AUSTRALIAN DOMESTIC GAS OUTLOOK CONFERENCE
SYDNEY, 1 MARCH

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1. Introduction

Good afternoon…

Thank you for the opportunity to speak today. Energy is vital to our wellbeing and quality of life in Australia. The industry is facing challenges on almost every front – it's important to have these conversations and debates.

I expect to start another debate with this observation:

Australia's golden age of gas is over.

[PAUSE]

Who am I to say that? I'm responsible for EnergyAustralia's energy business – we make or buy the electricity and gas for all our customers from our generation assets and trading portfolio.

EnergyAustralia is wholly-owned by CLP Group, one of the largest integrated energy businesses in the Asia-Pacific with 18,000-MW of equity generation capacity and more than 7,500 employees.

EnergyAustralia is Australia's third-largest energy retailer. We have around 2.6 million customer accounts; each one represents a family, a business or a large commercial or industrial operation.

We supply electricity and gas to our customers from a portfolio including

- The 1480-MW Yallourn power station in Victoria and the 1400-MW Mt Piper plant in New South Wales
- The 430-MW gas-fired power station at Tallawarra in New South Wales, one of the most thermally-efficient plants of its kind in Australia
- The 200-MW Hallett gas-fired power station in South Australia, and
- Contract control of the 950-MW Newport and Jeeralang gas power stations in VIC

We have a proud track record of bringing gas to market for our customers and to power our generation. EnergyAustralia underwrote development of the Casino and Otway fields, much as we're doing right now with the Sole field offshore Victoria.

We have been buying and using gas for residential, commercial and industrial customers for decades.

And today I can confidently say those decades were a golden time for gas customers in Australia. And those days are gone.

2. Setting the context

We had a great run; 30 years where no one had to worry about gas. It was plentiful, it was accessible and most important, it was cheap.

Why was that?
It's all about the geology.

Bass Strait was full of oil as well as gas. The oil flowed so fast that additives were needed to make it flow faster in the pipelines. The gas came out at such high pressures that it pressurised the entire Victorian grid, without compression.

50 years of production from a world-class field with huge production rates provided some of the cheapest gas in the world. This gusher paid about 2.5% of Australia's federal taxes for 50 years.

It's hard to overstate how good a field this was for Victoria and Australia.

Of course, other fields helped. The Cooper basin, the Otway basin and a few other fields brought on extra production with good geology – wells close to shore, not too deep, with good pressures.

These fields are all in decline. It's been a long time coming – remember the PNG pipeline to bring gas to Australia in the 2000s? It was proposed to address the decline in reserves.

Coal seam gas changed the PNG story. The free flowing first wells were competitive with the big fields. A lot of the rest is not. There's lots of gas in the ground, but the cost of its extraction is higher than the older fields. We have not seen any shale like break throughs in costs for coal seams.

The older fields were like filling a swimming pool with a fire hose. Some of the new coal seams seem more like filling the swimming pool with a kid's water pistol. You can do it – but it's hard work.

During our golden age, we were indeed the lucky land of gas. Smelters, manufacturers and major users of gas in the world simply didn't have to worry about gas supplies or pricing.

Regularly we had customers who would call us the day before Christmas to buy gas for the next year. It was the same price as the previous year and the gas was there ready and waiting for them.

Elsewhere in the world, buying gas was much harder. Importing nations like Japan, Korea and China have worried for decades about both security, that is accessing physical supplies, and the price of those supplies which varied with oil prices and exchange rates.

Similar dynamics have played out in various European nations. Exporting businesses had to work out how to buy gas to stay competitive on the world market.

Australia did not – we had some of the world's cheapest gas, plentiful and secure.

But that golden age is over.

3. What does this mean?

It's a bleak picture but let's not curse the gods just yet. Yes, cheap gas is gone with the good geology and there's no turning back the clock.

The good news is that gas consumers still have physical and financial options available to manage gas security and pricing. The Australian industry can still compete internationally.

But competing is no longer about cheaper gas than everyone else in the world.

To compete now means *planning*. It means treating gas as a strategic input and buying it on a different basis. Competing now means considering the energy input costs of your industry and using these insights as a way to make gas purchasing decisions.

