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Gas Price Fundamentals

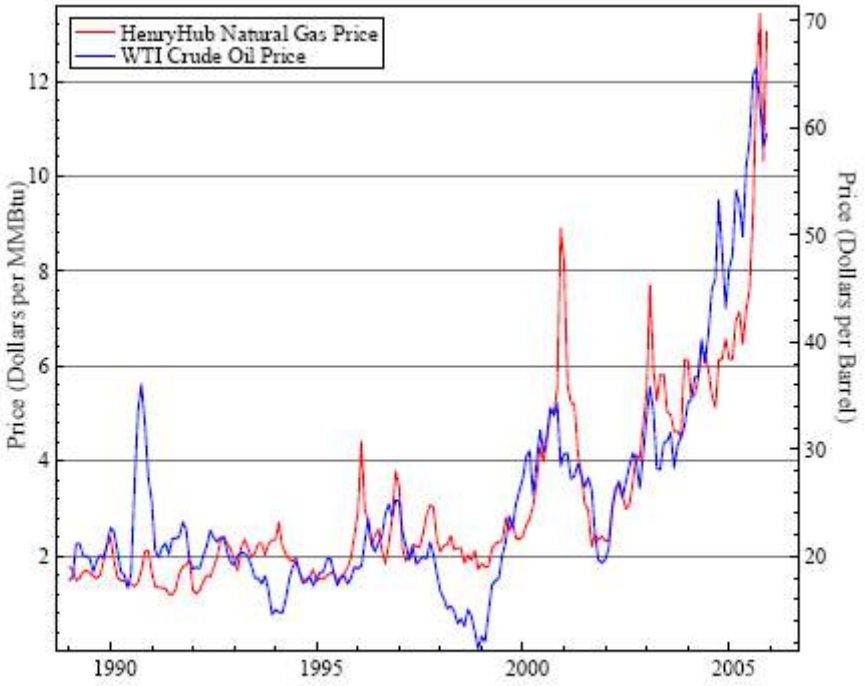
October 2008

Contents

- Overview of Typical Gas Price Drivers
- Application of Price Drivers in South Africa
- The potential impact of Regulation

Linking Oil and Gas Prices

Long and medium term natural gas prices are typically indexed to the price of crude oil – a structural link exists



Source: Energy Information Administration, *Short-Term Energy Outlook*, various issues.

- None of the local gas hubs provide sufficient scale, liquidity or relative price stability to provide a viable alternative to oil indexing for long term gas contracts

- Natural gas competes indirectly with crude oil in the end-user energy markets, through oil derived products used as alternative energy sources
- Strong statistical correlation between oil and gas prices, due to:
  - Common risk and return expectation of capital markets or energy investors
  - Competition for upstream production assets, skills and services
  - Similar effect of economic conditions on both oil and gas prices
  - Relative availability of refining capacity
  - Investment in alternative monetisation options (e.g. GTL)
  - Increasing influence of the global LNG market

Other Gas Price Drivers

Short term market forces can cause partial de-coupling of oil and gas prices

- Energy substitution in the power and industrial sectors
  - Significant availability of dual-fired power generation and manufacturing capacity allows rapid fuel switching in response to price volatility
  - Many swing and peak load management power generators are gas-fired
- Geopolitical shocks
  - Major inter-continental gas infrastructure is located in areas of significant political instability
  - Most oil-related geopolitical shocks temporarily manifest in the gas markets
- Severe weather
  - Well head freeze-offs and hurricanes can cause short term supply constraints
  - Unusually cold periods significantly increase domestic heating demand
- Market sentiment
  - Recent spikes in commodity prices has initiated the use of energy derivatives as a speculative investment opportunity
  - Investor perceptions regarding supply/demand fundamentals create volatility

Infrastructure Capacity Impacts

The availability of infrastructure capacity has significant implications for pricing

