

Good afternoon,

I would like to acknowledge the traditional owners on whose land we meet today.

Mr Ray James Icon's Managing Director sends his apologies for his absence today. Unfortunately, Ray is unable to be here due to a Board meeting.

From the outset, let me mention that I'm not a technical oil or gas man, far from it, I work in the areas of Commercial, Communications, Media, Community and Government Relations and I will do my best to combine a little of both technical, commercial and an over the horizon view on the industry in 2012 and beyond.



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## Coal Seam Gas Risks and Returns

- Gas market trends and developments
- Emerging opportunities CSG and Shale Gas
- Cost benefits of Shale Gas v CSG

Firstly, I'd like to thank Helen Callas and the team from Resourceful Events for the invitation to present at this conference. It has been a great event and an opportunity for us to meet, share information and get to know each other a little better.

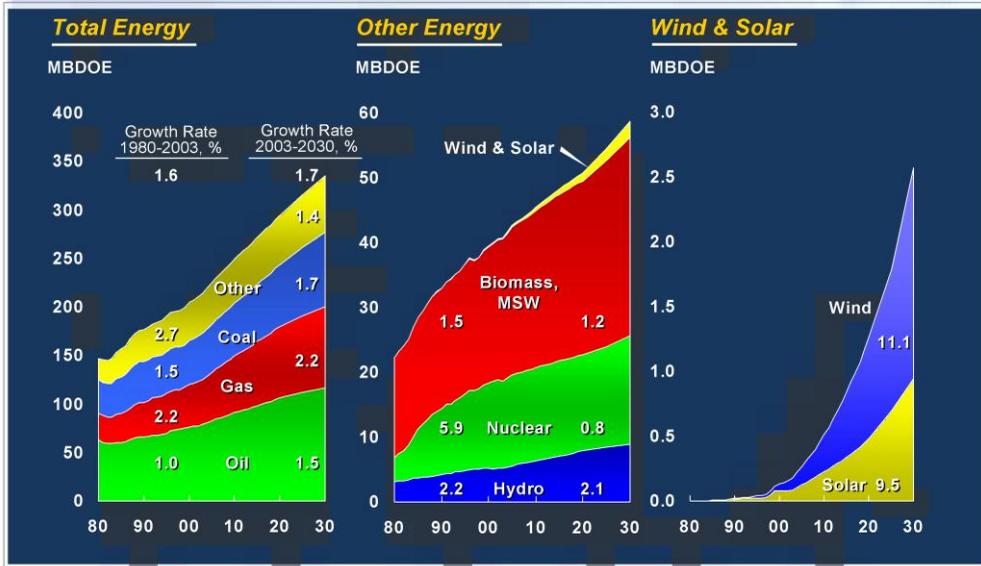
Those who attended last night's informal drinks and kicked on as I know some did, I trust you are still awake?

Today, I'd like to cover three topics:

- Gas market trends and developments
- Emerging opportunities CSG and Shale Gas
- Cost benefits of Shale Gas v CSG



## Oil and Gas remain as Primary Sources



Source: Professor Michael Economides University of Houston after Exxon

Fossil fuels will remain our primary source of energy for the foreseeable future. When Professor Michael Economides last visited Brisbane I sat with him at dinner and I recall he was quite vocal in his opinions regarding energy sources such as; wind, solar hydro and geothermal. In his opinion this segment of the energy spectrum needed to be viewed as a non replacement for established energy sources.

There are those in politics and public life with “green tinges” who discount natural gas as a cleaner and greener energy source while continuing down the path to promote wind, hydro and tidal as energy sources that are destined to contribute minimal outcomes.

The Federal Government consider between 12% -25% of Australia's power will be generated by using geothermal energy by 2050. Some say this is an optimistic view and I'm told this will be difficult to deliver as currently, the industry is still in the experimental stages with no operating geothermal plant in Australia not to mention the cost of Geothermal drilling and the connections to the national electricity grid. A further point, Queensland's power consumption will 44%+ by 2019.

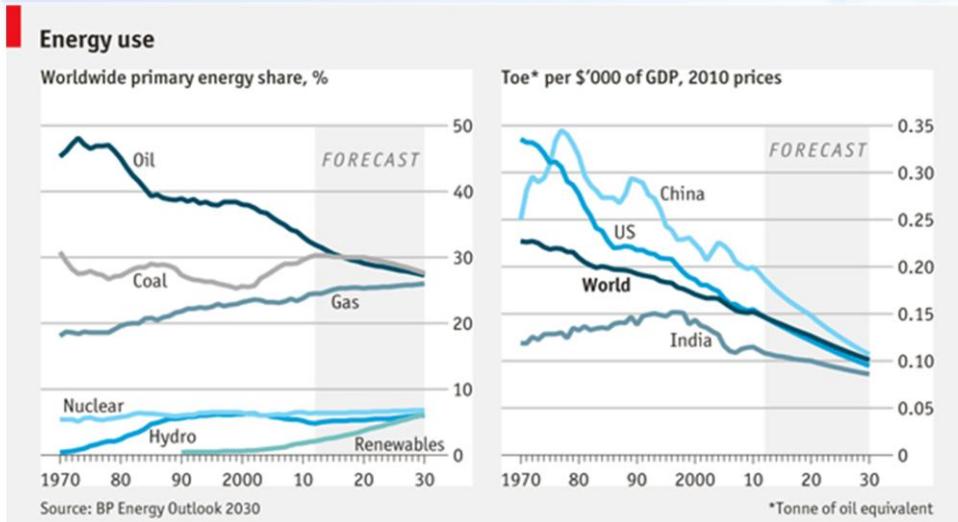
The energy source (geothermal) in the Cooper Basin is approx 900k from the national power grid and at about \$1m per km for high transmissions wires this is a massive investment let alone who would fund the interconnectors and upgrade the electricity network capacity.

Is Geothermal Energy, the 21<sup>st</sup> century Snowy Mountains scheme in waiting?

Potential customers for geothermal energy located adjacent to the fuel source in the Cooper Basin could include the BHP's Olympic Dam project.



