



# Asian electricity price drivers and trends

Presentation at the 19<sup>th</sup> World Chlor-alkali Conference, Hong Kong

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THE LANTAU GROUP  
strategy & economic consulting

# The Bad News

## Rising Costs are Real

- Shift to market-priced fuels throughout Asia
  - Depleting local supplies
  - Increased reliance on imports
  - Exposure to global markets increasing!
- Environmental costs rising
- Reduced appetite for subsidies, particularly Vietnam, Indonesia and Malaysia
- Yet protection for domestic customers

## Impacts

- Tariffs have increased sharply in many countries during 2014/2013, and some in 2015 despite low fuel prices
- Most of the bigger increases have been achieved, but some further adjustments are likely
- Protection of domestic customers at expense of larger customers continues throughout Asia
- Demand response and energy efficiency are becoming more important as costs increase
- Increased power sector exposure to global fuel markets means more frequent tariff adjustments

# The Good News

## Gas prices more likely to stay about the same than to increase

- More gas supplies for the region
  - Russia
  - Australia
  - USA
- Gas demand growth under control?
  - Japan's nuclear restart?
  - Malaysia shift to coal (example)
  - China slowing growth
  - Renewables uptake growing
- Oil forward curve?
  - Prices likely to stay in the band of \$65-\$100/bbl, and closer to be bottom of the band in the short term.

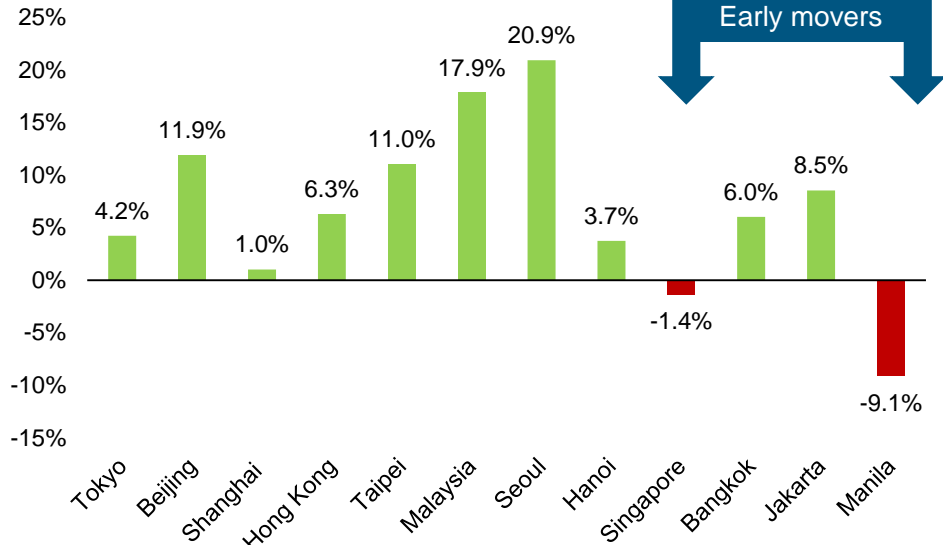
## Coal prices more likely to stay about the same than to increase

- Ample supply
- New seaborne coal sources from USA
- Slower growth in China
- Industry shake out mostly hits smaller, inefficient mines, relatively few of which are for power generation

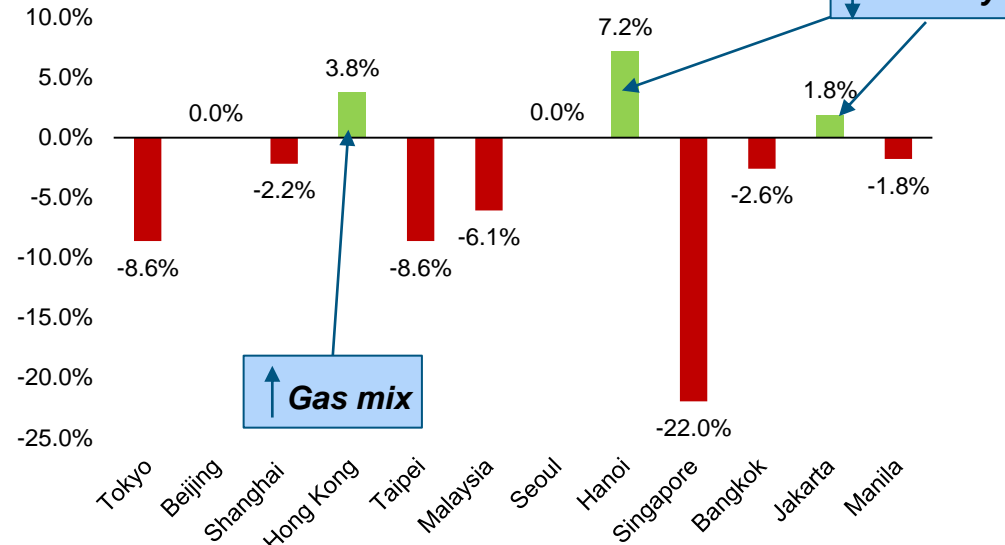
# What a difference a year (or so) makes

## Tariff Changes (Industrial Customers)

### 2014 over 2013



### 2015 over 2014



Apr 2013,  
PLN, Indonesia  
Quarterly adj. in 2014

Oct 2013 Phase 2  
Taipower, Taiwan

Apr 2014  
Chubu, Japan

Jan 2015  
Hong Kong

Apr 2015  
China  
Taipower, Taiwan

Jan 2013  
Kepco, S. Korea  
PLN, Indonesia

May 2013  
Kansai, Japan

Nov 2013  
Korea

Jan 2014, China  
(BJ, TJ, SH and  
HK) and Malaysia

Jul 2014  
EVN, Vietnam

Mar 2015  
TNB, Malaysia  
EVN, Vietnam

Jun 2015  
PLN, Indonesia  
Monthly adj.  
since 2015

# Most tariff reductions linked to fuel markets

### Newcastle coal price FOB, USD per metric ton



## China cuts power price to benefit enterprises

BEIJING, April 8 (Xinhua) -- China will lower prices of coal-fired power and power consumption for industrial and commercial purposes to reduce business costs, the State Council said Wednesday.