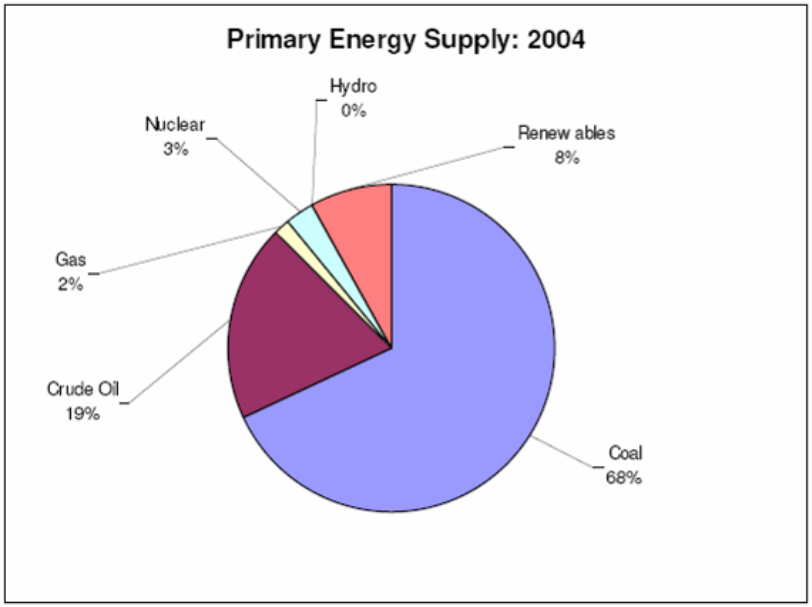
- Transportation contract strategies for firm and interruptible supply influences availability
- The availability of liquefaction, re-gasification and transportation infrastructure will become increasingly important as higher LNG volumes create a global gas market

- Prices for pipeline and storage capacity is very sensitive to utilisation factors
  - Below 60% utilisation, only short-run marginal costs are typically recovered
  - Between 60% and 85%, long-run marginal costs are recovered
  - Above 85%, a scarcity premium is recovered
- Pipeline and storage facilities are limited and subject to potential capacity limitations such as:
  - Planned and unplanned maintenance
  - Severe weather
  - Pipeline rupture or outages
  - Ambient temperature impact of pipeline capacity
  - Suboptimal operational performance

The South African Gas Market

The South African Piped Gas market is small by global standards, and dependent on a small number of suppliers

Market Size



Sasol reported 112.9 million GJ sold in FY 2007

Major Suppliers

Egoli gas

sasol
reaching new frontiers

SPRING LIGHTS GAS
your future in clean energy

TRANSNET
pipelines

Egoli Gas ~1200km pipeline

Sasol & Spring Lights ~ 2000 km pipeline

Existing Pricing Approach

The approach to pricing gas in South Africa is largely influenced by the role of gas in a coal-dominated primary energy market

