

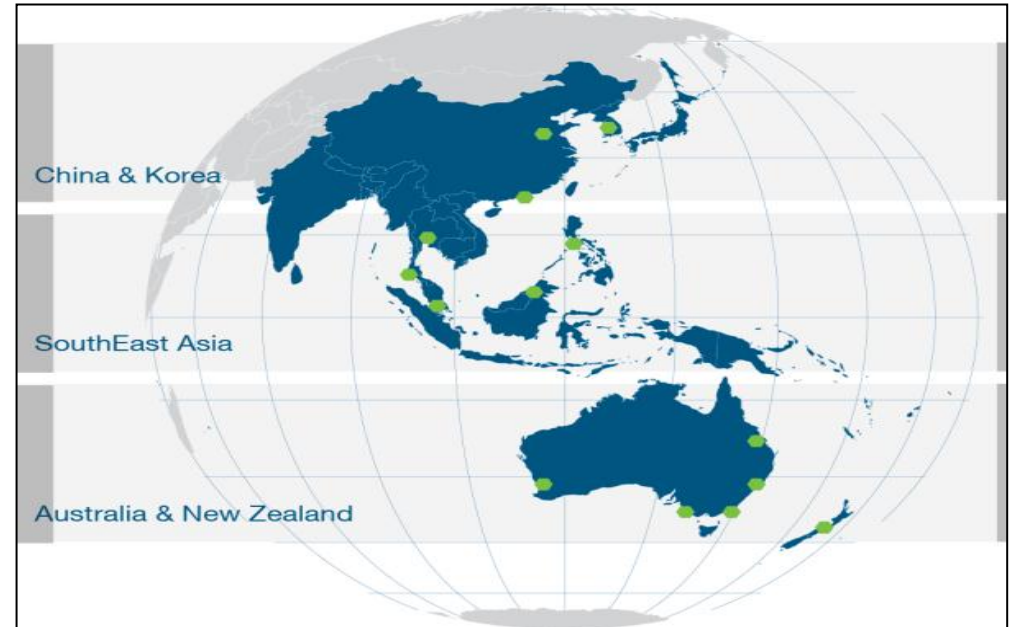


Updates on the Regional Electricity Landscape & Challenges, & Potential for Greater Connectivity to Singapore & the Region

Sarah Fairhurst
23 October 2012

Landscape: The Big Picture

- Asia is diverse, economically, culturally, politically and geographically
 - Developing to developed
 - Islanded to interconnected
 - Coal to Gas to Hydro to Mix
- Varying degrees of *economic* regulation
 - Politics vs. Markets
 - Uneven transparency, consistency and independence
- Prices to consumers are often regulated independently of costs and allocated risks



The power and gas sectors face rising costs, greater complexity and an increasing need for market-based reforms

Focussing on ASEAN in particular, the themes that emerge from these countries are as follows



- Electricity market in place
- In process of market implementation
- Traditional IPP

Key Challenges

Singapore

- Fuel mix highly dependent on gas
- High cost of electricity
- Lack of indigenous fuel resources

Philippines

- Increasing challenges to new build due to regulation & counterparty credit worthiness issues
- Open access introduces uncertainty
- High cost of electricity

Malaysia

- End of gas subsidies changes gas vs coal economics
- Develop an efficient and effective single buyer mechanism

Vietnam

- Mismatch between tariff and cost of electricity
- Lack of new build due to EVN's financial losses
- Severe reserve margin squeeze through to 2016

Thailand

- Aggressive new build plans of 2010 PDP version 3
- Overcapacity and inefficiencies?
- Renewables targets

Laos/ Cambodia

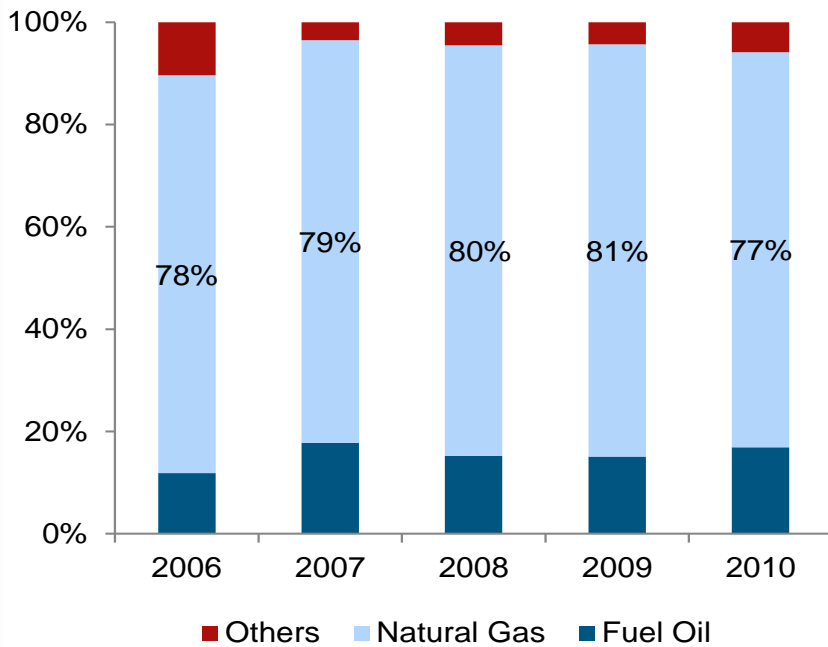
- Low Electrification
- Laos is highly dependent on hydro
- Cambodia is highly dependent on oil import and has the highest cost of electricity in the region

Indonesia

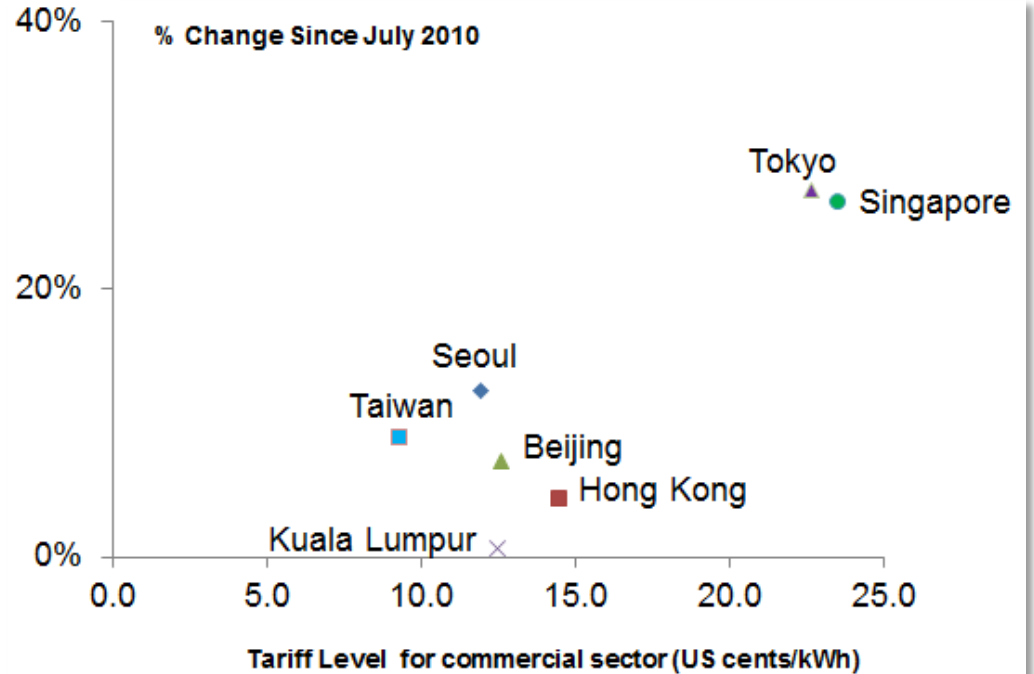
- Low electrification
- Mismatch between tariff and cost of electricity
- Lack of new build due to PLN's financial losses
- Domestic gas/coal supply shortage induced by lower domestic prices for both fuels

Singapore: Reliable but expensive – where to from here?

Fuel Mix Highly Dependent on Gas



Highest Electricity Tariff in Asia



High fuel import dependency

TJ	Singapore	Taiwan	India	Malaysia	Thailand	Hong Kong	China
Natural Gas Import	347,510	595,741	486,975	103,853	368,546	117,230	638,975
Natural Gas Consumption	347,510	617,299	2,471,668	1,442,401	1,425,340	117,230	4,240,754
%	100%	97%	20%	7%	26%	100%	15%

Philippines: Formerly a poster child for market reform in a developing country but possibly not really a good role model

Regulation

- The ERC appears under-resourced, struggling to interpret a complex market and under pressure to reduce electricity prices for consumers
- ERC implements a “cost plus” regulatory model that is inconsistent with the market and even more inconsistent with open access
- Delays on approving contracts and frequent refusals to allow costs to pass through create very high levels of uncertainty for new build – causing failure of bidding processes and financing problems for some players
- Small retailers have no spare cash to either fund prudential arrangements (so cannot join the market) nor create credit support for contracts (and thus underwrite new build). Worse, there are no incentives for mergers or cost savings.