February 20, 2015 5:47 am JST

Cheaper fuel paying off

## Japanese power companies to cut residential rates

TOKYO -- Eight major Japanese utilities will reduce household electricity rates in April, reflecting lower fuel procurement costs.

## Taipower to cut electricity price 7.34% on average

**TRICKLE-DOWN EFFECT:** Falling costs of production due to falling global crude prices are to be passed on to consumers, but the annual summer price hike will still take place

By Laily Li / Staff reporter

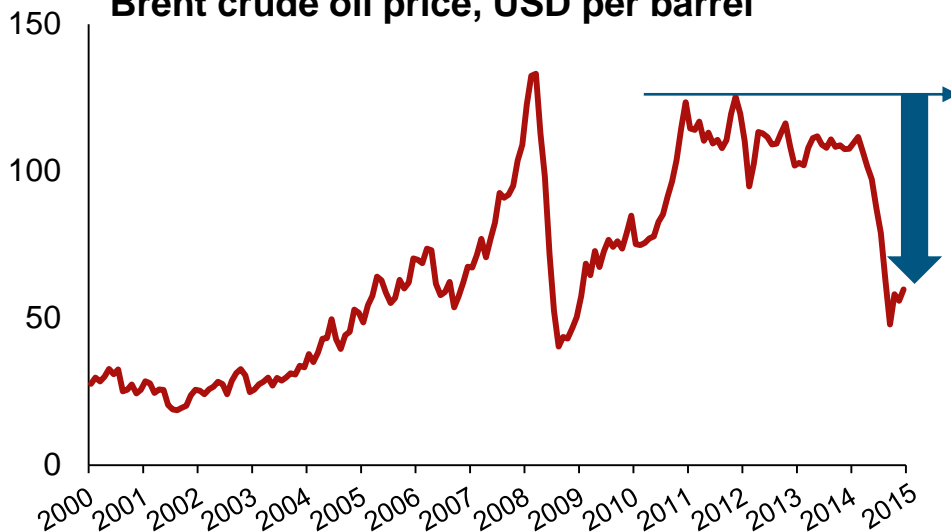
Sat, Mar 21, 2015 - Page 13

## Malaysia unveils cuts to electricity tariffs until 30 June

Mentioning lower electricity generation costs from coal.

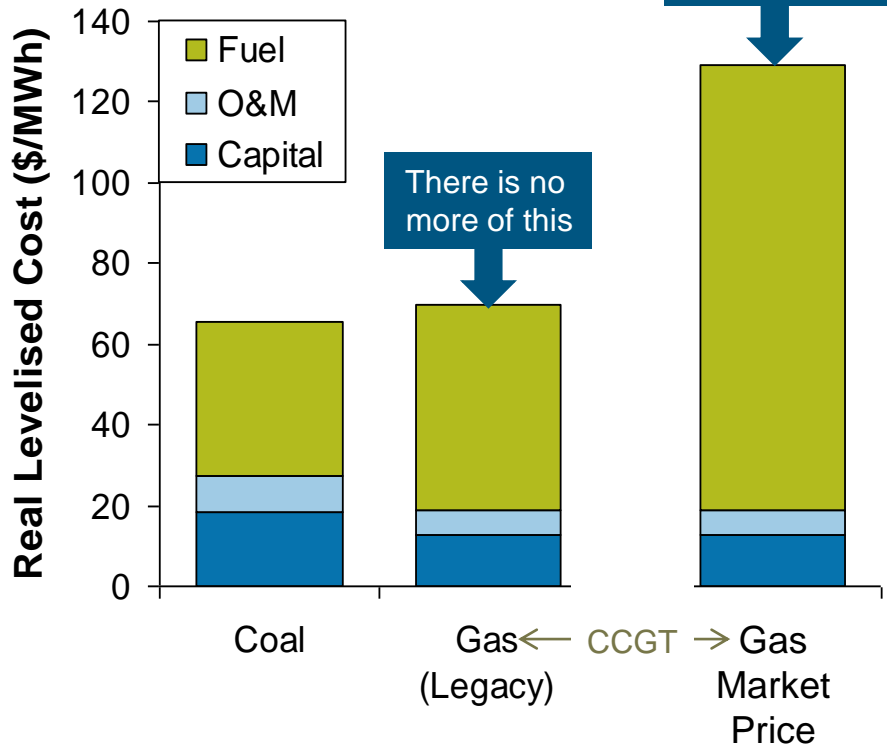
Malaysia's Minister of Energy, Green Technology and Water was recently quoted on Bloomberg announcing cuts to electricity tariffs effective 1 March to 30 June, citing lower electricity generation costs from coal.

### Brent crude oil price, USD per barrel



# Tariff increases relate to *starting point recalibration* and *fuel mix changes*

Big changes in gas pricing regimes across countries



## Vietnam to hike electricity prices by 7.5% on March 16

The price of electricity in Vietnam will go up by 7.5 percent on March 16 at the suggestion of the state-run Vietnam Electricity (EVN), a source from the office of the central government said Thursday.

## CLP plans 3.1% tariff hike, HK Electric to freeze rates

Despite falling crude oil prices, Hong Kong's biggest power supplier plans to raise electricity rates by 3.1 percent in 2015.