## Energy Trends



In BP's recent World Energy Outlook, they stated the world will consume 30% more energy in 2030 than it does today.

One source of power has always dominated the energy mix- wood in the pre-industrial age, coal in the industrial revolution and then oil in the 20th century.

The proven world oil reserves in 1990 were, 1.0 trillion barrels, in 2000 1.3 trillion barrels and in 2010 1.5 trillion barrels, so oil reserves are growing. If new technologies and operations are implemented oil reserves can grow significantly.

By 2030 trends in the energy mix will see fuel shares converge for the first time as gas gains in importance.

I find the energy consumption v GDP very interesting. I only have to look at my power bill and consider the number of TV's, phone chargers, computers, I Pads, fridges, freezers, stereos, hair dryers, air conditioners, pool filters, Play Stations and X Boxes to know why my energy (power) consumption is rising.

At the same time in global terms there is a change underway as the amount of energy needed to produce a unit of GDP will also converge as globalization drives energy efficiency, making economic growth far less energy intensive everywhere in the world.

The corollary to this is the rising middle classes in the emerging giants of China and India who will be demanding energy to power their TV's, air conditioners, stoves etc as they enjoy what the western world has enjoyed for a considerable time.



## Australia at Forefront of Boom

- Australia is the site of the world's greatest LNG construction boom
- Eight mega projects 65.5mtpa
- Capital investment \$180B+

I shall now address the emerging opportunities for the CSG/LNG industry

There is no official record of construction to compare, however it's a safe conclusion to draw, that Australia is the site of a world boom in LNG construction. Just ask the residents of Gladstone, Broome and Karratha as well as the good folk in Western Queensland or Northern & Central New South Wales. In fact the commercial office space being leased in Brisbane by LNG proponents has created a shortage of longer term accommodation where a few years ago there was an abundance of accommodation. A headline in the Financial Review last week read, "Resources sector to set growth pace in 2012. Business investment in Queensland is expected to increase, by 35% up from the forecast of 28%".

Actually, I'm not quite sure just where the industry was when I compiled the figures for this presentation, so my apologies if some of the numbers in this presentation are not 100% current. This industry is moving rapidly.

All across the economy we are seeing tangible signs of how the LNG boom is benefiting businesses and growing employment opportunities, in selective markets, trades and cities.

We have 65.5 mtpa or more than 3 times the existing Australian LNG capacity of Darwin and the North West Shelf in 8 mega projects. We are building a world class LNG capacity including 15 LNG trains and there are other projects still in the pipeline awaiting, LNG sales contracts or sufficient gas supply to honour contractual obligations and then possibly going to front end engineering design and or final investment decision.

I often struggle with big numbers especially anything attached to a billion dollars. Here is interesting comparison, a capital investment of \$180B+ in LNG projects is the equivalent of constructing twelve, 900 bed public hospitals.

Comments in the media recently suggest there will be no more greenfield LNG projects in Australia. I question this assumption as I'm sure it refers to mega multi train projects, not a single train facility with a maximum capacity of say 2.5-3.0 mtpa.



## The numbers aren't large – they're HUGE

Two Operational LNG Plants

Five more by 2015

15+ Trains

Price x MTPA x project life cycle

Taxes & Royalties

Social infrastructure

Flow on effect

### AUSTRALIAN LNG PROJECTS

Project	Type	Capacity (mtpa)	First LNG
North West Shelf	Conventional	16.3	1989
Darwin	Conventional	3.5	2006
Pluto	Conventional	4.3	2012
Gorgon	Conventional	15.0	2014
Queensland Curtis	CBM	8.5	2014
Gladstone	CBM	7.8	2015
Australia Pacific	CBM	9.0	2015
Wheatstone	Conventional	8.9	2016
Ichthys	Conventional	8.4	2016
Prelude	Floating	3.6	2017
Browse	Conventional	12.0	Awaiting FID
Arrow	CBM	9.2	Awaiting FID

Source: EnergyQuest.

As you can see CSG/LNG is a huge business that will forever change the face of the resources sector in Australia and contribute to lower greenhouse gas emissions.

It will also provide social infrastructure and services to regional and rural towns and cities that a few years ago could not be imagined.

Earlier this week, in speaking with the Deputy Mayor of Gladstone, Councillor Matt Burnett he told me, "Qantas has announced it will launch a Boeing 717 service with an additional 1600 seats into and out of Gladstone a week". This is a great service for the people of Gladstone and Central Queensland and will also assist in growing the business and tourism sectors.

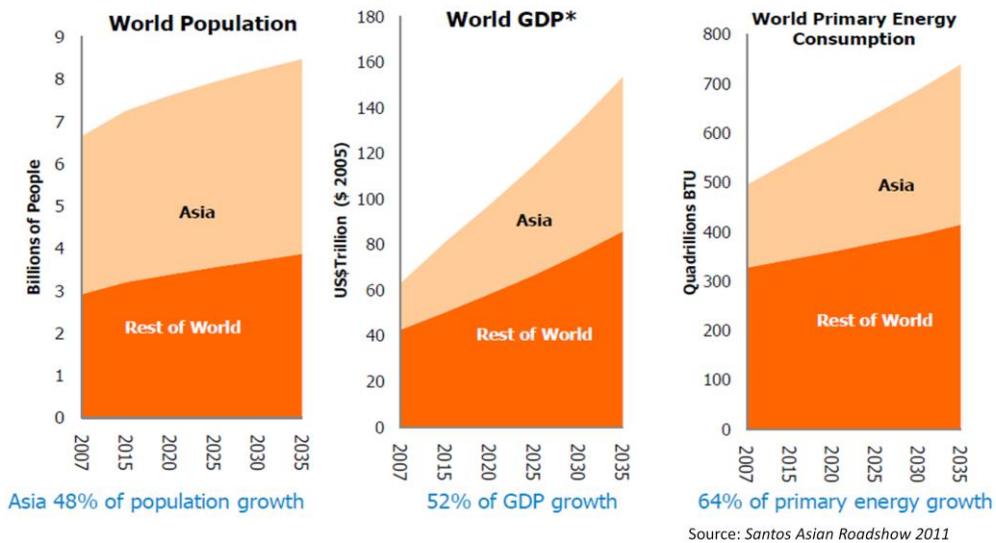
A point I like to reinforce is a simple maths calculation.