Issues with New Build

- Many think that only Meralco is a credit-worth counterparty to underpin new build but operates only in Luzon and is “full” for now
- Other counterparties are seen to have credit risks that can cause project financing issues unless other forms of support can be found
- Although most economic, coal may be harder to finance than gas or renewables as the World Bank and ADB refuse to help out

Open Access Uncertainties

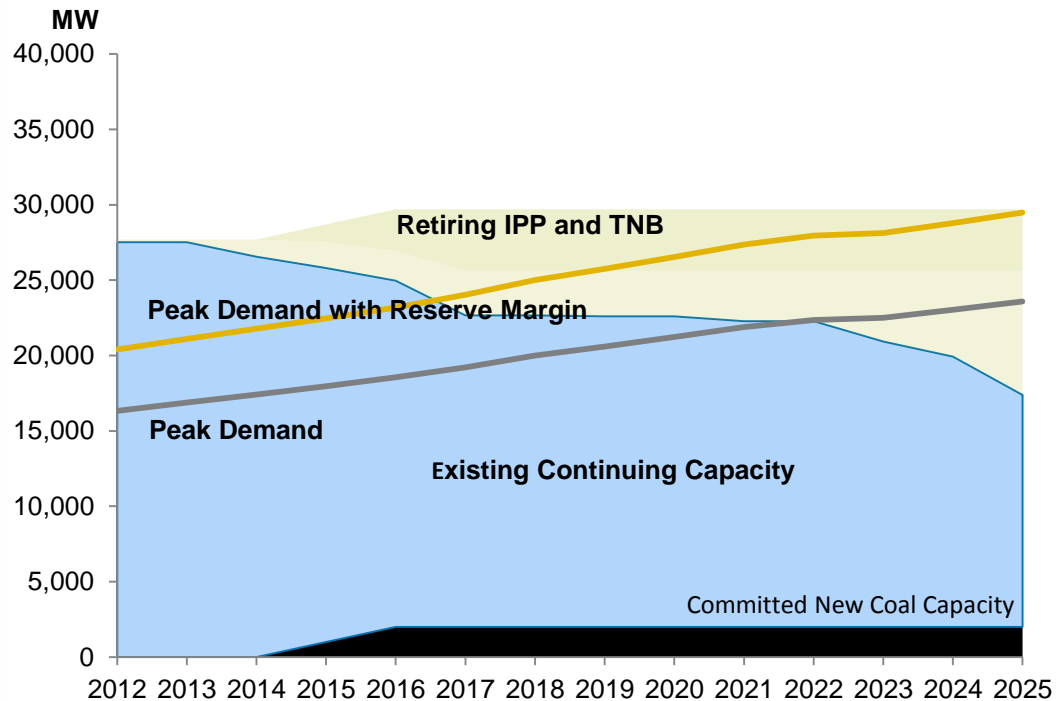
- Open Access has been planned for many years but only recently have the pre-requisites been met
- A delay from December 2011 to July 2013 appears to be the last –but only time will tell how well it is implemented in practice
- The systems for customer switching appear unfinished; practical operation may be compromised
- Impending open access means that few utilities want to sign long term contracts – but without these financing necessary new build is challenging

Malaysia: Continues to struggle with many fingers in the pie and there are real challenges ahead

Shifts in Energy Policies

- **Energy Pricing:** market pricing for petroleum products, natural gas, electricity and coal
- **Governance:** increase in market disciplines for natural gas and electricity
- **Supply side Initiatives:** import of LNG and coal; renewables emphasized; nuclear as an option for electricity generation
- Market-pricing of fuel inputs will require significant increases in costs
- Depleting existing Peninsular gas resources complicate planning
- Fukushima has complicated near term planning around LNG and longer-term planning around nuclear

A rapidly approaching Supply/Demand Gap

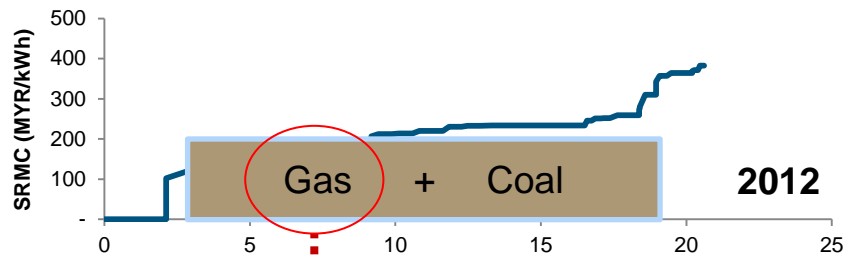


The expiry of 1st Generation IPPs beginning from 2015 and other potential capacity retirements create a supply gap

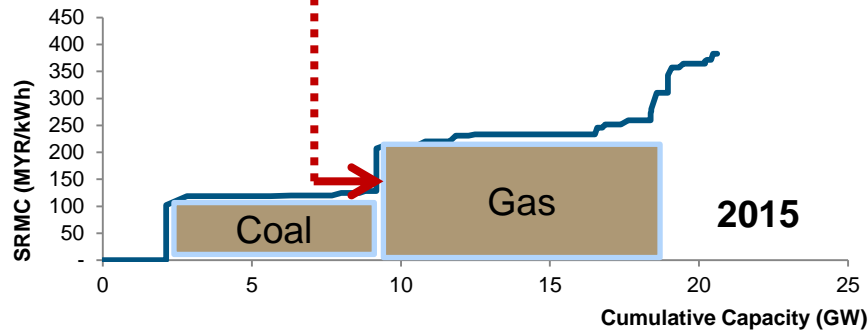
Malaysia: market pricing of gas dramatically changes optimal fuel mix

Market-priced gas will change the shape of the dispatch merit-order

Malaysia Merit Order Supply Curve - Q1 2012

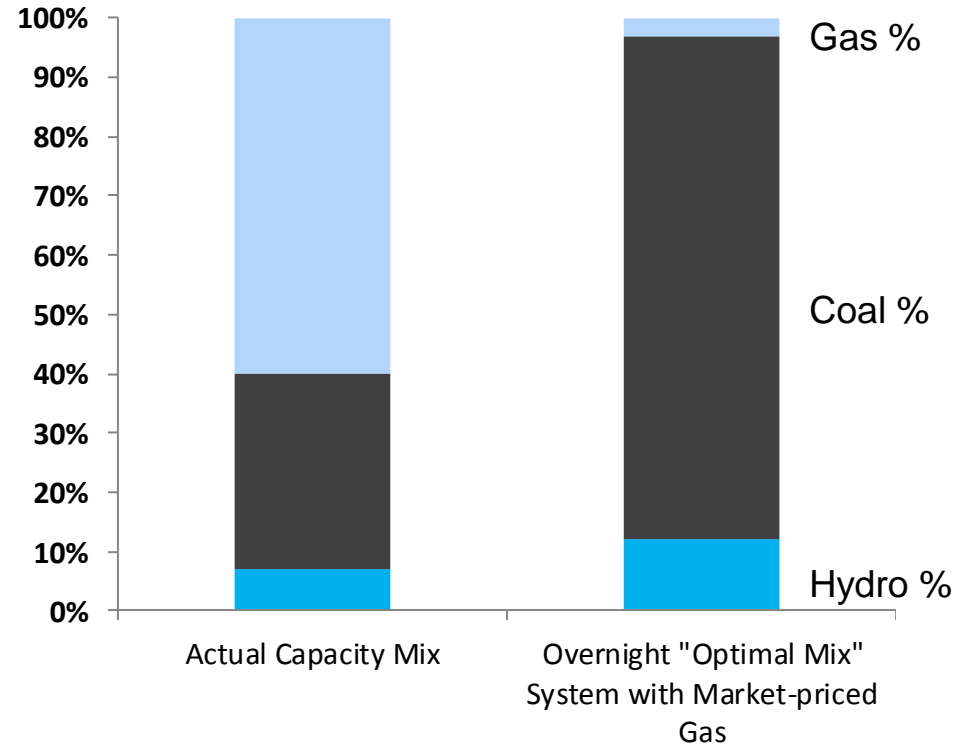


Malaysia Merit Order Supply Curve - Q1 2015



Historically, below-market gas prices supported gas as baseload fuel, but market-priced gas does not

As a result, the optimal fuel mix changes dramatically from gas (historically) to coal



Note: Hydro quantity is fixed. Hydro percent share increases due to reduction in excess capacity in the optimal mix case.

The underlying economics of market-priced gas are very different from managed-priced gas!