South African Market Characteristics

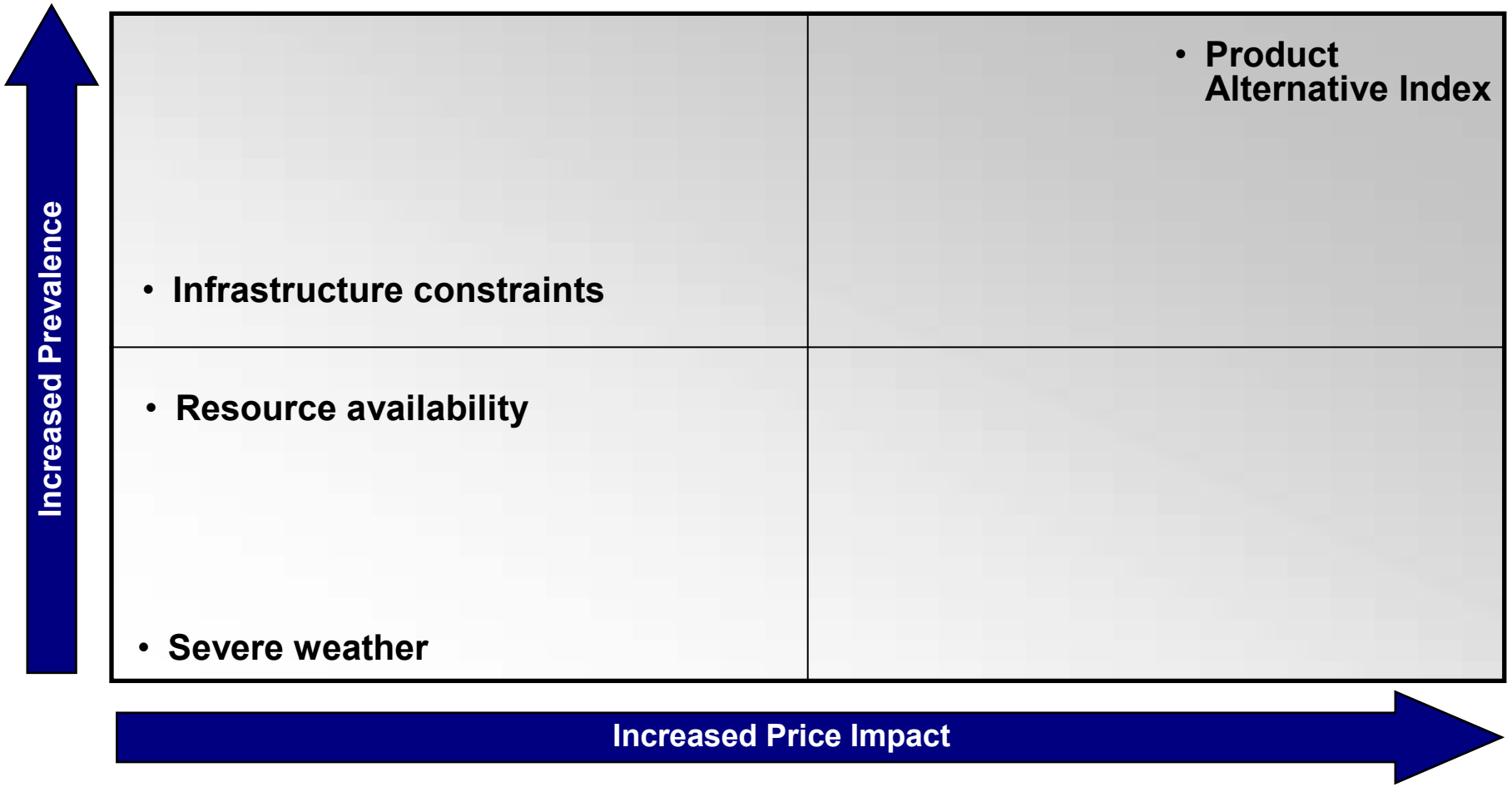
- Gas provides for a small percentage (~3½%) of total South African energy consumption
- Natural gas reserves are relatively scarce in and around South Africa, and are generally remote and expensive to reach
- Coal is cheap and abundant
- Significant capital investments are required to create and sustain gas infrastructure – barriers to entry are significant
- Eskom's past investment strategy has embedded access to cheap electricity in the social and economic planning systems
- Government policy, relative gas market size and scarcity of gas reserves make it unlikely that a fully liberalised, competitive market will evolve in the medium term

Pricing Practices

- Most locally sold gas is priced relative to the cost of the alternative
- Alternatives include:
  - Coal
  - Electricity
  - HFO
  - LPG, IP
- Prices are increased based on product relevant indexes
- Transportation tariffs are not explicitly charged
- New customers are evaluated on a individual viability basis
- Various global price drivers are relevant to local pricing

Local Alignment

The typical gas price drivers manifest to varying extent in the South African piped gas market



Observations

South Africa Gas pricing practices are partly aligned to internal pricing practices

1. **Alternative product indexing is consistent with international gas pricing practice; and**
2. **The bundled tariff (once calculated) used for gas sales is easy to interpret and compare on a energy equivalence basis**

but..