## Smaller rise in power rates next year, says CLP

Cheung Chi-fai

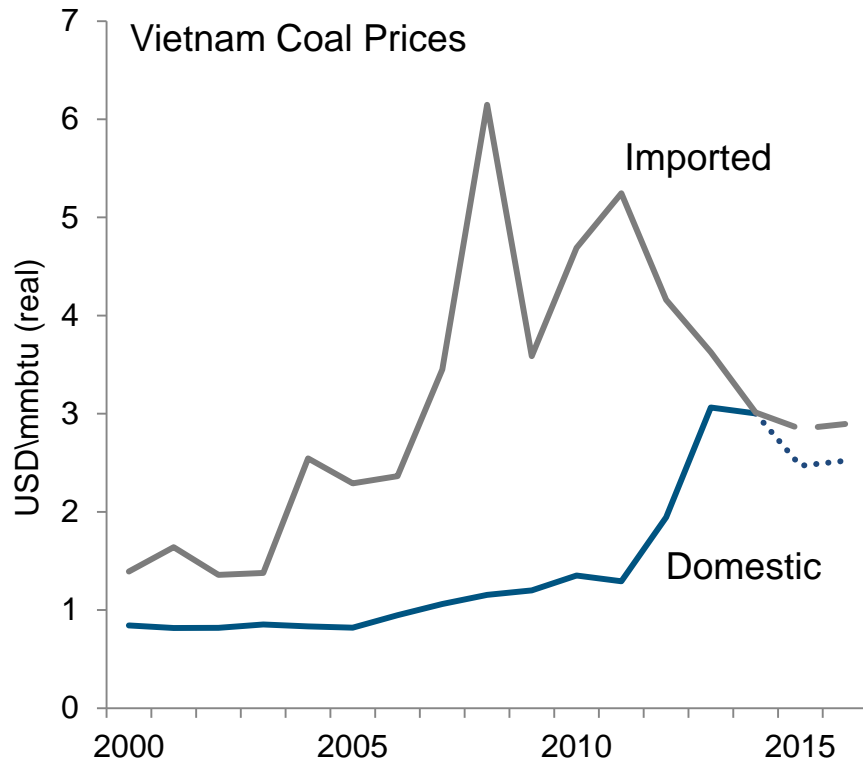
PUBLISHED : Friday, 15 August, 2014, 4:06am

Any gentler increase in charges would be because of what the electricity supplier said was a "notable drop" in international coal prices and a series of measures that primarily reduced the use of more expensive natural gas to generate power.

## With polls over, Rajasthan government now hikes power tariff

Source: TLG analysis

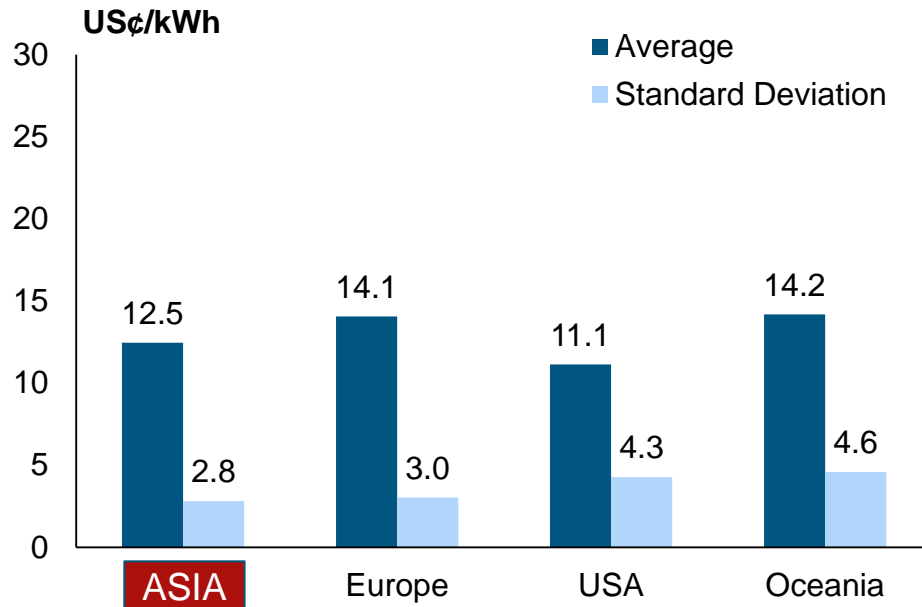
# Vietnam, domestic coal prices have been rising up to finally “meet” international prices



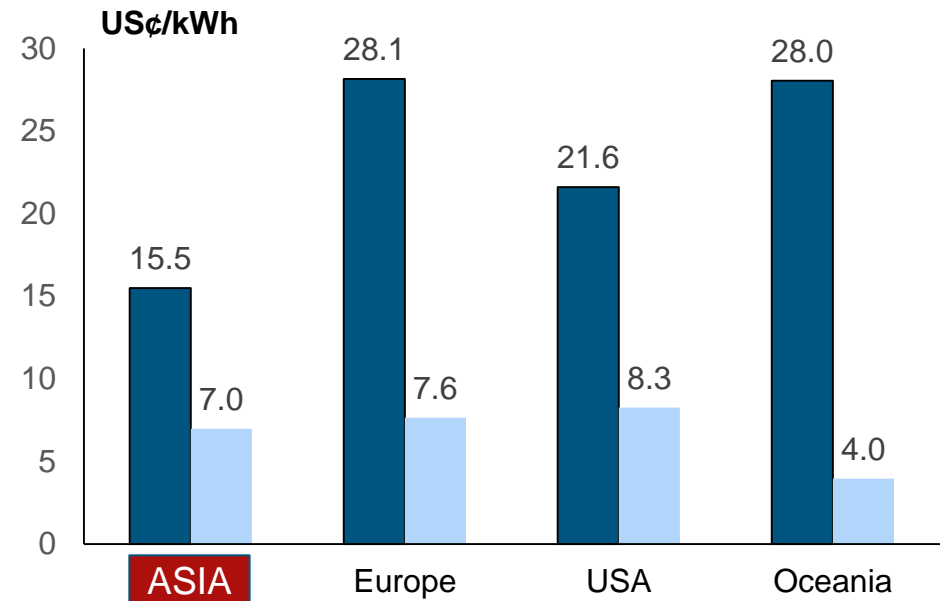
- Recent reform of domestic coal prices has led to a the rise in the domestic coal price to the power sector since 2011.
- The authorities have struggled for a long time to get domestic coal prices to the power sector raised to a level that makes domestic sales viable for Vinacomin. Having achieved this target it is unlikely that the authorities will back track.
- It is expected that the domestic coal price in energy equivalent terms is likely to track that of Newcastle FOB coal in energy equivalent terms.
- Therefore it is expected that imported coal will be at a slight premium as the shipping/transport costs are greater than for domestic coal.
- There will be some slight regional differences in the domestic coal price especially in the south to accommodate barging, port charges and offloading charges.