Vietnam: Everyone is waiting

No clarity of regulation

- Most major decisions land on the Prime Minister's desk with advice from the Ministry of Industry and Trade (MOIT).
- Under a Prime Minister decision in April 2011 the average electricity price is supposed to be automatically adjusted each quarter....But if the increase is more than 5% then EVN must get approval from Ministry of Finance and Ministry of Industry and Trade.

Tariff and Cost Mismatch

- EVN losses doubled from 2010 to approx USD850m in 2011, which includes ill-starred diversification into banking, real estate and telecoms
- Fundamentally: it costs EVN more to generate, transmit and distribute power than the average selling price.
- EVN credit is not usually accepted by IPP developers or coal suppliers, so PVN Power has had to step reluctantly into the breach.

EVN is not credit-worthy

- EVN has to become a credit worthy counter party through electricity tariff rises.
- This tariff rise will allow EVN to act as counterparty to PPAs, and will also improve its cashflow and therefore allow it to build more gas and coal plant itself especially in the south, and afford to pay for new supplies of gas and imported coal.
- EVN proposes a 10 to 13% in tariff for November 2012, and we calculate that EVN needs a total lift to its tariff by at least 50% to approach firmer financial ground.

Reserve Margin Squeeze

- South Vietnam is heading for a severe reserve margin squeeze through to 2016.
- New gas supply agreements with prices in the range of USD 6 to 7/mmbtu need to be promptly signed between PVN and international E&P companies in the southeast and southwest to allow delivery of their non-associated gas by 2016.
- New build that is underway comprises a fairly large amount of central and northern hydro, and substantial coal-fired plant in the north using cheap local coal, but only the completion of a few gas-fired plants in the south.
- There are delays with new build in the south as these will either expensive imported coal or pricey piped gas.



Thailand: Issues with pricing, overbuild and fuel mix

Fuel prices liberalisation

The current Government is trying to phase out subsidies and with these end the Oil Fund, however is having limited success....

- Lifted some LPG prices in July 2011, but kept the price for residential use at U\$13/mmbtu
 - cf. World price on a delivered basis is nearer U\$25/mmbtu.
- Oil Fund needed as a mechanism to cross subsidize gasohol, which uses domestic ethanol, and also as a mechanism to subsidize residential LPG.
- Domestic gas prices need to gradually convergence with LNG prices to incentivise exploitation of Thailand's remaining smaller, deeper, remote, and higher CO₂ pockets of gas reserves and resources.

Aggressive Plan for new build

Power Development Plan 2010 version 3 (also known informally as PDP2012) contains an aggressive new build forecast.

- Implicitly a third IPP solicitation might be forthcoming to help meet these targets
- However, there remains a question whether this plan is based on an over optimistic future electricity demand
- Risk of costly overcapacity, and inefficiency in the power system

Fuel Mix

The PDP 2010 version 3 emphasizes more imported hydro, extra domestic wind and solar in an attempt to lower carbon emissions and to wean the power sector from over reliance on gas.

But there are significant hurdles to overcome:

- Current transmission and distribution systems need to adapt to cope with more wind and solar. Requests for connections, especially from wind projects, are rejected on the basis they would destabilize the power grid.
- Strong public resistance is likely for the planned additional **coal and nuclear** plants
- Expected fallback option is yet more **combined cycle** plant using LNG and/or more domestic gas.

Laos/Cambodia/Myanmar: Less developed but rapidly changing

Low Electrification

- Laos experienced the fastest growth in electrification, reaching 70% in 2010 from 16% in 1995; however large difference between urban(close to 100%) and rural electrification (below 40%)
- The rate of electrification in Cambodia at about 24% remains one of lowest in Southeast Asia
- Myanmar 's electrification rate is low compared with other ASEAN countries at below 30%

Regulation

Cambodia

- Tariffs are set by ESP based on full-cost recovery principle
- This results in a huge tariff discrepancy between urban and rural customers

Highly unbalanced Fuel Mix

Laos

- Hydropower accounts for over 98% of the total generation capacity

Cambodia

- Diesel accounts for over 90% of the total power sources
- Price of electricity is thus volatile and fluctuates with imported diesel prices
- As a result, Cambodia also has one of the most expensive electricity tariff in the region only after Singapore

Myanmar

- Hydroelectricity represents nearly 70% of Myanmar's power generation, while natural gas fuels more than 20% and coal 9%
- Relying on limited water resources for power has forced Myanmar to ration its electricity supplies especially during dry seasons

Poor Infrastructure

- Electricity infrastructure stays vastly fragmented, Laos operates independent transmission systems in four regions whilst national grid is still being constructed in Cambodia
- Electric power loss is high due to inefficient electric power facilities, fragmented generation systems and lack of interconnection within the system

Indonesia: Blessed by fuel but still unable to match supply with demand

Low Electrification

- About one third of the total population (>85 million Indonesians) still have no access to electricity.
- The electrification rate in Indonesia actually fell from 67% in 2008 to the current 65%. This is in sharp contrast to the government's goal of 90% national electricity coverage by 2020

Logistic Barriers

- Procuring coal has been a challenge for PLN since coal poses challenging logistical issues. Mining and transporting coal from land-locked, rain forest areas in Kalimantan are difficult.
- Logistical problems have caused delays in coal deliveries causing brown out and even blackouts. PLN management was forced to reshuffle due to this problem.

Tariff and Cost Mismatch

- The government regulated and subsidized electricity tariffs; It has to provide electricity subsidy as PLN's current production cost is Rp 1,100 (12 US cents) per KWh, while the standard electricity tariff is only Rp 729 per KWh;
- Even with government subsidy, PLN is still under financial stress because of time discrepancy between fuel payment and subsidy payment from government
- PT PLN continues to be squeezed between rising costs and below-cost electricity tariffs, and its negative cash flows have caused PT PLN's inability to invest in the power sector;
- In recent years, PT PLN has not been able to bring new power supply projects on-time to meet the rapidly increasing demand amidst strong economic growth, leading to frequent rolling blackouts in Java and Bali

Domestic Fuel Shortage

- In 2006, 39% of the power plants in Indonesia have been built to use gas. However, lack of gas availability has forced many combined-cycle gas power plants to use diesel as an alternative.
- This trend has continued to now, and PLN has to buy large amounts of diesel at an expensive market rate
- Adding to the problem, coal suppliers are reluctant to meet their contractual obligations to supply coal domestically. Some coal suppliers are willing to breach their supply contract and pay penalties so they can export their coal to fetch international prices. Exporting coal offer coal producers a much higher profit margin despite paying penalties.

Although the power sector's in Asia vary – often there are common themes

- **Increasing costs with higher volatilities**

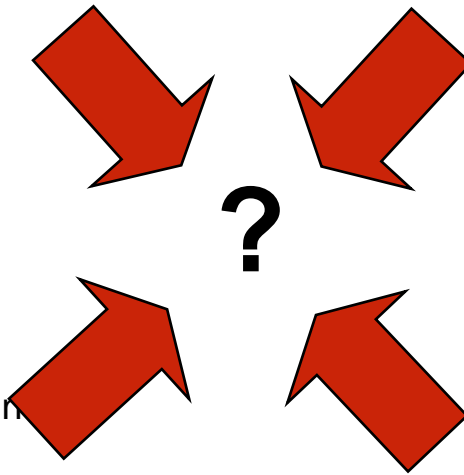
- High and volatile fuel prices
- Inflating O&M costs
- EPC contracts

- **Temptation to manage end user tariff**

- Increase amount of subsidy or impose unrealistic regulation

- **Regulatory and policy risks**

- New regulatory bodies with uncertain unproven directions
- Structure of regulation not matched to market design
- Rising costs not readily passed through
- Regulatory capacity takes time to develop
- Environmental factors become increasingly important