If we take the widely published FOB price of a tonne of LNG multiplied by the contracted LNG capacity, by the project life cycle (30 years approx) the revenue is a figure far too large to comprehend. Export income for Australia and royalties and taxes that a few years ago would have been a dream for Governments and Councils.

With such an opportunity, industry (all of us) need to focus on our longer term capacity to genuinely engage the community and Governments to ensure we build a long term social licence to operate. Nothing can be more important than meeting our environmental performance and community obligations. If ever we doubted Governments ability to stop an industry in its tracks, remember the live cattle exports saga.



## Asia is the Growth Engine



Anybody who has visited China in the past few years will tell you the country is not only booming, but it exceeds their wildest beliefs of China in the 21<sup>st</sup> century.

There are over 160 cities in China with a population over one million and a total population of 1.330 billion people or about 22% of total population in the world.

The province with the fastest increase in population during the past decade is the Guangdong Province with a 37.5% increase. Imagine Australia growing by this percentage in a decade.

Business Week recently stated, "that by 2025 China will have over 220 cities with a population over 1 million people and this requires a massive building program and long term secure energy supplies".

China will be the biggest energy importer by 2030.

Asia is expected to account for 48% of the world population growth, contribute a +52% of GDP growth and a primary energy growth of over 60%.



## The Growing Market

- Energy demand growth +39% by 2030
- Non OECD will account for 96% of growth
- USA self sufficient by 2030 Oil/Gas
- Gas will contribute 31% of global energy growth

Global energy demand will grow by 39% and you can see non OECD countries will play a significant role in this growth. By 2030 non OECD countries energy consumption will be 69% above the 2010 levels.

Countries relying on imported energy are diversifying their supply channels to minimise risk and are they building closer relationships with suppliers.

My former colleague at Santos Peter Clearly was often quoted as saying, “in a carbon constrained world, natural gas has a bigger role to play in reducing power generation emissions and LNG is a key source of this cleaner energy.

For every tonne of CO<sub>2</sub> emitted in the production of LNG in Australia, four tonnes of CO<sub>2</sub> emissions are saved in ASIA, if LNG replaces coal to fuel power generation”.

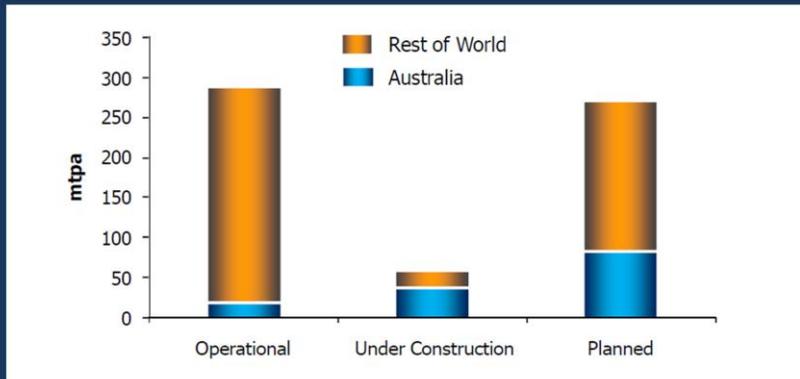
The environmental advantages of natural gas as a major energy source are not fully appreciated as we move into a carbon constrained world.

The USA is self sufficient today in terms of gas and a change in energy consumption from oil to gas will deliver 100% self sufficiency by 2030.

BP state in their Energy Outlook 2030 report, that the largest single fuel contribution will come from gas.



## World LNG Capacity



Source: Santos Asian Roadshow 2011

By 2020 Australia could become a world leader in LNG exports and supply; 10% of China, 30% of Japan's and 30% of Korea's LNG demand.

We are also seeing LNG contracts signed with additional Asian countries such as Thailand.

Australia is the world's sixth largest LNG exporter at approximately 9% after Qatar, Malaysia, Indonesia, Algeria and Nigeria.

We supply 13% of the LNG market to the Asia Pacific region alone.

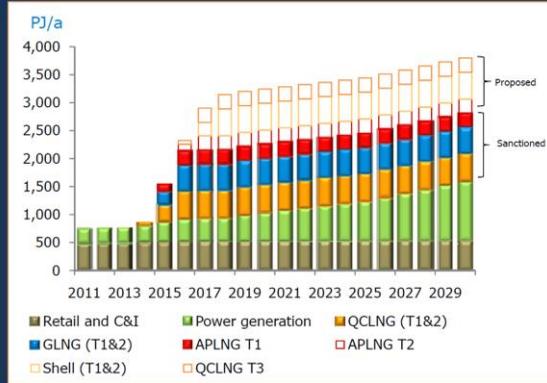
Eighteen countries around the world import LNG and a further seventeen countries have import plants under construction or planned.

Make no mistake Australia is going to create a big impact on world energy distribution within a few short years.



## Supply and demand capacity

- Strong growth in Eastern Australia gas and Asian LNG demand
- Once these plants are operational additional LNG capacity is a real possibility
- New export markets will emerge



Source: Santos, Eastern Australia Business Unit Presentation, 26 September 2011

**Industry observers suggesting gas prices moving toward \$6-9/GJ**

Post 2015 we will see a near doubling in the demand for gas by power generators as a result of the carbon price and emissions trading into the future.

Upwards price movement in local gas supply is critical to the development of a sustainable and profitable gas industry.

Gas has been far too cheap for far too long in Australia.

Australian East Coast gas prices are low compared to other markets in the UK, Europe and Asia.

Some informed commentators are suggesting a price movement towards \$6 to \$9.00/GJ.