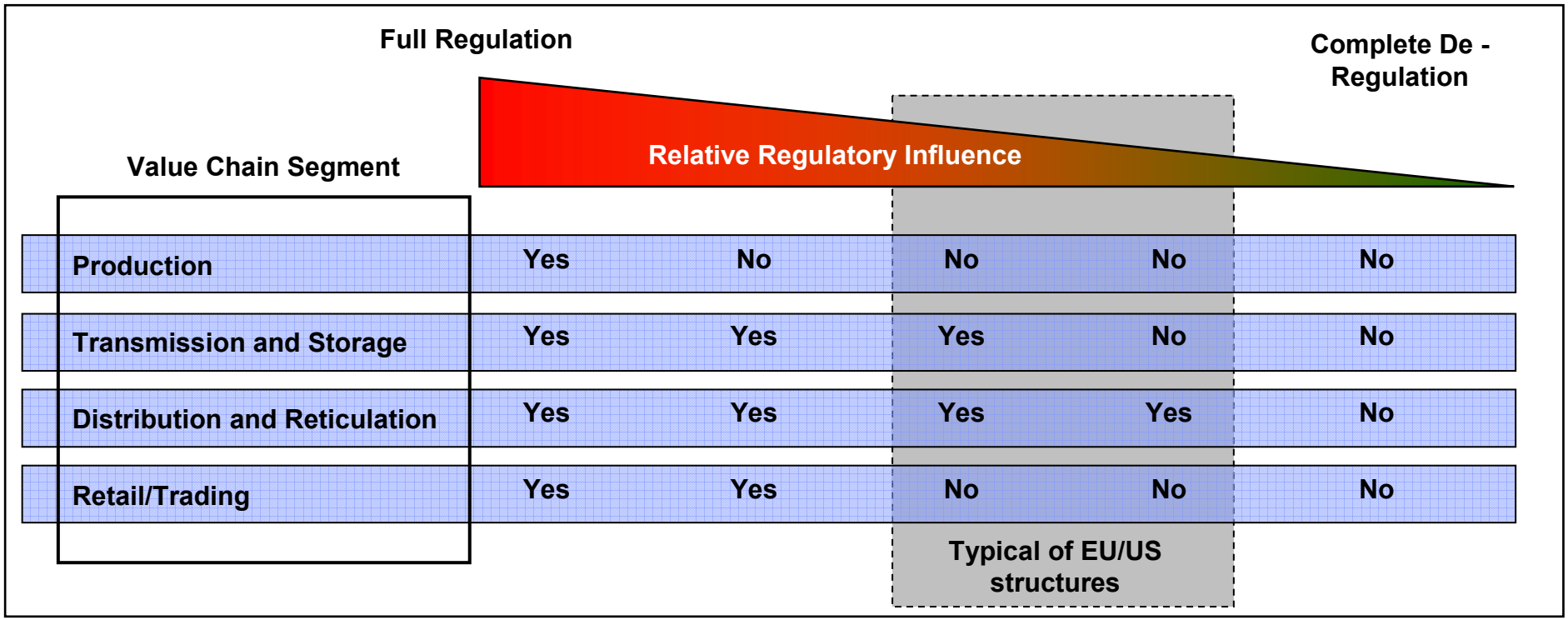
3. **The application of the bundled tariff depends on a variety of relatively complex assumptions and indices – compliance with regulations can be tricky to verify**
4. **Transportation tariffs are not transparent – no indication of asset efficiency is given**
5. **Obvious disconnect between cost and price for individual customers – inherent potential for subsidisation**
6. **Bundled tariffs are difficult to benchmark against international practice**

Economic Regulation of Piped Gas

Most global gas markets are at least partly regulated, with the form of control determined by the size of the market and public policy

Some elements of Rationale for Economic Regulation:

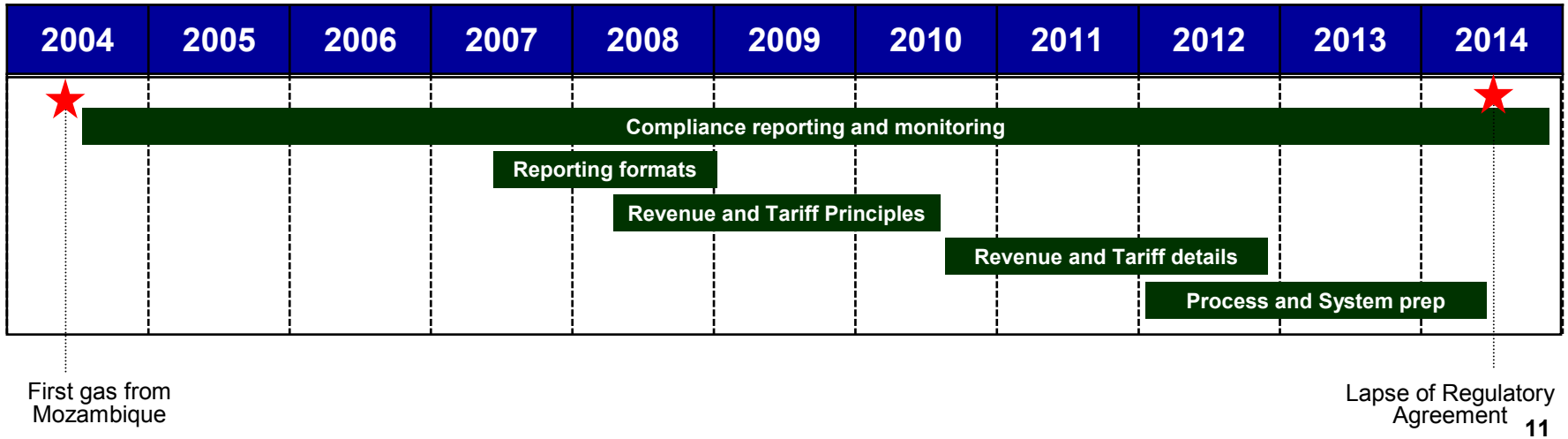
- **To ensure orderly, efficient development of asset intensive industries**
- **To prevent monopoly suppliers abusing market power**
- **To prevent unfair pricing practices where customers do not have negotiation powers e.g. domestic consumers**