Today, within the electricity industry we are asking tough questions that, years ago, frankly we didn't bother with.

Questions like:

- What exactly is the price of gas? What drives movements in the gas price?
- Where does the gas come from? How secure is the physical supply?

Let me give you a taste of how we digest these questions.

The price of gas used to be $3-4 forever and a day. Today, no longer – the geology of those prices is gone.

Our Eastern Australian gas market is now connected to the world market with different gas prices. Spot prices can dominate in the short term but spot markets are just that – you can have the gas tomorrow, but next week, who knows.

Gas users like EnergyAustralia need gas for longer terms than next week, we need to know we have gas years ahead; pricing in this forward market is set by the cost of getting gas from new gas projects – often priced relative to oil or, more recently, on Henry Hub in the US.

Australian gas looks generally secure in that there are molecules in our system in most scenarios. But we have bigger physical risks than in the past.

An extended outage at Longford, still the biggest producer, is difficult for the market to absorb. There's not the slack that used to be in our system. It's a physically more balanced market and removal of any major component is now a problem.

The risk of physical shocks factors into our thinking and that of others – it's one reason we see LNG import terminals as potentially attractive. LNG import terminals move big quantities of gas – one attractive benefit of this sort of infrastructure is that they provide physical insurance for our gas network. LNG imports offer the potential for floating gas storage – and this physical option could be really useful in maintaining the quality of the gas system we have come to expect.

Understanding the basic drivers and risks is our first step in buying gas – and we think other gas users are no different. The questions to answer is: "what can I do; what are the physical and financial options I have to manage purchasing gas in the afterglow of the golden age?"

"As a user of gas, should I seek a fixed price, an oil-linked price, Henry Hub or something else?"

Before tackling these questions, let's learn a bit from history.

Reflection

Around 2004 we had gas contracts expiring around 2010. We thought it was time to recontract. So, we began to speak with producers about a new contract.

One of the marketers had recently come from the US where they had started using Henry Hub pricing in a big way as the reference price of gas. His pitch was: Henry Hub is the value of gas – let's use that as our price.

Henry Hub A$/GJ

On the screen now, let's remember the Henry Hub price at the time: about US$6-10/GJ.

Good deal?

We didn't think so.

We negotiated and eventually landed back more or less at historic prices.

But let's look at what happened here in a world where we said "okay, let's do Henry Hub."

Henry Hub AUD/GJ

Roll forward a few years and it turns out that the US is full of shale gas – it's everywhere and it's cheap.

Henry Hub bobs up and down but by the time of the new contract in 2010, the price is about $4 – and it stays there or thereabouts for the next 7 years, where it remains even lower today.

During that period, our golden age ends. The old fields enter decline, the new fields underpin large LNG projects in Queensland and gas demand triples from around 2015-16 onwards.

Gas prices rise to something like $8 by 2017.

What do we learn from this example?

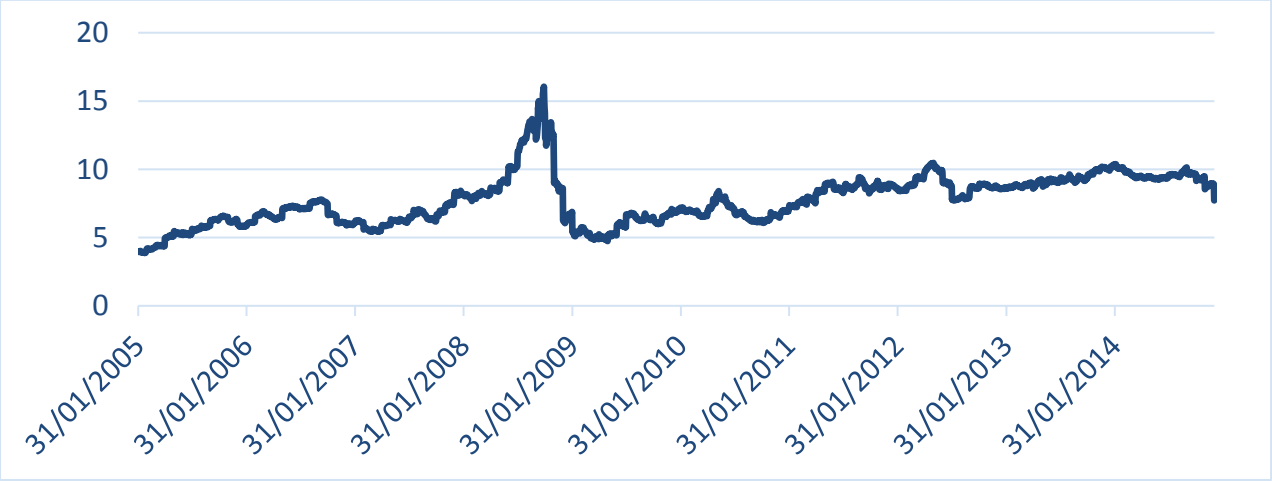
Firstly, no one – no one predicts the future well.