- **Energy Security**

- Fuel mix is not diversified
- Increasing dependence on foreign supplies

- **Uncertainty in new investment**

- Demand uncertainty
- Infrastructure constraints
- Financing difficulties

- **Restructuring pressures**

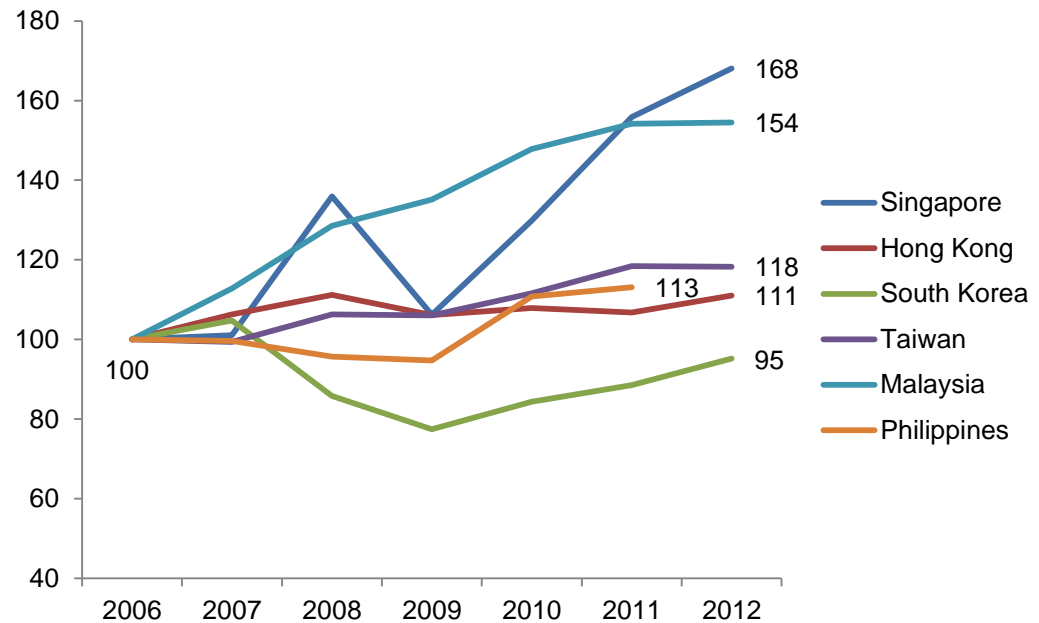
- Unfinished business
- Temptation to solve new problems using old approaches
- Lack of a clear roadmap in many cases

Common Themes: Price and Security

- Most Governments are looking for secure supplies of power at least cost
- Concerns about affordability are common across the region: indeed they are common across the world
- However, prices are actually rising as fuel prices rise, costs plant and of O&M rise
- What can vary, however, are the solutions different countries are putting forward to deal with these price rises

Updated Thursday, May 10, 2012 0:20 am TWN, CNA
Taipower publishes first 2 phases of price hike
 TAIPEI--Taiwan Power Co. (Taipower) published household electricity rates for the first two phases of a three-phase price hike plan on its website yesterday.

Residential electricity price index prices 2006-2012



Japan allows Tepco to raise power tariffs by 8.47%
 July 19, 2012 | V. Phani Kumar
 HONG KONG (MarketWatch) – The Japanese government on Friday endorsed a plan for Tokyo Electric Power Co. to raise electricity tariffs by an average 8.47%, instead of the 10.28% hike proposed by the utility, to limit the burden on consumers. Kyodo News reported. The rate hike could be implemented from Sept. 1. Tepco had proposed the double-digit tariff hike in May to meet increasing fuel costs for thermal power generation, after last year's Fukushima crisis led to a

BUSINESS | May 30, 2011, 8:19 a.m. ET
Malaysia Raises Power Prices
 "The increase in natural gas prices is unavoidable due to the increase in global energy prices," the government said. "As this situation is not sustainable, the government had no choice but to restructure the gas subsidy."

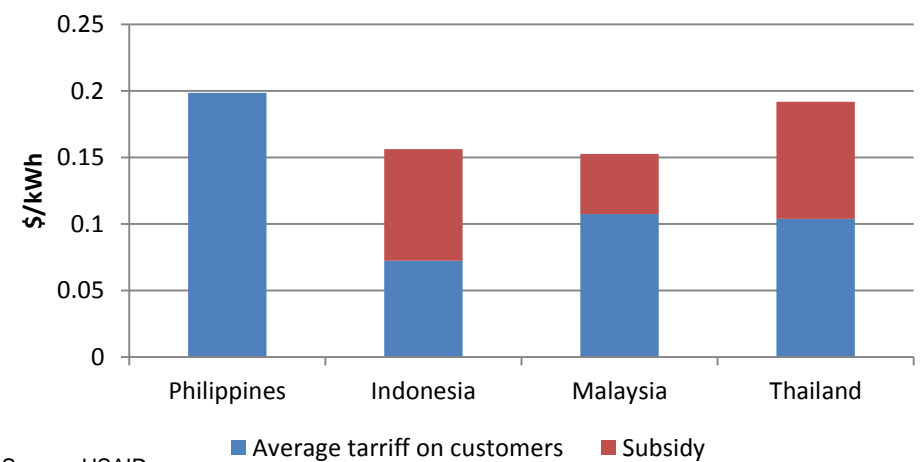
Some governments use subsidies to mitigate the true energy cost, but this creates market distortions and results in wasteful consumption

Country	Oil	Natural Gas	Coal	Electricity	Total	Average Subsidization	Subsidy per person	Share of GDP
	\$ Billion					(%)	(\$/person)	(%)
Malaysia	3.89	0.97		0.81	5.67	20	199.6	2.4
Thailand	2.11	0.48	0.44	5.44	8.47	20.7	122.7	2.7
Philippines	1.1				1.1	7.3	11.8	0.6

Source: IEA

The IEA's study finds that fossil fuel consumption subsidies are often used to artificially lower the end-use price of the fuel and alleviate energy poverty, but are an inefficient means for doing so, creating market distortions that result in wasteful energy consumption.

In 2010, only 8 percent of the \$409 billion spent was distributed to the 20 percent of the poorest population, demonstrating inefficiencies in assisting the poor.



Somebody has to pay subsidies and while they are in place consumers demand more power because they see no feedback within the price

Some countries “regulate” the high price out of the tariff

- For example, in the Philippines, the ERC must approve all new supply contracts that are signed
- Although the regulator is notionally independent, the regulation is focused strongly on “cost” rather than “economic efficiency” or sustainability
- There is a risk that the ERC may order ex-post changes to contract terms. Recent examples show that they are prepared to order large cuts in rates
 - where the base rate is cut, the ERC has previously ordered for the back-dated difference to be recovered
- Recognising this risk some PSAs include provisions such as:
 - “...If the ERC will not approve the Power Supply Agreement, the supplier will not be obligated to supply...”
 - “...If the ERC approved a different rates, the Supplier will not be obligated to supply if the approved rates will not be financially viable ...”
- There can also be long delays (a few years) in obtaining provisional / final approval
- The implications of this approach is that new build sees regulatory certainty as a major hurdle to financial close and new projects are delayed. Such delays of themselves contribute to the very rising prices the Regulator is trying to avoid!

A sensible approach is to seek the least cost fuel to supply new power, however this often means coal and has many hurdles across Asia

Public opinion

- The public generally perceive coal plant as environmentally unfriendly and they are likely to organize protest for new coal project built near their houses
- Any proposed coal plant has been the subject of media and political attention and public protests (E.g. Thailand, Philippines)



Policy

- Regulatory approval for new coal plants or coal plant expansion is usually much more difficult than gas plants
- Carbon tax could increase cost of coal plant significantly if imposed

Financing

- ADB and World Bank generally does not fund green-field coal projects: This just raises the cost of capital and the overall project costs
- Commercial banks are hesitant to finance coal projects because of perceived higher risks

The fate of coal projects are not purely determined by economics – but are these concerns justified?