# Asian “advantage” disappearing?

## Industrial electricity prices



## Residential electricity prices



Source: TLG

Note:

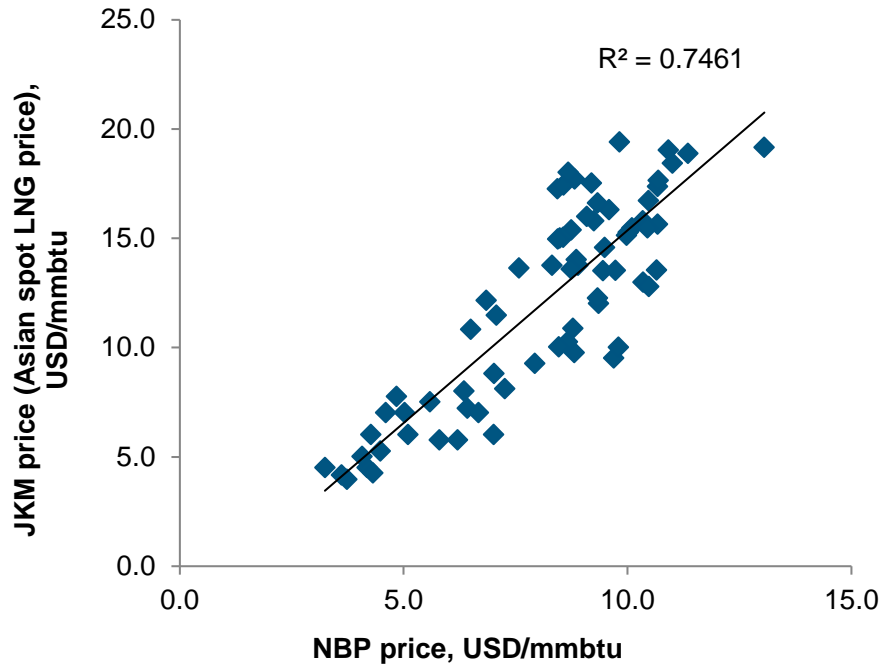
- Data compiled for late 2014
- Assumed typical industrial customer is connected at tension level greater than 1kV and less than 66kV, consumes 2,187,840kWh per month, with contract demand of 3000kW
- Assumed typical residential customer consumes 400kWh per month.



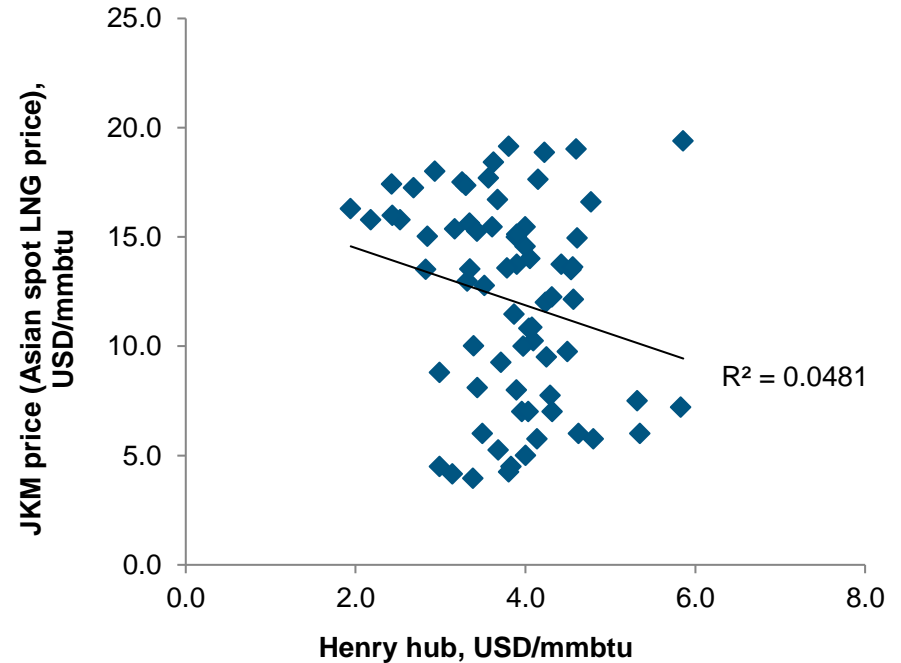
# The beginnings of global gas markets → expect more volatility

We are already in a global gas market – just waiting for the US to join....