Regulatory Transition

The economic regulation of the piped gas industry in South Africa is entering a period of transition and flux

1. Majority of current gas sales are subject to the Regulatory Agreement
2. Regulatory Agreement describes the Market Value Pricing Methodology and is due to lapse circa 2014
3. Gas Act prescribes rights and obligations related to gas value chain activities
4. Work on the development of new regulatory controls has been initiated. Consultation has commenced on regulatory reporting and new tariff framework
5. A structured programme is required to develop future regulatory controls



Potential Changes

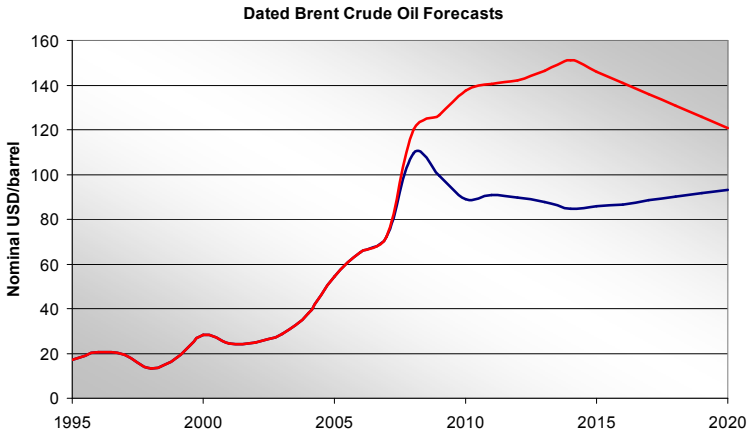
Future regulations and tariff structures are likely to contain significant changes from the current environment

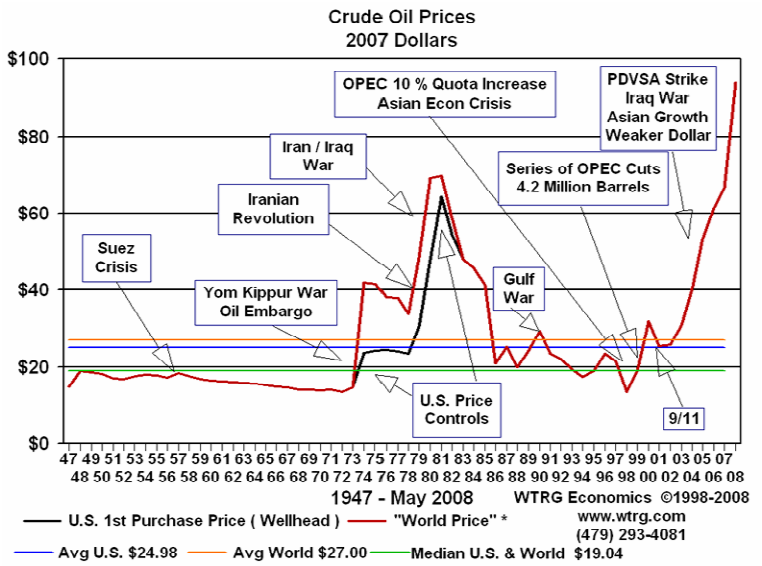
Available documentation and international and local precedent indicate that new tariffs could:

- Add significant structure to industry pricing
- Retain oil price links in bulk purchase contracts which, will be passed to consumers
- Explicitly separate transmission, distribution, storage and trading components
- Trend towards cost reflectivity with reasonable returns for each value chain component
- Require efficient use of capital
- Incentivise investment in new infrastructure for both suppliers and customers
- Be benchmarked against global standards
- Focus on cost efficiency