Some of the biggest oil and gas companies in the world thought Henry Hub pricing would work well for them – it would have been terrible relative to what ended up occurring.

A sophisticated buyer like EnergyAustralia thought this was a terrible deal – but it would have turned out great.

Is this an isolated example?

JCC AUD at 8%



Move forward in time to 2014 when contracts for 2017 and beyond were being negotiated.

Producers were proposing oil-linked netback prices at something like 8%, which was $8-10 per gigajoule.

For buyers like ourselves used to fixed and lower prices, this was difficult to swallow.

Oil volatility?

Did we really want that in our business? Did mums and dads across the land want exposure to oil in their gas price? Maybe yes, maybe no.

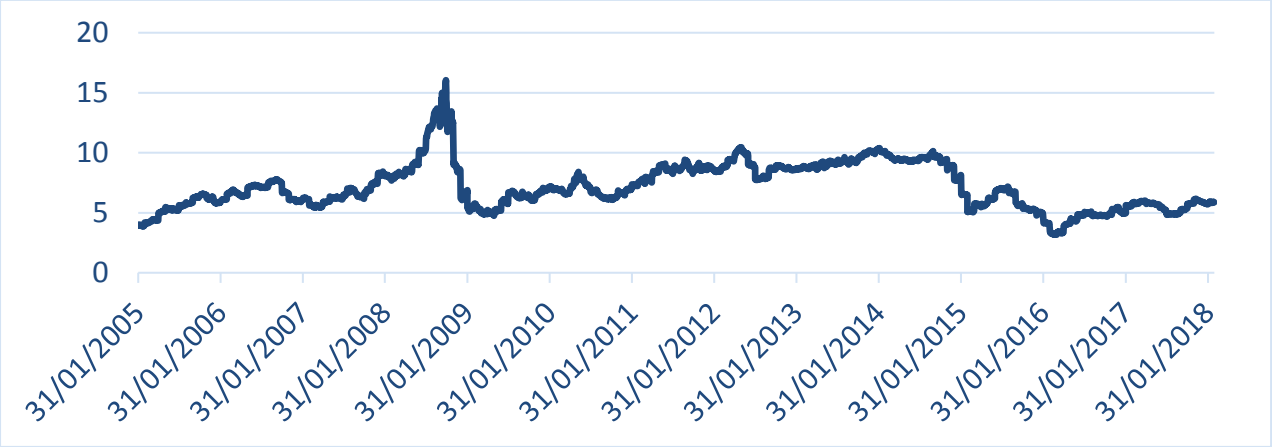
Eventually, deals were done across the industry.

With oil volatility looking a bit scary, many buyers opted to hedge the price – lock it in financially, fix the price with financial derivatives so that oil price movements did not change the gas price.

What happened?

Fast-forward and the oil price fell.

JCC AUD 8% full chart



Suddenly the unhedged price of gas under those contracts is $6.

Fixing the price is great when prices rise – but fixing prices at say $8 when the price falls is not a great place to be.

The second lesson: fixed pricing is not lower risk pricing. Fixed pricing is just a different risk profile, sometimes good and sometimes bad.

What can we do to manage our gas purchasing in a world where the future is uncertain and there is no single right answer? What does good look like?

One example of good was on display in 2016 when Qantas informed the market that smart hedging of fuel costs had saved $664M in fuel costs – almost half of the $1.5B underlying profit in that year.