**ICON Price Movements**

- LNG spot pricing
- Crude oil indexed
- Growing domestic demand
- Long term contracts
- Relationships v price

Source: Henry Hub / Financial Review

Source: Core Energy Group 2011

The majority of LNG prices around the world are determined by long term contract negotiations, typically with terms of 20 years or longer and this accounts for 90% of all volumes traded.

It is interesting to note the Henry Hub graph (top right), showing spot gas prices in the USA.

In June 2011 the spot price was US\$5.00 and January 2012 the spot price had fallen 50% to US\$ 2.50.

Between February and November 2011 BHP invested significant funds into USA Shale Gas assets, while spot prices fell. Bloomberg reported in early January 2012, “that Chinese, French and Japanese energy companies committed more than \$8billion to shale exploration in the USA”.

On January 23<sup>rd</sup> a few weeks ago, Chesapeake Energy cut Shale Gas production as a result of the lower spot prices.

This is not a 100% upside business as we are seeing in the USA. There are no guarantees despite booming world demand.

The gap between domestic gas contracts and uncontracted demand indicates a bright future for local gas supplies.

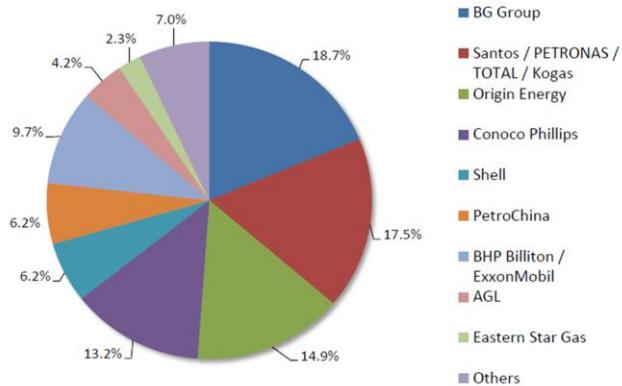


## Eastern Australian LNG Projects

Industry consolidation ahead of production: e.g. Santos/Eastern Star; Arrow/Bow; BG/Drillsearch

LNG proponents continuing to market capacity for additional trains

Australian East Coast 2P Reserves\*



\* Adapted from Energy Quest, February 2011

**80% of East Coast 2P reserves are owned by parties developing LNG projects or with LNG aspirations**

Source: Beach Energy

The industry is in a transformation phase with several mergers and ongoing speculation regarding other mergers into the future, for example the recent Shell/ Arrow Bow Energy merger. Ten days ago the BG Group exercised their option to take up a 9.14% holding in Drillsearch Energy.

I see the consolidation and synergies of assets as critical in maximising production capacity and returns on investments.

This consolidation also allows for additional exploration in areas outside CSG (ie: Shale Gas) while the main game at the moment (CSG) continues with an almost single focus.

Today, LNG proponents or parties with LNG aspirations own 80% of East Coast 2P reserves.

I've often said, isn't this just a real estate business with a finite amount of land on offer for exploration?

Given the expected industry lifecycle of between 25 to 50 years and the commercial returns, is this not a compelling reason to invest in resources real estate?

It is unlikely that any Governments into the future will provide additional acreage for exploration given community concerns in QLD and NSW. I believe what we have to work with today, will in the majority be what we have to work with into the future.

In the USA recent merges and acquisitions have been reported on a cost per acre basis and not necessarily a cost for proven and or probable reserves.



## How did we arrive here?

- Lower greenhouse emissions
- Abundance of gas reserves
- USA exporting LNG to India
- Technical innovation and horizontal drilling

Today, the world is a different place, carbon pricing, emissions trading policies and greenhouse gas reductions are common topics of discussion.

In July 2012 Australia will have a carbon tax of \$23 dollars per tonne for 3 to 5 years before a full emissions trading scheme is introduced and the Federal Government has a target to reduce emissions by 5 per cent by 2020.

The CSIRO estimate Australia has 250 TCF of CSG enough to power a city of 5 million people for 1000 years. We really do have an abundance of gas now and into the future.

The world energy demand and markets are rapidly changing and can move again as quickly as the stroke of a pen on a new contract, not to mention the terrible nuclear disaster in Japan. We see the USA exporting LNG to India and they are rapidly increasing their LNG export capacity.

Energy demand growth is being driven by third world countries developing a middle class and a growing economy.

Innovation and new techniques such as horizontal and multi pad drilling and fracking are unlocking vast gas reserves.

Australia is an attractive trading partner with a free market OECD economy with good sovereign risk, stable political environment and safe shipping channels.



## Why are we where we are?

- Qatar World LNG hub
- Access to Asian markets
- LNG prices linked to Oil
- Strong gas prices underpin new projects

Qatar is seriously being challenged to maintain its lead position in LNG exports, and they have the benefit of being able to ship in all directions.

Australia is near neighbour to the giants of Asia and of course one can't ignore India.

Asia is looking to diversify their supply channels, build relationships and partnerships to ensure long term energy supplies, and we are looking for growing and emerging markets.

LNG prices linked to oil and long term supply contracts underpin the long term financial investments we are seeing in new projects in Australia today.

Domestic gas demand will increase as power generators look for lower emission energy along with an increase in domestic consumption.

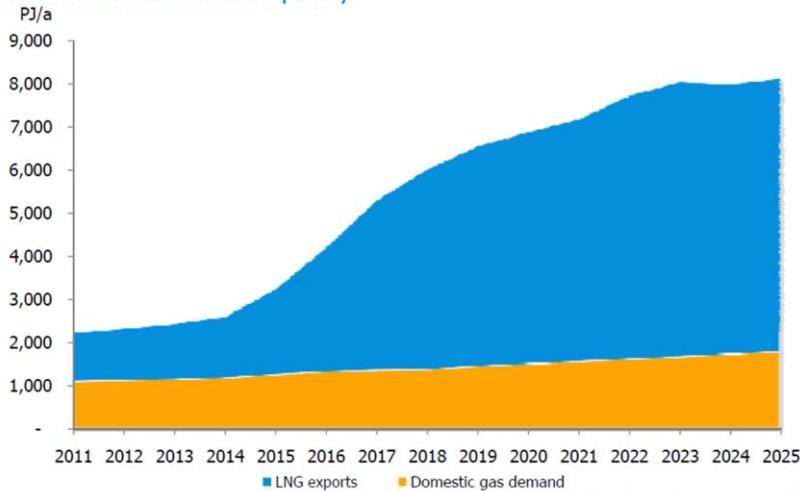
The current gas consumption is divided approximately:

- 30% Electricity
- 32% Industry
- 35% Domestic.