Asian spot LNG price is correlated with UK gas price,

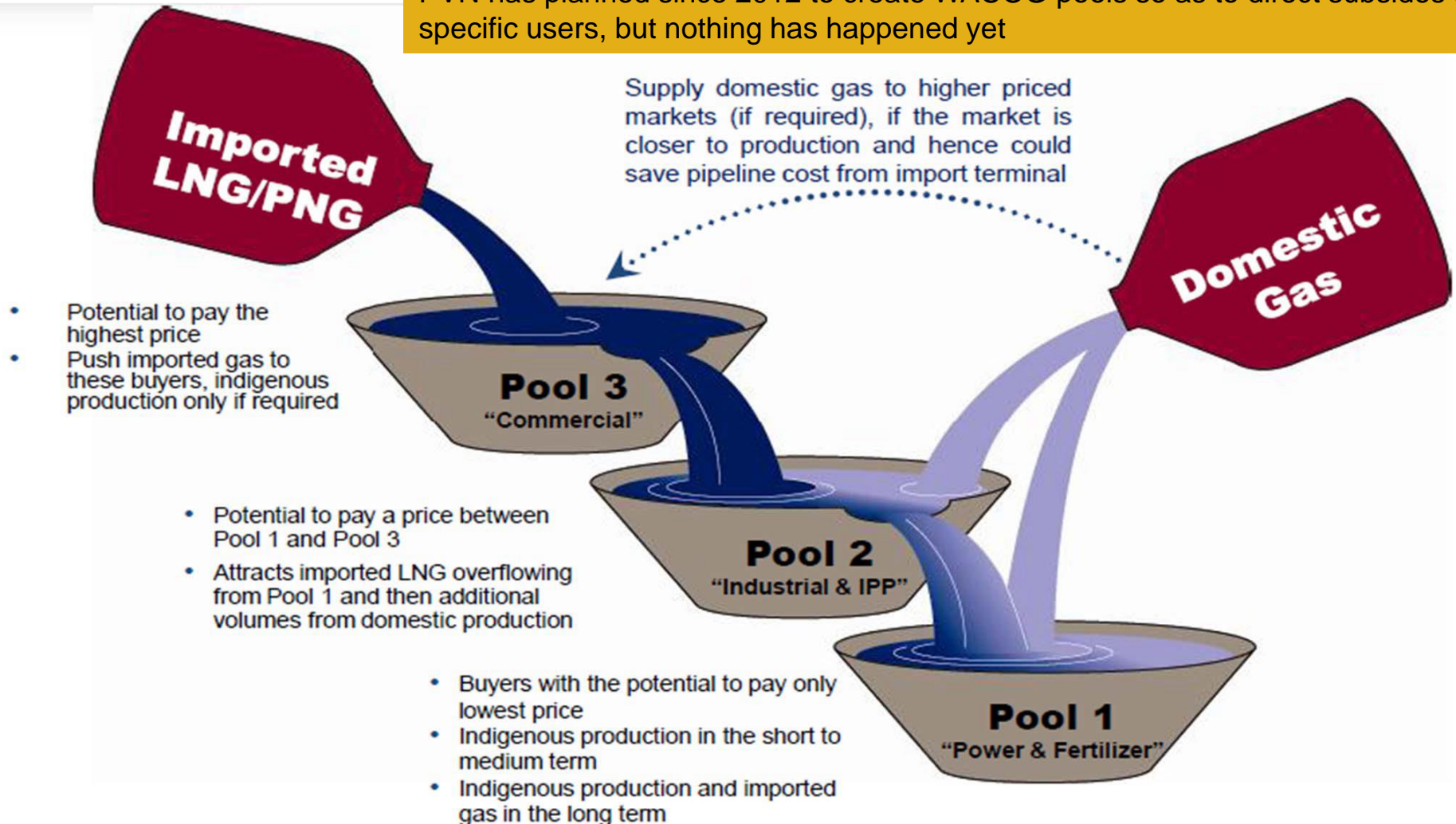


but not the US gas price



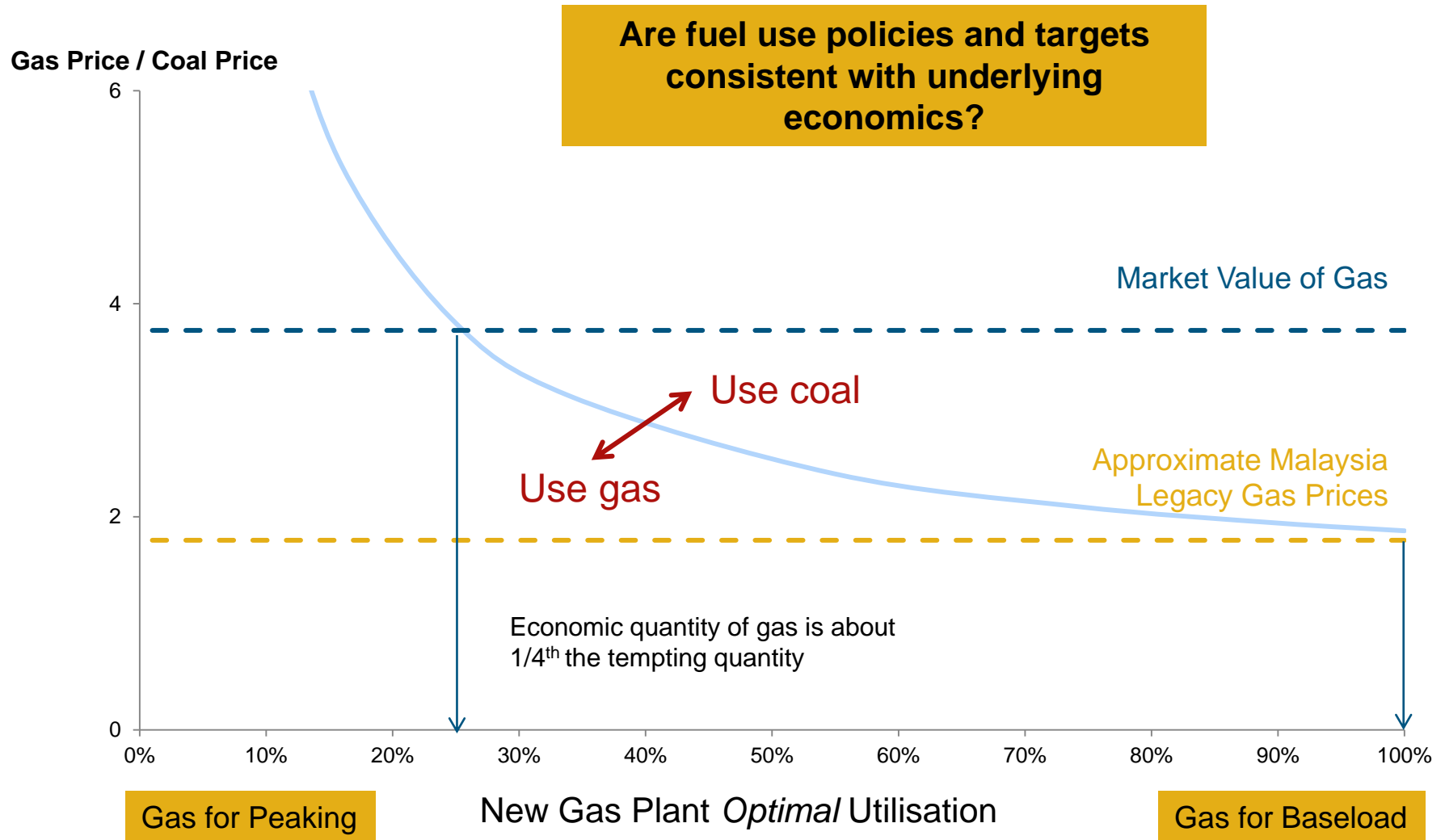
# Managing the transition from domestic gas pricing to imported gas pricing is one of the more challenging factors facing historically large gas-using countries

PVN has planned since 2012 to create WACOG pools so as to direct subsidies to specific users, but nothing has happened yet