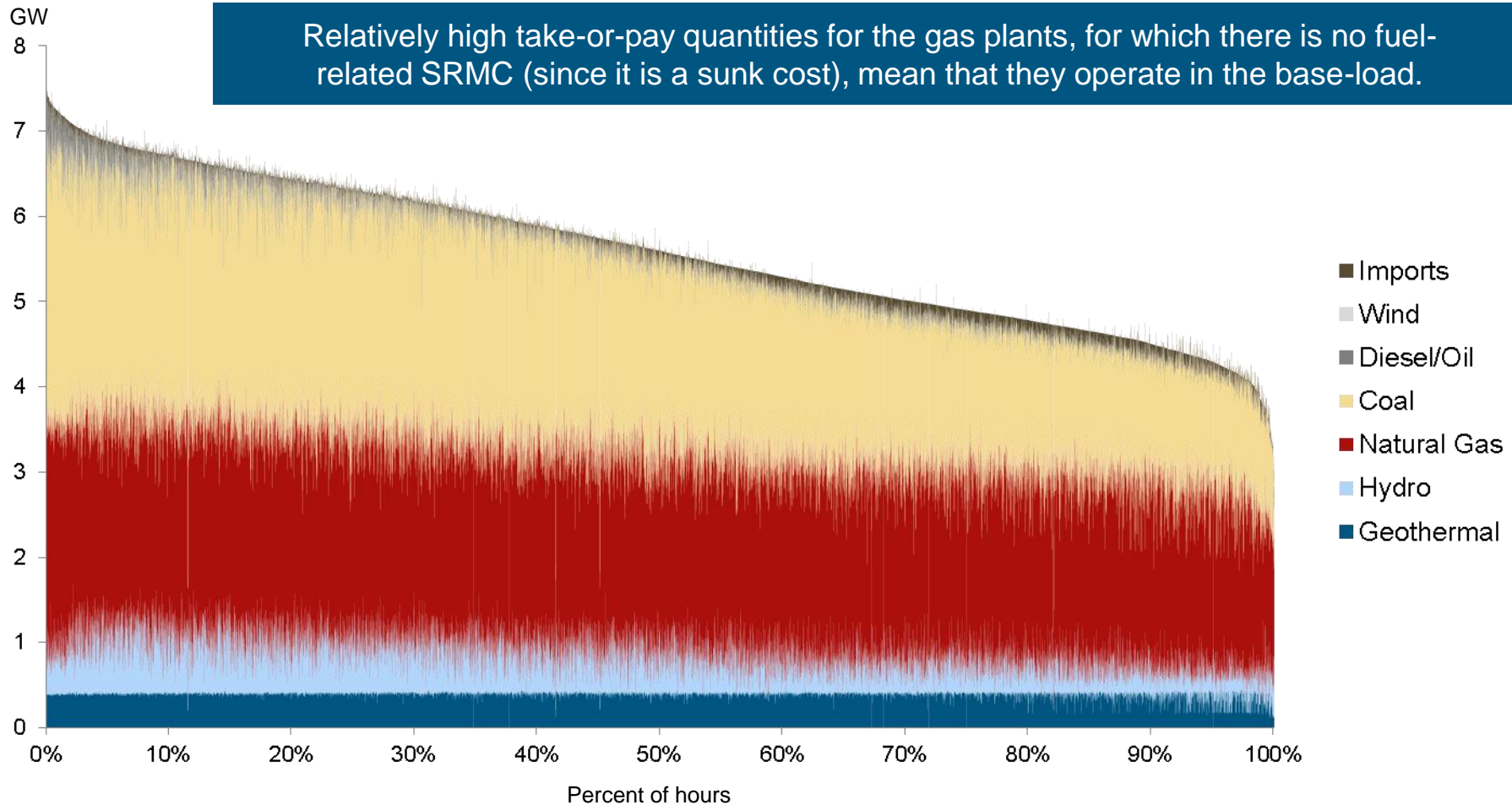
Many players seem to believe natural gas is the answer: Are they right?



- Many countries are operating/constructing/proposing Liquefied Natural Gas (LNG) terminals and migrating their generation fleets to CCGTs, claiming that natural gas could promote energy security and environmental sustainability at reasonable cost.
- Power sector usually acts as a key off-taker by Take-or-Pay (TOP) contract to anchor the investment.
- **Are these investment decisions well-founded?**

Take or Pay contracts hide the fundamental economics and distort the system price – but somebody has to recover the full costs and in this case it is consumers by the Meralco tariff

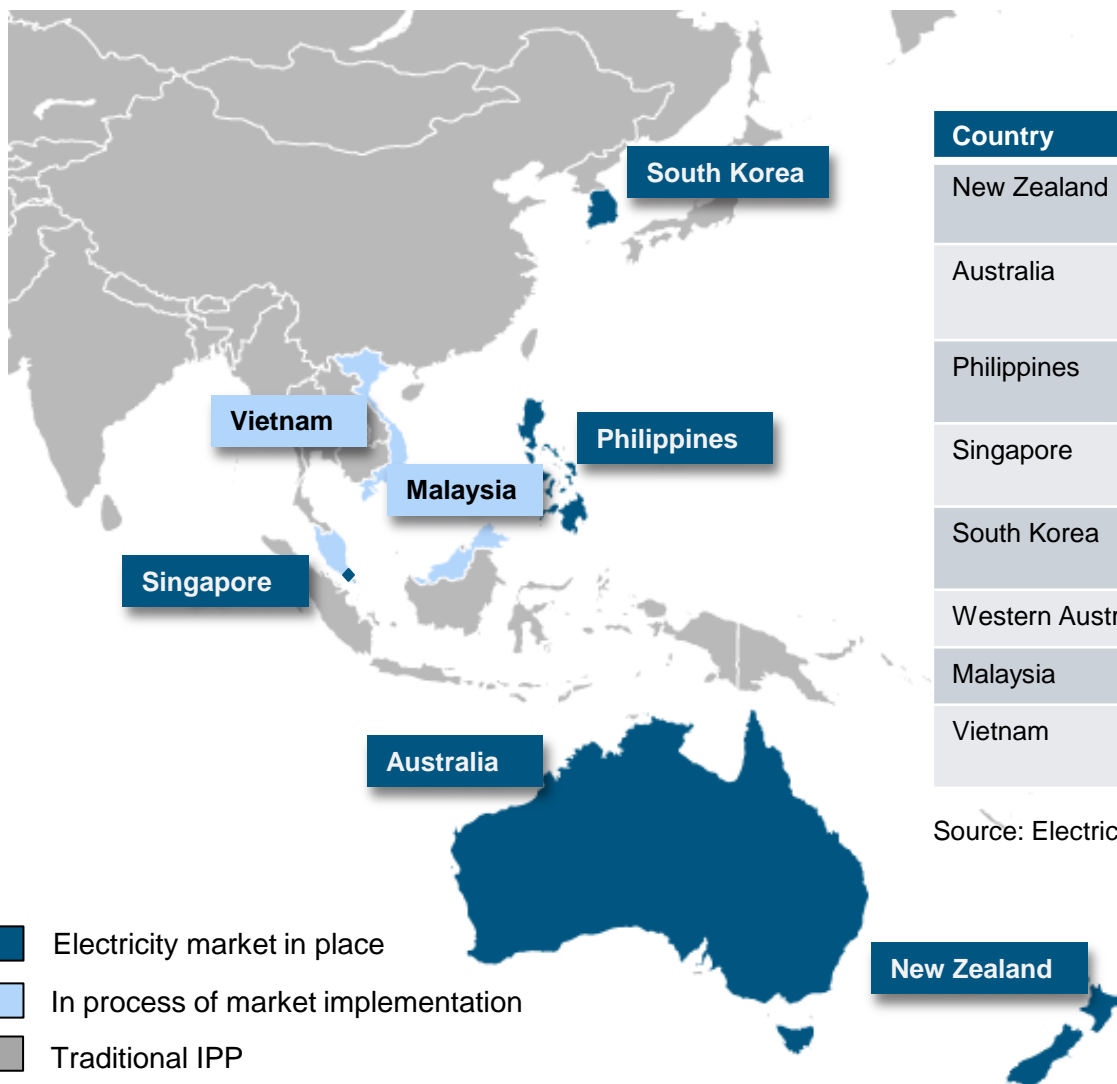
Generation mix stacked against Load-Duration Curve in Luzon, Philippines (2011)



Source: PEMC; TLG analysis

The Lantau Group

Perhaps it is possible to lower costs by rearranging the deck chairs? Various countries in Asia-Pacific have either adopted a market or are in the process of implementing a market