## Strong demand for gas

Demand set to quadruple by 2025; gas prices will trend towards oil-linked international parity



The energy mix for Australia is changing as we enter a period of carbon pricing. Gas fired power stations will become a large customer for long term domestic gas supplies.

Victoria's brown coal fired power stations in the Latrobe Valley are a prime example of this emerging opportunity.

An interesting statistic. Those of you who know Suncorp Stadium know how large the stadium is. If we filled Suncorp Stadium to the roof line with coal the stadium would hold 1 million tonne of coal. In the Latrobe Valley this is a very large hole in the ground and there are those vocal opponents against the gas industry who may like to consider if this is a preferable outcome to the supply of natural gas.

Higher domestic electricity prices will tend to change behaviour, however this will be a longer term outcome. That said, gas is the only viable alternative to coal fired power stations currently available in Australia and I can't see this changing any time soon.

As a nation, while not turning bright "GREEN", we are certainly more aware of the cost of resources such as gas and electricity, not to mention the every increasing cost of domestic potable water.

I've not done the price comparison between potable water and domestic gas, however this may be an interesting topic for another day?



## Brown Coal Fired Power Station



30 Suncorp Stadiums



Loy Yang Power

Loy Yang Power Station in the Latrobe Valley uses 60,000 tonne of brown coal per day, enough to fill about 30 Suncorp Stadiums.



## Shale Gas v CSG Costs

### Shale Gas

- Minimal Community
- ZERO Water
- Higher drilling costs
- What is the true cost?

The questions on everybody's lips including stock brokers, venture capital funds, analysts, world petroleum giants, the media and those of us working in the Cooper Basin is, will Shale Gas be what Coal Seam Gas was in the middle of the last decade? An absolute boom for all involved and it still continues.

Will Shale Gas actually be economical to develop into commercial production and how long will it take to reach critical mass and at what cost?

I see some real advantages in Shale Gas from the Cooper Basin with the ability to direct gas, to Brisbane and Gladstone, south to Port Bonython in South Australia, north to Mt Isa, east to NSW and also to Victoria and Tasmania, this is an undervalued benefit of the basins location and excellent distribution network.

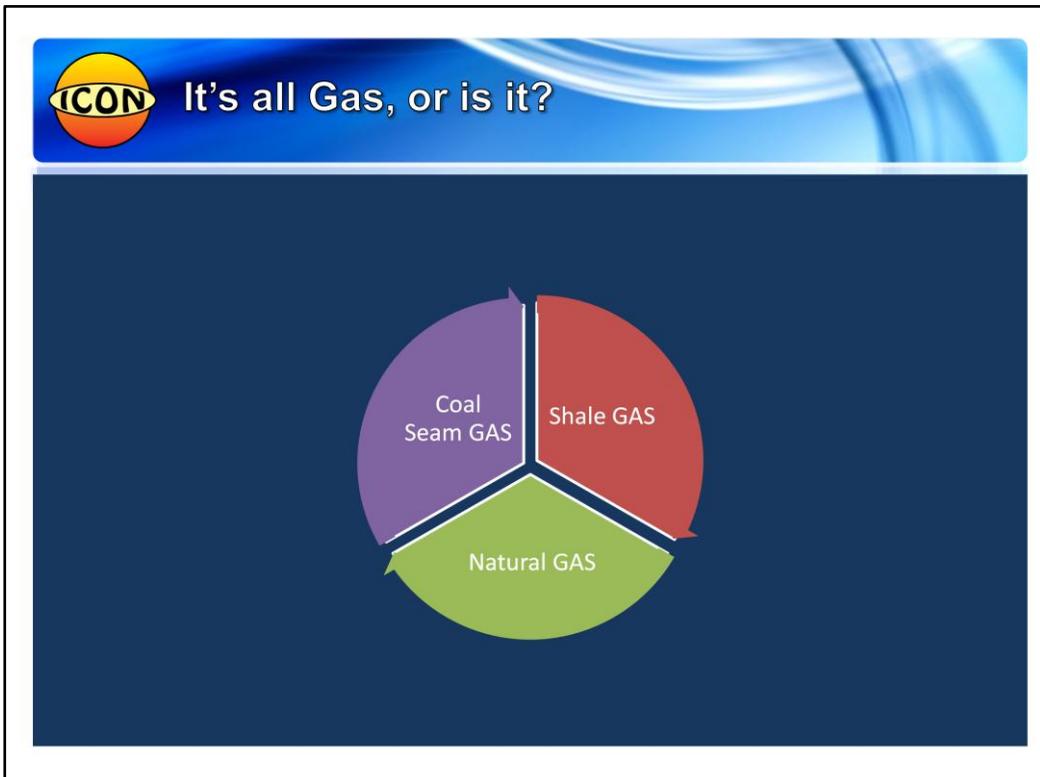
In the Cooper Basin the community of interest is small in number, remote and they have been coexisting with oil and gas exploration for decades.

Water and the direct linkages to CSG are a major community and Government concern. Shale Gas produces minimal water, a great benefit to the environment and financially in that we don't need to spend millions on treating produced water.

The higher Shale Gas drilling costs are offset to a degree by the reduced number of wells that will be required due to the expected increased production curve from Shale Gas wells.

The true costs of producing CSG is a complex question, just what do we include in the costs outside Opex and Capex, royalties etc. Do we include one off social infrastructure, community sponsorships, grants, donations etc. Is this business far too complex to accurately price ( in simple terms ) the cost for a gigajoule of gas at the well head?

How do we ever calculate the true cost of regulation and legislation that continues to grow and become even more complex and expensive?