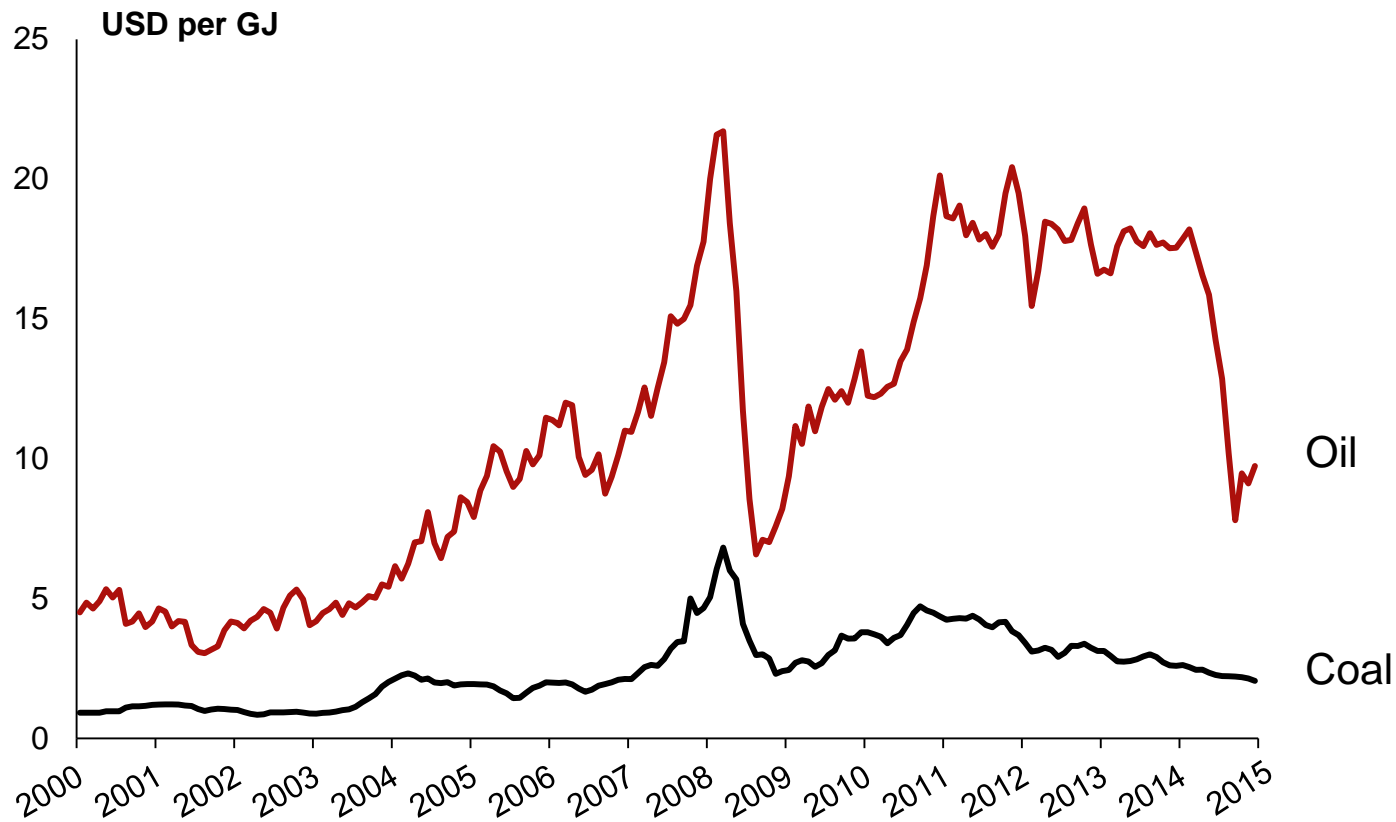


Source: PetroVietnam Gas, *Challenges for Balancing Gas Supply and Demand*, 4 July 2012

Focus on each country's fuel mix → pay attention to economics rather than policy drivers of fuel mix