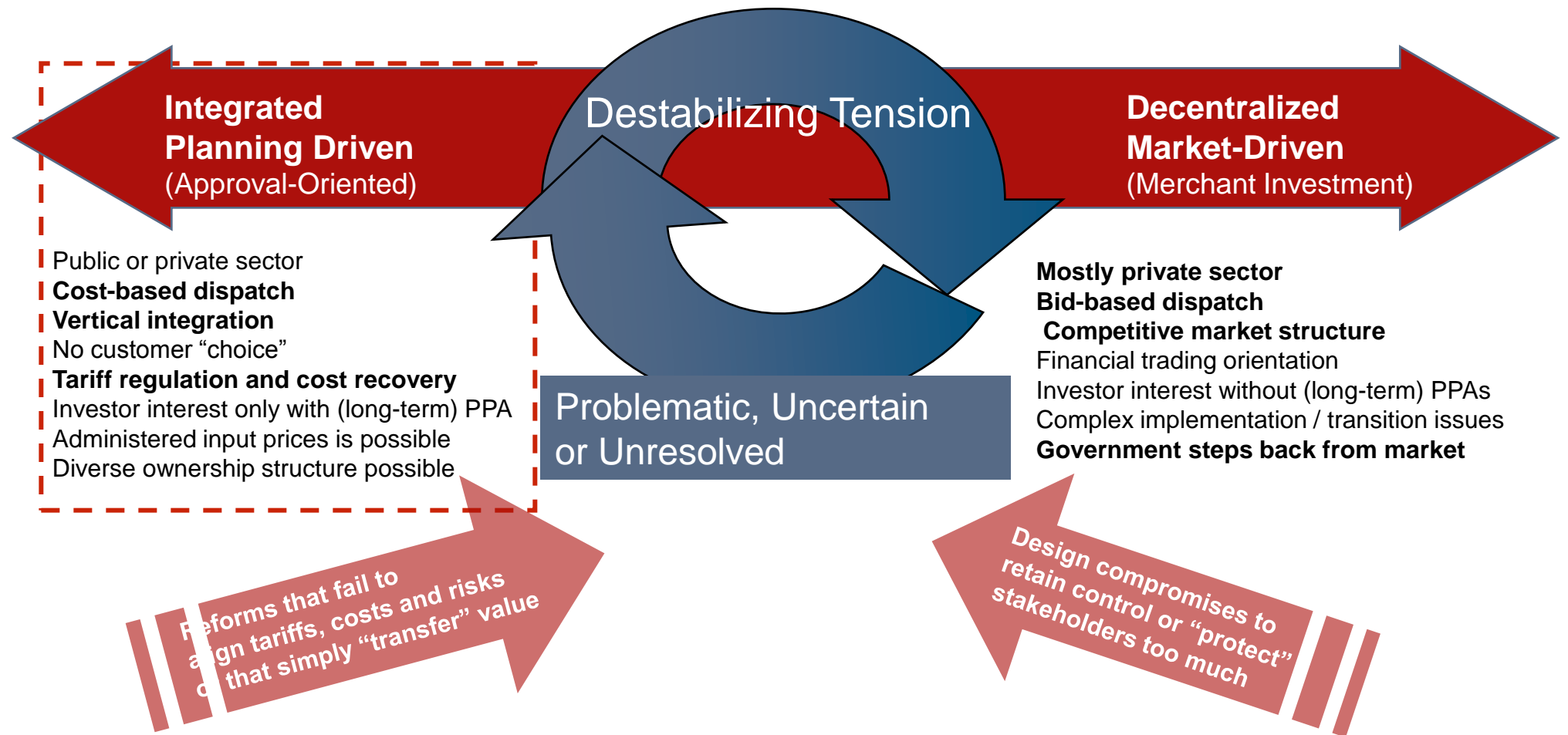


Country	Electricity Market	Market Start
New Zealand	New Zealand Electricity Market (NZEM)	October 1996
Australia	National Electricity Market (NEM)	13 December 1998
Philippines	Wholesale Electricity Market (WESM)	26 June 2006 (Luzon); October 2010 (Visayas)
Singapore	National Electricity Market of Singapore (NEMS)	1 January 2003
South Korea	Korea Power Exchange (KPX)	April 2001
Western Australia	No market	
Malaysia	No market	
Vietnam	No market	Expected 2014 (Pilot Operation)

Source: Electricity Regulatory Authority of Vietnam

- Electricity market in place
- In process of market implementation
- Traditional IPP

However as we have noted in previous presentations: Markets are not a global panacea and do not expect market reforms to work without robust regulation first



Either markets or single buyers can work, provided the frameworks fit together and the decisions, regulations and tariffs all match the chosen option

Complicated problems with many strands rarely have simple solutions

- There are no cookie cutter answers
- However there are broad themes that can help; and there are definitely things that can make the situation worse!
- Good decisions have a higher probability of good outcomes than bad decisions (although there is no guarantee of this)
 - Good decisions are typically made by **informed** parties, taking a **broad** perspective after **detailed analysis** and consultation
 - Bad decisions are typically made behind closed doors, as a “knee-jerk reaction” to a crisis; or in response to a particular sector of the communities cries of pain
- To stimulate some thought, we would like to end this presentation with some thoughts on another way to tackle cost and security, that does have precedent but where Asia is lagging
- Interconnectivity

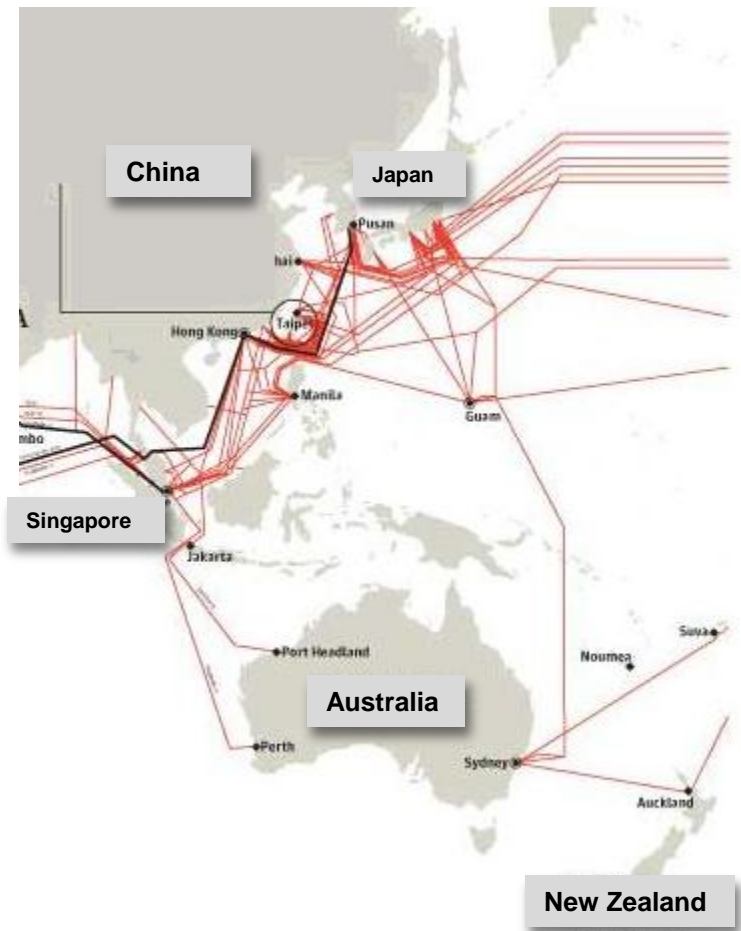
We have seen that Asia has connected problems – why not connect to find the solutions?

I take a broad view of interconnectivity

- Interconnectivity is not just a connection of wires or of pipes, but a broader way to think about connecting related systems so that both work more efficiently
- Traditionally, people focus only on connecting the physical assets – this is not enough:
 - For example, the Singapore and Malaysian electricity systems are already physically connected, but little in the way of benefits accrues from this
 - Similarly, Singapore is connected to Malaysia (and Malaysia to Thailand) and Indonesia via gas pipelines, but only one use is made of these pipelines
- We need to think beyond the physical and how we can accrue benefits through interconnected commercial arrangements as well as physical interconnections

What other benefits could we obtain with broader thinking?

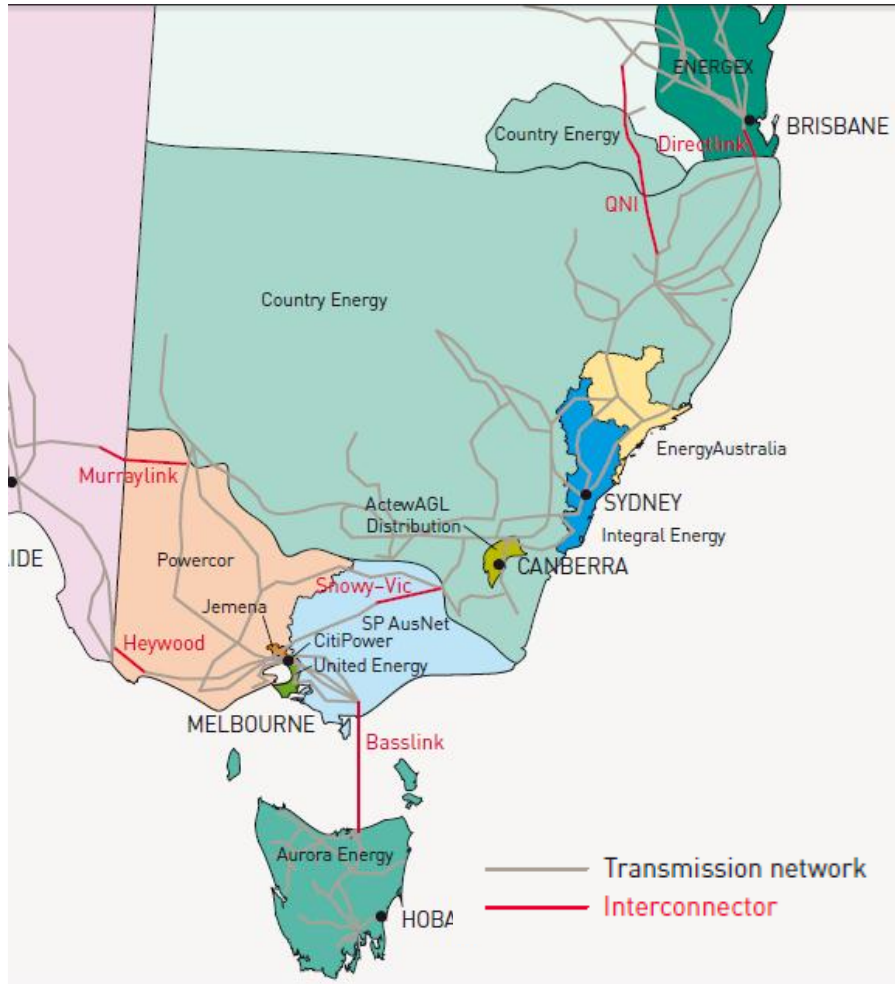
The example of fibre optic cables clearly highlights that when the benefits are large enough, the physical connections follow