Summary

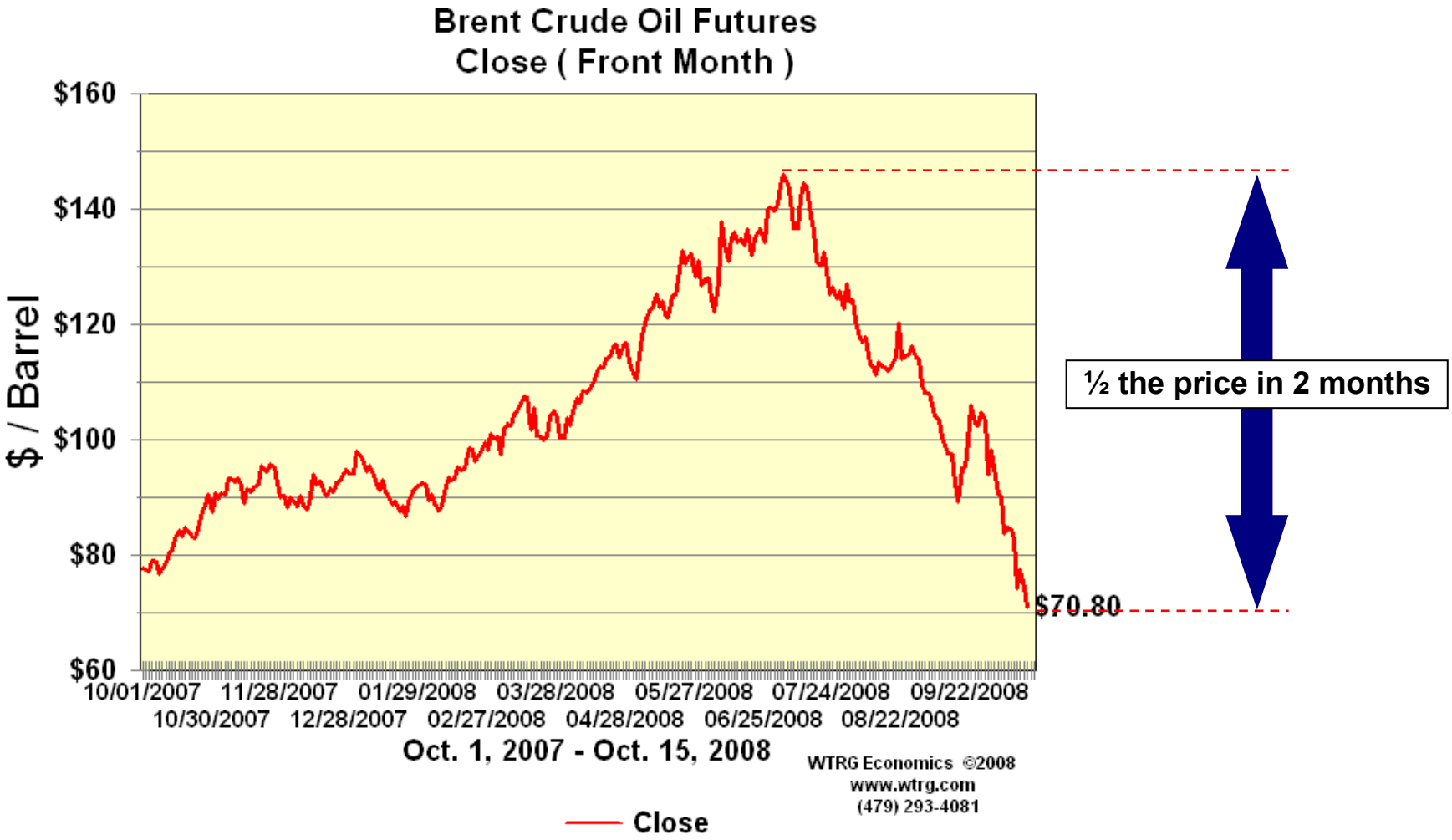
What do the market trends and regulatory changes imply for future gas prices?





- Forecasts vary – but market fundamentals and potential for geopolitical instability indicate real energy prices are likely to remain higher than historical levels
- Transportation, storage and trading tariff components will likely become:
  - More transparent and easier to interpret
  - Predictable and more stable
  - Reflective of the underlying cost drivers
- Future domestic price risks include:
  - Addition of significant future pipeline infrastructure
  - Development of new gas sources for extension or expansion of gas supply
  - Impacts on capital costs or infrastructure expansion due to regulatory risk

So what of the Future?



Questions?