **Fears of "driving season" shortages are diminishing and gasoline prices are at their lowest level in more than a month.**
- The Consumer Price Index (CPI) rose by 0.6% in April. Annual core inflation is around 2.3%, a bit above the Fed's comfort zone, meaning that future rate increases are very likely. **(The Dow is suffering...)**

## WHOLESALE ENERGY MARKET EXECUTIVE REPORT

July 24, 2006



### NORTH AMERICAN MARKET OVERVIEW

- **Overall, energy markets are very strong, with the exception of natural gas...**
  - Crude oil made new record highs last week, trading above \$78/barrel on Middle Eastern unrest.
  - Gasoline & Distillates is also trading up with crude oil. **Average US retail price of a gallon of gasoline topped \$3.00 last week, the highest price in 25 years.**
  - Spot power prices, particularly in the West, have been rising steadily, but are much higher the last few days.
  - Natural gas prices on the NYMEX have averaged below \$6/Dth during the last few weeks.
- **The first six months of 2006 were the warmest, on average, since the United States started keeping records in 1895!** (Global warming is a contributing factor according to an U.S. climate expert).
- **Net power generation in May was up 5.1% vs last year**, as the month was significantly warmer than May 2005.
- **For May**, coal-fired power generation was up 1.9% vs. last year, hydroelectric power generation rose 12.6%, and natural gas-fired generation grew 21.4%, reflecting substitution of residual fuel oil. **Generation from petroleum liquids fell 42.3%.**
- The US electric power sector has rebuilt coal stocks to a surplus of 11% vs. last year.
- Yesterday's EIA storage inventory number was an injection of 59 Bcf.
  - **National storage levels are now at 2,763 Bcf. This is the amount of gas we had in the ground to start the 2000/01 winter season!** (We are 427 Bcf higher than last year and 562 Bcf above the 5-yr average).
  - We continue to have the highest storage inventories on record for this time of the year both nationally and the West.

### WESTERN MARKET SNAPSHOT

- Spot power markets have spiked across the West Coast with record hot weather, and numerous base load power plants operating at less than full capacity.
  - California has had record electric demand with hourly demand reaching into the 47,000 MW range.
  - Burbank CA was 112 degrees over the weekend, and **the CAL ISO is projecting peak hourly loads today above 52,000 MW. (This may force some load shedding measures in California).**
  - **In certain hours, power has traded near the \$400/MWh FERC price cap in California & Mid-C.**
- With spot natural gas prices remaining fairly stable, spot heat rates have exploded. **Today's flat market heat rate is 26!**
- The heat wave is expected to break in the next couple of days, so forward prices & heat rates have not moved up proportionately with spot prices, but they are increasing. August On-peak Mid-C power prices are \$76/MWh and Peak Heat Rates are 13.
- We may see a very rare gas storage withdrawal figure for the West on Thursday due to the hot weather and storage operators forcing interruptible storage holders to withdraw their inventories to make room for firm shippers.

### GLOBAL ENERGY TRENDS

- **Geo-Political Risk has manifested itself in the Middle East, as the Israeli / Palestinian / Hezbollah / Lebanese conflict continues to simmer.**
  - After the initial crude oil price spike, the market has settled down a little bit again, as the conflict appears to be largely contained, and currently does not threaten crude oil production or transportation routes.
  - U.S. Secretary of State Condoleezza Rice arrived in the Middle East today. She will attempt to broker a cease-fire agreement between Hezbollah and Israel
- OPEC President said last week that the latest spike in oil prices is "very uncomfortable" and it is having a negative impact on the world economy. OPEC says it has 2 million barrels/day of spare production capacity if there are supply disruptions.
- **China announced second-quarter economic growth of 11.3 percent, the fastest pace in more than a decade.**
- China may use 5.5% more crude oil in 2007 than this year, after an estimated increase of 6.1% this year vs. last year.

### REGIONAL INFRASTRUCTURE

- The CA PUC ordered PG&E and So Cal Edison to sign electric capacity contracts of 3700 MW for at least 5 years. This is the first time **utilities have been ordered to invest in new power plant construction of merchant generators.**
- PG&E has been authorized to spend \$1.6 billion over the next 5 years to install 9 million "smart meters". This will give customers great information and control of their energy use and costs, since PG&E will offer time of use billing.
- The GTN (PG&E) natural gas pipeline which runs from Alberta to CA has requested a 70% shipper rate increase.

### MISCELLANEOUS

- A potential natural gas contract between the State of Alaska and BP, ExxonMobil & ConocoPhillips that would move plans to build the Alaska pipeline forward appear "dead in the water" according to an energy executive. The Alaska Legislator is already in its second "special session" on the matter with no consensus
- LNG imports continue to limp along. During the last couple of weeks, we have been importing on average 1.6 Bcf/day.