Source: Guardian "The internet's undersea world"

- There are cables linking most of Asia to the rest of the world – including developing countries
- Modern telecoms would not exist without these cables as they are integral to the success of modern system, rather than being a “nice benefit” as in electricity, meaning that the drivers for telecoms are MUCH larger than electricity
- Similarly, fibre optic cables are undoubtedly easier to lay than transmission wires or gas pipelines and have less of an issue with losses by distance. They also create less of a crisis if accidentally cut!
- Nevertheless, these cables still required:
 - Co-operation among many different Governments, commercial sector parties, bankers, regulators and others
 - Regulatory frameworks
 - Commercial agreements
 - Ways to recover costs

Where a power interconnector connects two markets and is allowed to be fully functional, benefits accrue: Example - Queensland-New South Wales Interconnector (QNI)



Benefits

- **Reduction in Pool Prices**
A\$22.5 million per week (Jardine, 2001)
- **Reduction in pool price volatility**
 - Potentially up to A\$30/MWh (Booth, 2001)
 - Broadly attribute the reduction in Queensland spot market price volatility to QNI without quantification (Jardine, 2001; John Field Consulting, 2003)
- **Reductions in ancillary services costs**
A\$2.5-3 million per week (Jardine, 2001)

Costs

- **Capital Costs:**
A\$350 million (Jardine, 2001)

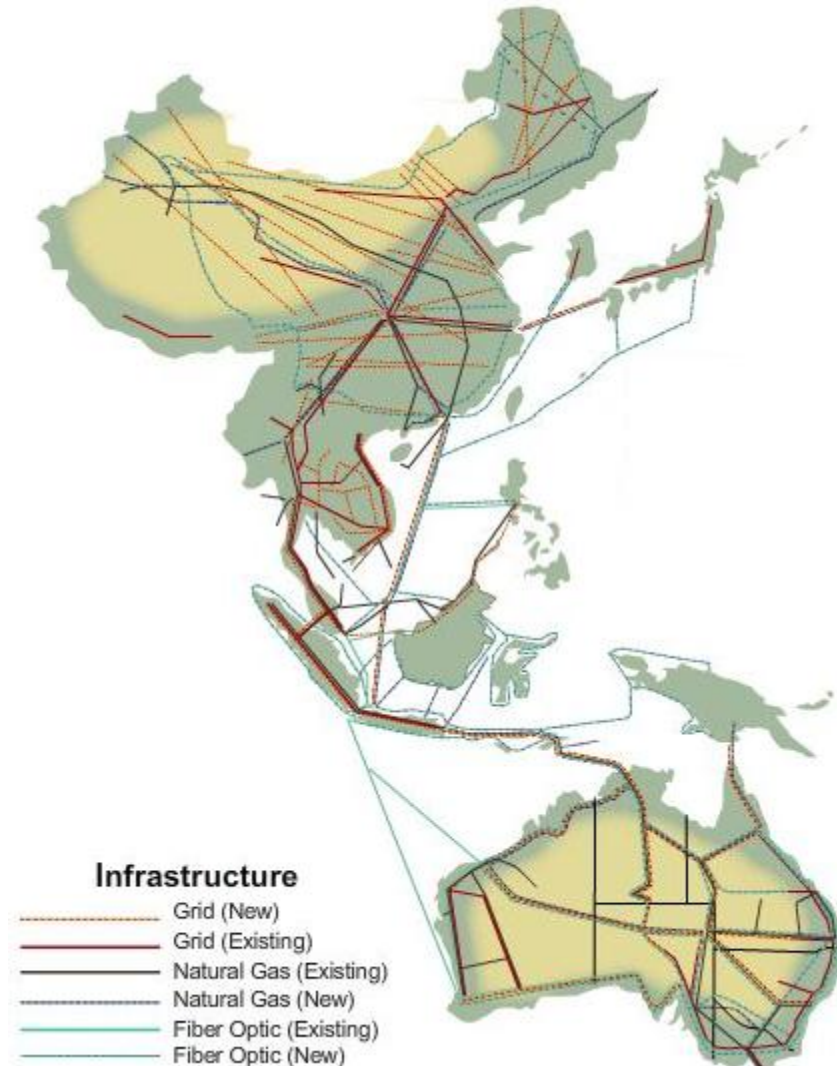
Source:

R. Booth, 2001 *An Assessment of the first six months of operation of the QNI Interconnection*

G. Jardine, 2001 *QNI: Benefits vs Costs, Interconnect 2001 Conference*

Source: Australian Competition & Consumer Commission

The Pan Asia Power Grid has been discussed but not implemented – why not?



Pan Asia Power Grid

- **An example of the benefits includes:**
 - Increased energy market competition, lower consumer prices and increased energy security
 - For economic benefits, by deferring capital investments for new generation as a result of sharing spinning reserves and reserve margins
 - Allow larger generating units due to enlarged power systems

However, “big bang” implementations are difficult to achieve. They require too many players to align too many interests.

The winners may not be the ones who bear the cost; the losers will always oppose any action.

Sometimes prices go up – one region wins/another loses. Some stakeholders gain/some lose. Consumers might not win all around

Perhaps the place to start is to figure out commercial arrangements on existing infrastructure that reap the benefits, before attempting to expand to new interconnections

Perhaps we should be focusing more on extracting maximum benefits from interconnection, not connectivity for connectivity's sake

- If you look at the details of the Pan Asia Power Grid, there are some rather dubious connections included
 - For example, do we really want to connect Palawan to Malaysia, before Palawan is even connected to the rest of the Philippines?
- Better to focus on the connections where you can obtain most of the benefits
- Better still, to focus on getting the benefits once you make the connections

Interconnectivity can be achieved through market mechanisms without physical constructions – gas contracts that allow backhaul; spot cargoes that may be diverted

Drivers for Asia LNG Trading

- Actions of LNG buyers post expiration of existing LNG Sales and Purchase Agreements (SPAs)
- Abolishing destination restriction clauses in SPAs
- Deregulation in electricity and gas markets
- Decrease in take-or-pay levels
- Increasing number of LNG suppliers
- Increase shipping capacity

Benefits of Asia LNG Trading

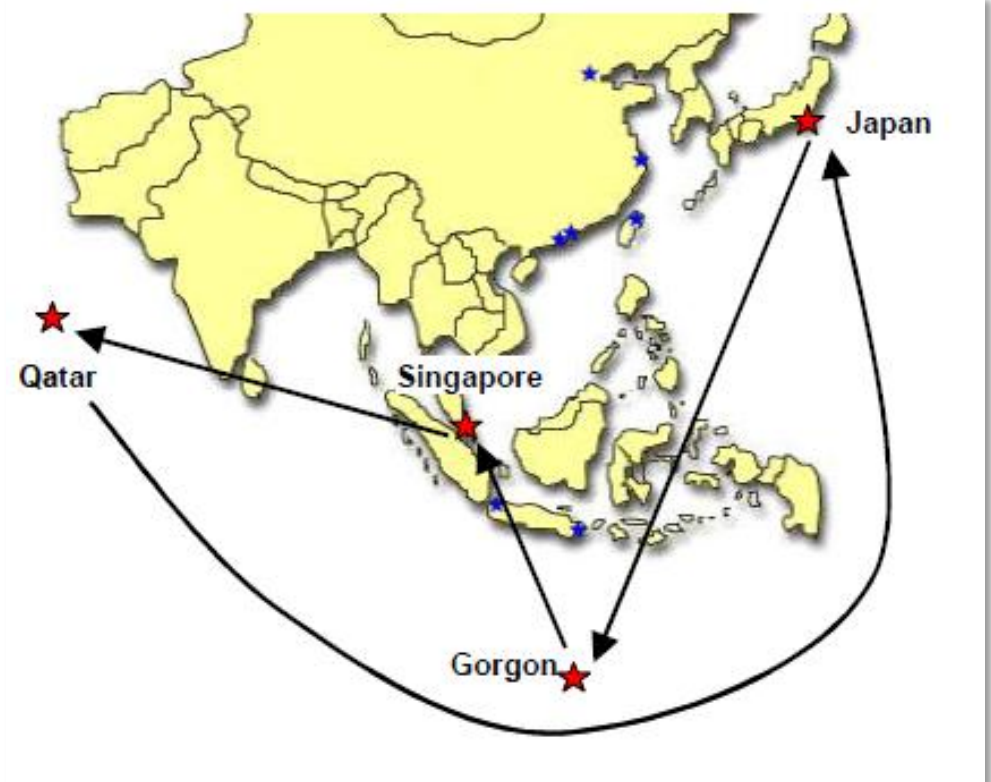
Swaps for Demand-Supply Adjustments

- Cost of procurement could be minimized by diverting LNG cargoes to other Asian countries such as Japan, Korea and Taiwan