When consumers use gas to boil the kettle, cook the evening meal or warm the lounge room, it's just gas. Unconventional, Conventional, Shale, CSG and Tight gas are all names for the same product, Gas. Its the source that is different, not the product. I've seen buses advertising they run on Natural Gas and now on the streets of Brisbane we see buses advertising they are powered by Coal Seam Gas. I've been drinking water all my life and one day I'm told, I've been drinking potable water, as far as I'm concerned, its still water and gas is still gas to 99.99% of Australians. Lets not make this too difficult after all we get a GAS bill in the mail.

As Shale Gas is proven to be a viable energy source in Australia, industry must consider how we avoid the linkages with the USA Shale Gas stories that underpinned the factually opportunistic Gasland documentary.

I can recall industry saying over the past year or two, "CSG is not Shale Gas and we are not exploring for Shale Gas in Australia as they do in the USA"

These comments possibly infer that exploring for Shale Gas was or is potentially worse than exploring for CSG.

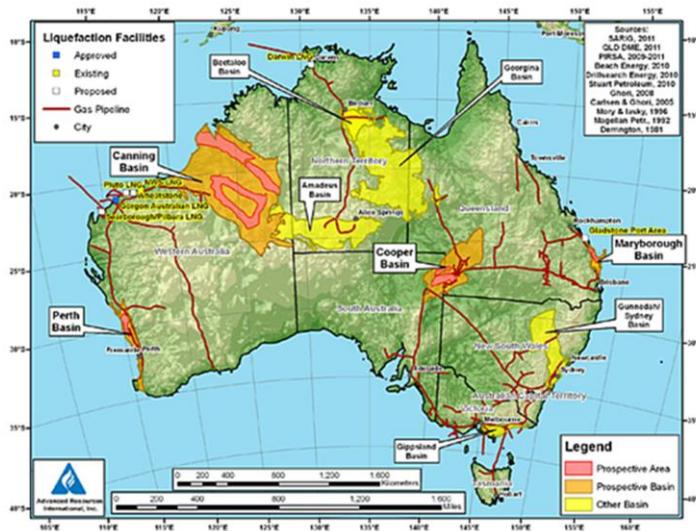
A failure to communicate that Shale Gas exploration in Australia is very different to the USA in terms of environmental regulations, enforcement and legislation, could potentially lead to a refocussed campaign against the broader gas industry.

Strategically, I believe we need to position Shale Gas in a different light and be mindful of public comments regarding Shale Gas and the USA experience as we go about developing Australia's Shale Gas potential.



## EIA Shale Gas Resources

Figure XIV-1. Australia's Prospective Gas Shale Basins, Gas Pipelines, and LNG Infrastructure



In Australia we have Shale Gas in the Cooper, Maryborough, Canning and the Perth Basins.

International agencies such as, Advanced Resources International and the United States Energy Information Administration have stated the true potential of this resource.



# Australian Shale Gas Resources

Table XIV-1. Shale Gas Reservoir Properties and Resources of Australia

Basic Data	Basin/Gross Area	Cooper Basin (46,900 mi <sup>2</sup> )	Maryborough Basin (4,290 mi <sup>2</sup> )	Perth Basin (12,560 mi <sup>2</sup> )		Canning Basin (181,000 mi <sup>2</sup> )	
	Shale Formation	Roseneath-Epsilon-Murteree	Goodwood/Cherwell Mudstone	Caryginia Shale	Kockatea Fm	Goldwyer Fm	
	Geologic Age	Permian	Cretaceous	Upper Permian	Lower Triassic	M. Ordovician	
Physical Extent	Prospective Area (mi <sup>2</sup> )	5,810	1,555	2,180	2,180	48,100	
	Thickness (ft)	Interval	0 - 1,800	300 - 3,000	300 - 1,500	300 - 3,000	300 - 2,414
		Organically Rich Net	500	1,250	950	2,300	1,300
	Depth (ft)	Interval	6,000 - 13,000	5,000 - 16,500	4,000 - 16,500	3,300 - 16,500	3,300 - 16,500
Average		8,500	9,500	10,700	10,000	12,000	
Reservoir Properties	Reservoir Pressure	Moderately Overpressured	Slightly Overpressured	Normal	Normal	Normal	
	Average TOC (wt. %)	2.5%	2.0%	4.0%	5.6%	3.0%	
	Thermal Maturity (%Ro)	2.00%	1.50%	1.40%	1.30%	1.40%	
	Clay Content	Low	Low	Low	Low	Low	
Resource	GIP Concentration (Bcf/m <sup>3</sup> )	105	110	107	110	106	
	Risked GIP (Tcf)	342	77	98	100	764	
	Risked Recoverable (Tcf)	85	23	29	30	229	