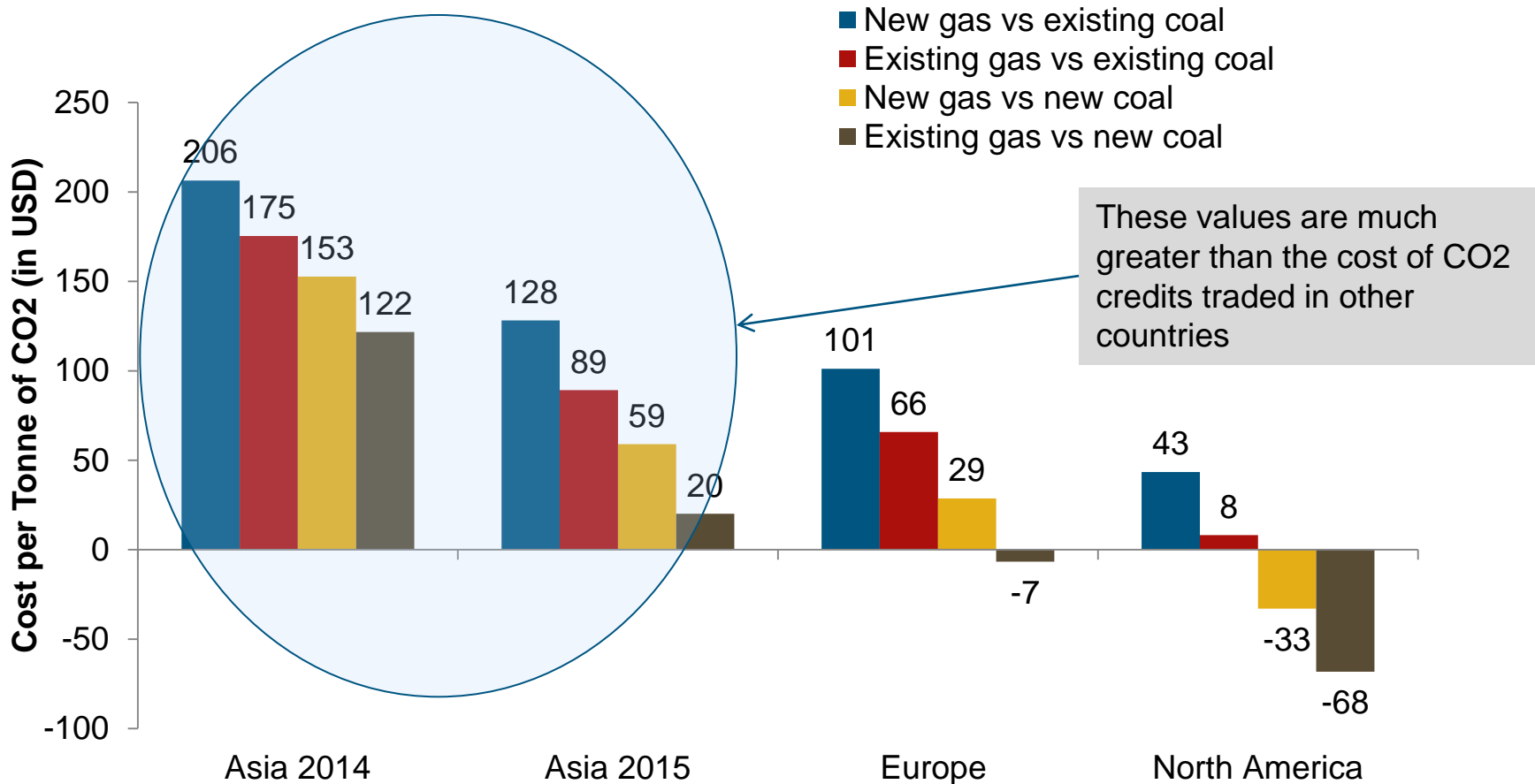
## Coal prices have been less volatile



Note: Oil price is referenced to dated Brent Crude, coal price is referenced to the Newcastle FOB coal price

The margin between coal and oil remains relatively high (compared to the “age of gas” pre-2005)

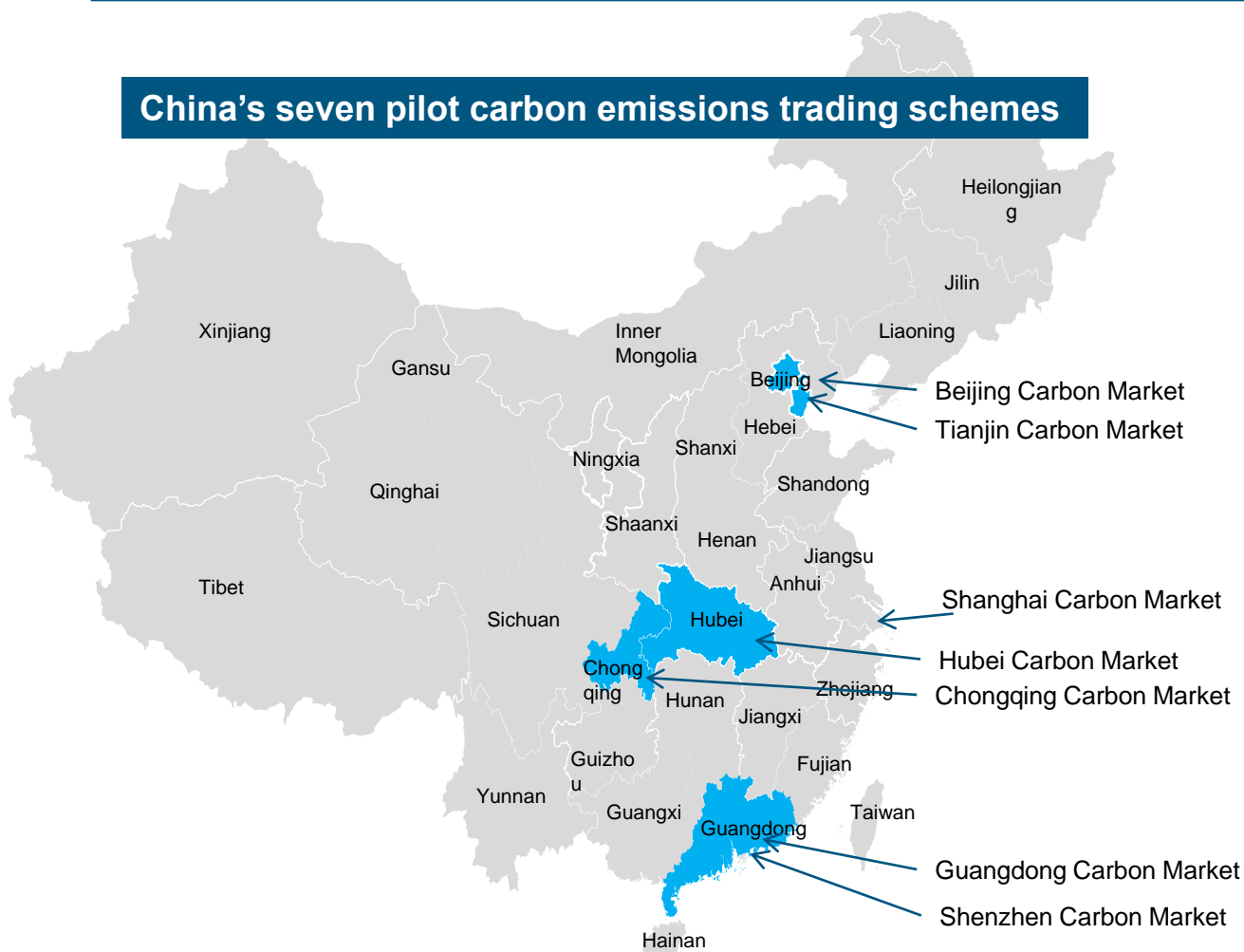
# Small carbon prices will do little to shift the fuel mix in Asia