Transportation Cost reduction from LNG Backhaul

- Significant transportation cost saving opportunities exist that instead of heading directly back to Qatar, LNG vessel unloading at a Japanese terminal could load at Gorgon in Australia and deliver in Singapore and then back to Qatar
- Japan and Singapore could share the cost savings

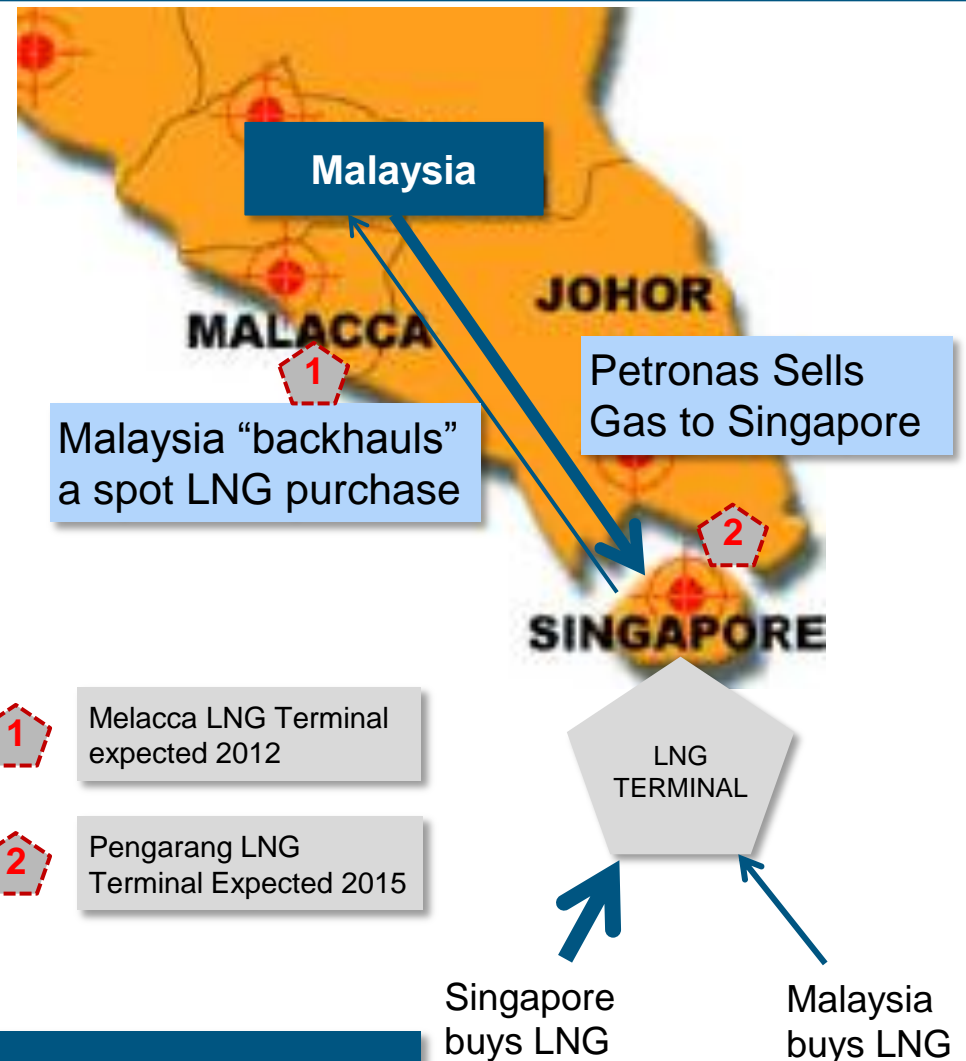
The example of LNG Backhaul



Source: EMA Consultation Report

Expanding the ideas of trading, interconnectivity can leashes large potential cost savings through, for example, deferring capital investments

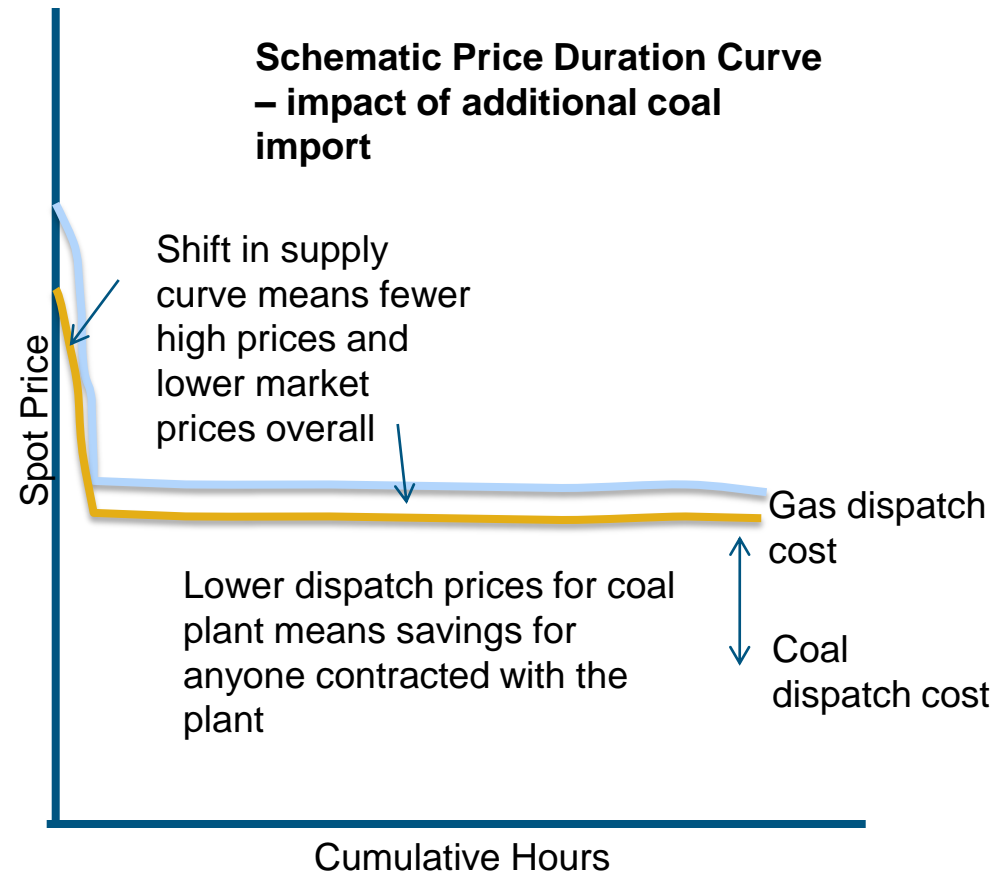
- Malaysia could backhaul LNG (or even buy gas opportunistically from Singapore gencos) through the Singapore LNG terminal by netting the quantity from the Petronas export to Singapore
- Malaysia could possibly defer some investment in the Melaka LNG terminal, creating value
- Malaysia would always retain the option to develop or expand its own LNG terminal as needed, after gaining additional market intelligence and benefitting from further technological developments in LNG regasification technology
- At no point would Malaysia be “importing” physical gas from Singapore, but offsetting a portion of gas that otherwise would have been exported by Petronas
- Neither Malaysia’s nor Singapore’s energy security would never be at risk.



Money saved by deferring capital investment, while preserving optionality

Another example may be the import of coal-fired power generation from Malaysia or Indonesia into Singapore

- Singapore has limited space to build new coal fired power stations, but is close to both Malaysia and Indonesia
- New stations and an interconnecting cable could be built in either Malaysia or Indonesia and the power imported into the market in Singapore
- Consumers would benefit from this in Singapore: Access to cheaper fuels, deferred new construction in Singapore, lower spot prices overall
- A key question, however, as whether the benefits are maximised would be the arrangements in the exporting country. Done well there could be additional benefits but done poorly (for example, a dedicated transmission line) would be something of a wasted opportunity



The barriers to interconnectivity are rarely physical but working together we can find a way

- Where projects like this are involved, costs are specific but benefits are diffuse
- It is hard to find a single player whose benefits are greater than the costs
- Unlike Australia, which had the benefit of a Federal Government to help push through projects between States who could not agree, the Asean region comprises sovereign nations which makes agreements harder to reach
- This is where a broad perspective and a coalition of interests can help: starting small (perhaps with the example of backhaul of gas through Malaysia, an almost zero implementation cost project) there needs to be examples of how international co-operation can achieve benefits
- Meetings like this can help: coming together to explore ways to work together for mutual benefit are always a good start and I hope you enjoy and learn from the rest of today.

Thanks for listening and I look forward to talking to you in through the day