February 17, 2011

XIV-2

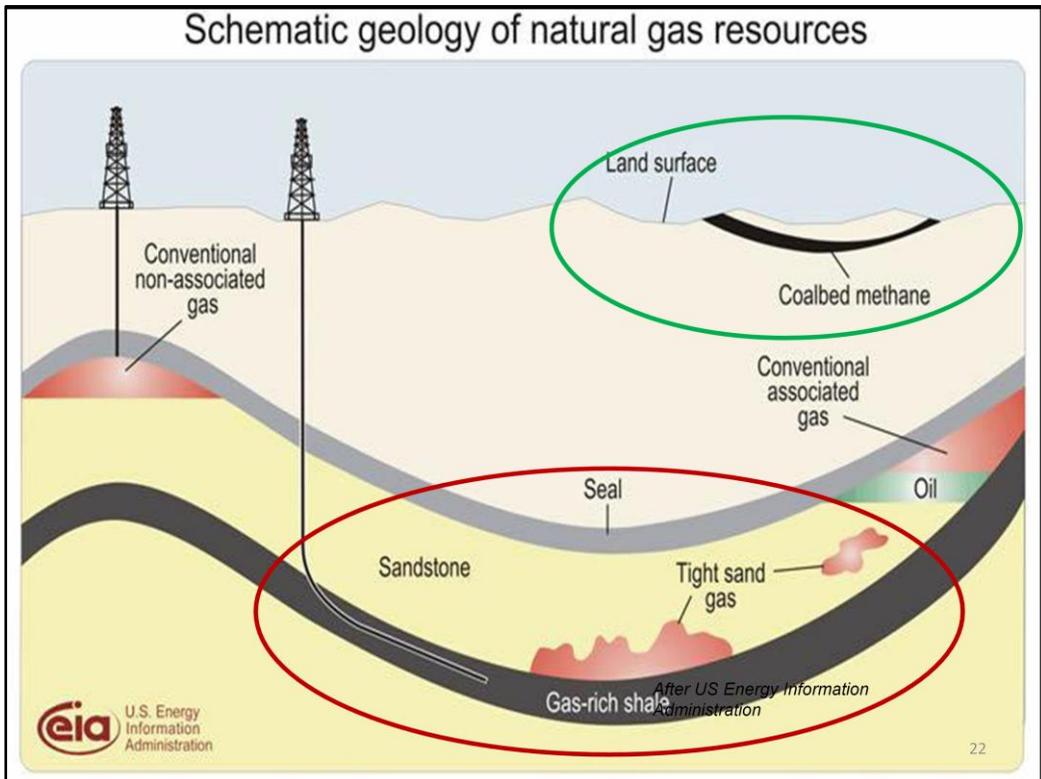


**TCF 85 23 29 30 229**

Advanced Resources International indicate a resource risked recoverable of 229 TCF across the various shale gas basins in Australia.

In the Cooper Basin alone they estimate we have, 85TCF.

When we consider to date only 6 to 8 TCF has been extracted from the Cooper Basin, then the potential Shale Gas reserves can fuel this country's energy demand for generations as well as supply planned or future LNG capacity into the latter part of this century, not to mention supplying gas for electricity generation as coal fired power stations are decommissioned and new gas fired power stations are constructed.



As I mentioned earlier, I'm not a technical person and I'll do my best on the technical aspects in this slide.

We can see that coal seams are relatively close to the surface approximately 1000 mtrs and the on the right and left of this illustration shown in pink, we can see both conventional structures and stratospheric traps where oil and gas are trapped in reservoirs.

These areas are small by comparison to the Shale Gas structures shown in black at the bottom of this slide.

The deep Shale Gas opportunities are at depths of up to 4500m or 14,700ft and NSAI will certify gas reserves to this depth.

At this depth the size and horsepower of the rigs required to drill for Shale Gas makes for a challenging commercial decision. These wells are not cheap.



## Shale Gas as an LNG Source?

- It will happen
  - slowly at first
  - driven by innovation
  - first multi-well pilots in operation 2014
  
- We will be surprised by
  - better reservoir performance
  - better-engineered completions
  - drilling and completion costs will halve



Source: Santos

Yes, Shale Gas will be delivered to LNG trains in Gladstone and its already included in the supply calculations for at least one mega project.

Like all new supply chains they come on line gradually and this will be no different as Shale Gas is used as a source to meet contractual LNG obligations.

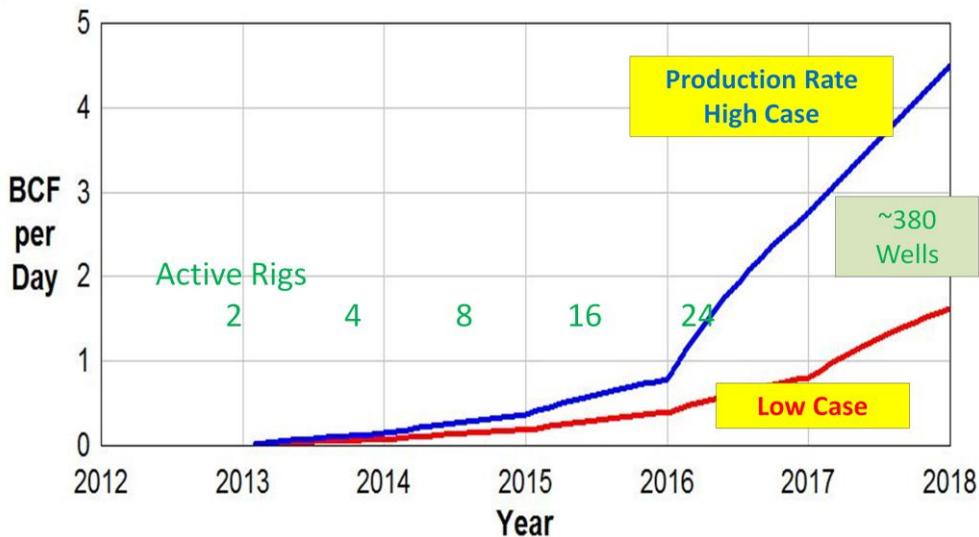
Innovation is the key to unlocking the Shale Gas potential, as drilling to depths of 4500 meters is extremely challenging, high cost and we are looking for high rewards.

Technology is moving rapidly to provide new options and solutions, however we must continue to strive for leading edge cost effective outcomes.

Drilling multiple wells from a single pad reduces costs, improves efficiency and minimises the environmental footprint.



## Rigs and Wells = Production



My thanks to Robert Johnson our Reservoir Engineer for his understanding of the industry and his assistance in preparing the technical slides in today's presentation.

To deliver the gas reserves required to fulfil contractual obligations both now and into the future the volume of drilling and exploration is large by any comparison.

Robert has provided a best estimate as to the number of rigs and the out years as an example of gas delivery. This slide does not reflect what may or may not be happening in Shale Gas drilling today or take into consideration higher production rates that may be delivered by improved fracking and new technologies.