For Asia to stay competitive on electricity pricing – a new approach is needed

# China's new carbon trading schemes introduce a new area of uncertainty

## China's seven pilot carbon emissions trading schemes



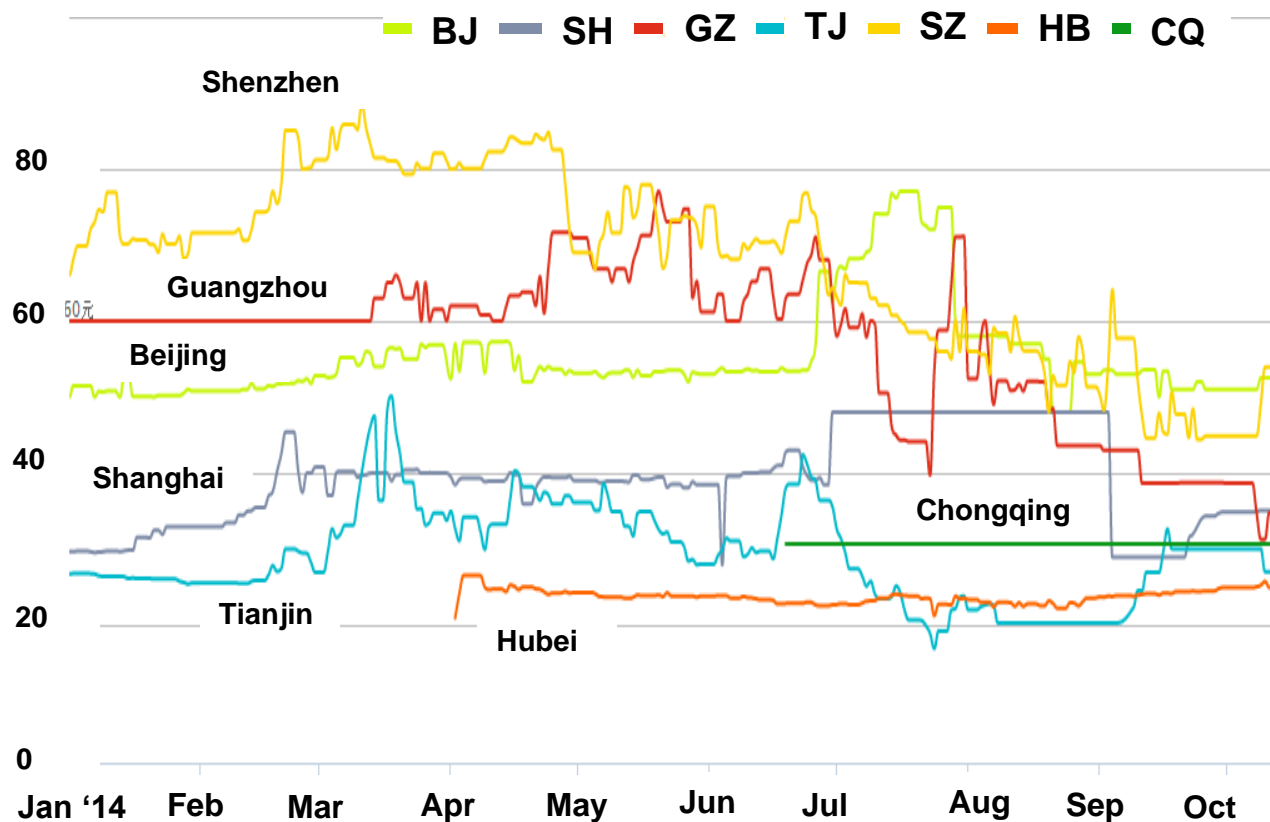
China pledged to reduce carbon dioxide intensity per GDP by 40%-45% by 2020 comparing with 2005 level

- China is trying a combination of market based approach and administrative control approach to reduce carbon dioxide emissions..
- Seven pilot carbon trading schemes started operation by 2014
- A national carbon scheme was proposed by 2016 but this is unlikely to be implemented on time as scheduled.
- Currently, different carbon markets have different allowance allocation approaches. Some of them allocate initial allowances for free; others impose small fees

However, these schemes have had only a small impact on costs to date -- more than offset by weakening coal prices

The planned nationwide carbon market in 2016 will likely be delayed, and even with a carbon market, the carbon prices would be likely low

Carbon price, yuan/tonne-CO<sub>2</sub>



Currently running around US\$ 4 to 9 per tonne of CO<sub>2</sub>

# The Asian energy world is becoming ever more complicated

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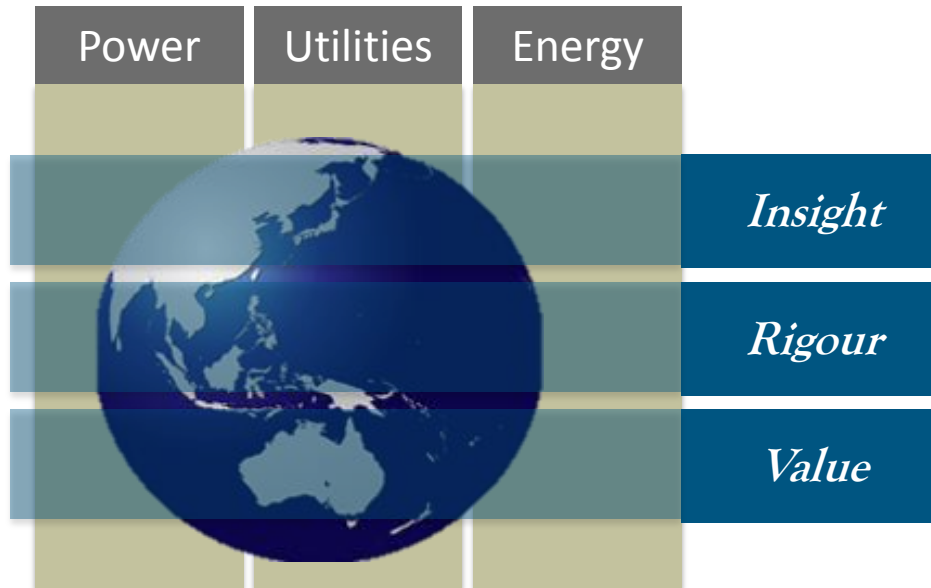
- **Volatility pressures**
  - Market priced rather than administered fuel prices
- **Upward cost pressures**
  - Fuel mix shifts from coal to gas
  - Subsidy reductions
  - Supply tightening in merchant markets
  - Supply loosening in regulated markets
  - Network enhancement and policy factors
  - Environmental challenges
- **Downward cost pressures**
  - Primary fuel price decreases
  - Supply loosening in merchant markets
  - Supply tightening in regulated markets

The issues are not going to get simpler in the future...





# Thank You



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