Airlines see fuel as a strategic cost to manage and they devote time and resource to ensure it is available physically, on competitive terms, and is hedged financially to best manage risk exposures.

Clearly from this example, getting fuel or gas procurement right in the world market can significantly improve business performance.

After our golden age, there is more uncertainty in gas pricing and contracting – but there is opportunity too. But it's more complex than the past.

4. The government can't save us

In the face of complexity, it's no surprise that many wish the golden age of gas was still here – myself included.

But if you plan to batten down the hatches and wait this whole thing out until government takes us back to the golden age – I have some more bad news:

The government can't save us.

Government can do some good things in gas. We have heard from Mike Vertigan about the reform program that will make the spot markets more efficient which can only help – governments are pushing this reform.

EnergyAustralia has many times asked for the moratoria on gas development to be lifted.

We firmly believe that the right approach to manage gas developments is with detailed environmental impact analysis and planning – not with bans.

Bans just push a tight gas market tighter.

The Australian Domestic Gas Security mechanism and the ACCC reviews have certainly increased the scrutiny on producers during this tight market. This focus has helped Australians understand the drivers of change in gas.

But governments cannot take us back to the golden age. Governments cannot change the geology. Governments cannot change the world price of gas.

There is no pot of tax revenue big enough to subsidise against the impact of world energy prices.

So for buyers like us, it's time to take action into their own hands, to manage our own gas destiny.

We strongly advocate for changes that governments can make to improve the market – but it's up to us to develop the physical and financial solutions to manage our gas purchasing.

5. Supporting big players

But what about large-scale gas and electricity users? Where does the end of the golden age leave big users today?

Before I listed a series of questions that form "A Buyer's Guide to Gas in the New World".

How to hedge? Is it worth the risk? Do I need this gas long term?

We don't expect commercial and industrial customers to have these answers. That's where companies like ours have an important role to play.

EnergyAustralia is a retailer – we buy and make energy for our customers. As the market evolves from the golden age, we have changed the way we buy and think about gas. Our customers have too.

Our role for our customers is to help them understand the gas market, their gas exposures and to provide options to help them manage it.

We believe some of the options we see for ourselves will make sense for our bigger customers. Physically, additional supply options will help us and our customers ensure gas supply security and provide more options to manage gas prices.

In the golden age, customers did not need to underpin gas developments. Retailers did – because we had the confidence we could sell the world's cheapest gas to anyone. Today, it's more bespoke.

A chemical company may compete based on oil prices. A building company may want fixed prices to offer a fixed price tender. Other customers may see their international competitors moving to Henry Hub supply and want to gain exposure to the same energy cost driver.

Each customer competes in a different market and absent lowest cost gas; competitiveness and success are now in a different direction.

We see the best prospect for our big customers' success in more bespoke approaches than the past. We see customers benefiting from entering into longer term physical commitments to underpin new gas fields, LNG import terminals or pipelines.

The longer term point is important. New infrastructure is cheapest when funded for multiple years. Purchasing world market gas on oil or other indices is cheaper under longer term contracts – there is a premium for stability in demand. Security of demand is as important as security of supply. Producers need users.

We bring security as a user and so do our customers – but to get the benefits on offer longer term commitments than that offered in the past is required.

Conversely, while we see financial hedging of gas prices as essential, there is merit in optionality which means being open to shorter term hedging commitments. Fixing prices makes sense for some customers and not others – but for big gas users – this is a strategic decision and we offer our customers tools and products to manage this exposure.

It's our job to understand the customer's business and develop a deal structure that provides the right options – to give them the best chance to succeed in their markets.

6. Conclusion

Australia's golden age of gas is over – we're no longer the lucky country of gas.

After 30 years, the ubiquitous resource which meant stable prices and constant availability has ended.

Today, gas purchasing is more complicated.

As a big buyer, we now consider gas security and gas pricing drivers in a way we never needed to in the past. Success in our business means making good physical and financial decisions, building physical and financial options that help us compete in the energy markets.

Our customers face the same challenge of competing in their markets – but all industries are different.

We believe success for our big gas customers in their businesses similarly relies on good physical and financial actions – made on a longer term basis than in the past.

Australia's golden age of gas may have ended. But that doesn't mean we can't start something new and succeed – together.

Something long term.

Thank you