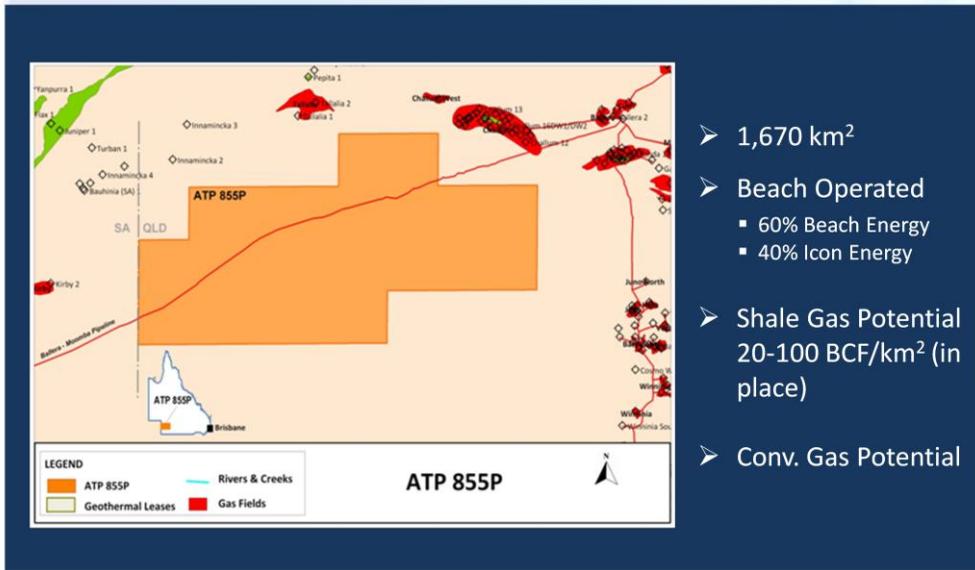
The Australia wide snap shot is, possibly 380 wells drilled across Shale Gas reserves and this is vastly fewer wells than required to supply similar production flows of CSG.

The doubling of rigs per year is a natural extension towards maximising the reserves potential and we could have run a number of rig multiples against production curve increases.

Obviously the more rigs equal the more wells and the higher production of gas.



## Icon and Shale Gas – ATP855P



Icon Energy have a 40% interest in ATP855P covering 1670 sq km or 412,673 acres. This is located in the highly prospective Nappamerri Trough in the Cooper Basin and the adjacent block in South Australia PEL 218 covers 1,600 sq km or 395,000 acres.

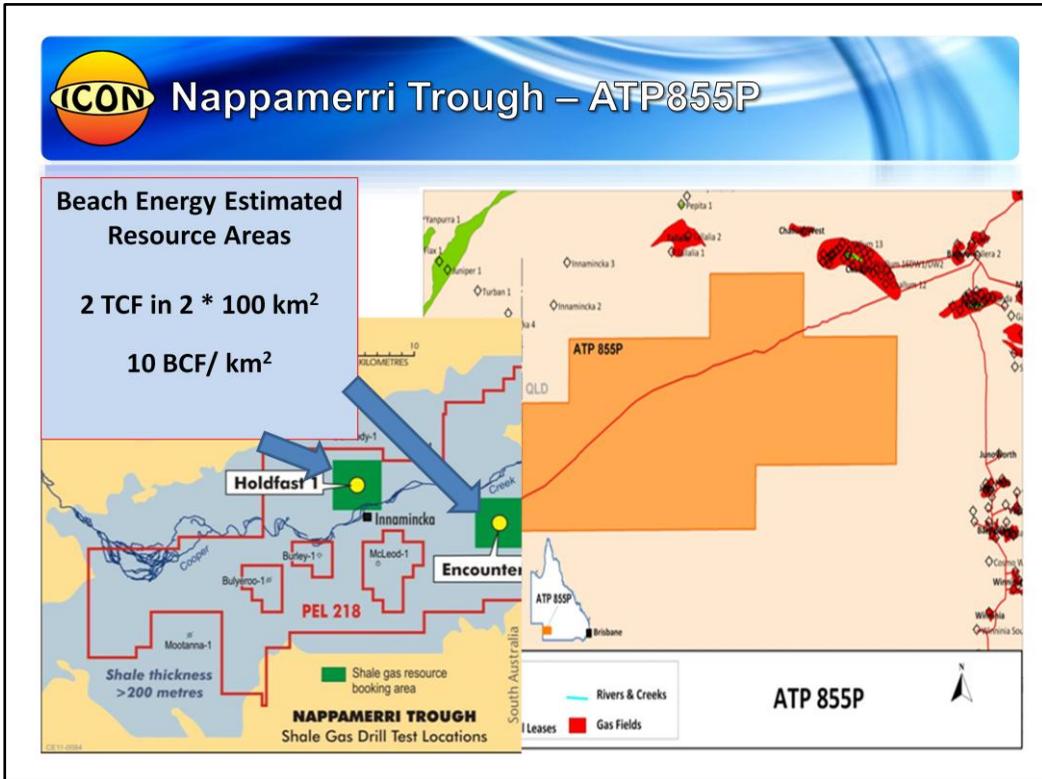
The Independent United States Energy Information Administration's World Shale Gas Resources Report (EIA Report) has placed the shale gas resource potential in the Cooper Basin as a whole at 342 TCF of gas, with the recoverable equivalent at some 85 TCF.

Icon Energy sought to utilise Beach Energy's shale gas drilling expertise as the operator in ATP 855P, following their successful drilling of Encouter-1 and Holdfast-1 in the adjacent PEL218 tenement.

The operator has secured the Ensign #65 drilling rig to drill a horizontal pilot unconventional production well and we understand the Ensign #65 rig, a new 1,500 horsepower rig, will arrive in Australia from North America in April and will be ready to commence drilling by no later than June.

We will be drilling a well to the base of the shale section and then selecting a horizontal lateral extension of the well for 1600 metres and completing the well ready for fracking.

At Icon Energy we remain very excited about prospects of our first Shale Gas well in ATP 855P.



In the adjacent block to ATP 855P, Beach Energy have booked 1TCF from each of the two wells, Holdfast 1 and Encounter 1 drilled in PEL 218 on the South Australia side of the border.

This is a very encouraging result for Shale Gas exploration in the Cooper Basin and as I have just mentioned, we are looking forward to the program in ATP 855P.



## Gippsland Basin Victoria

- PEP 170 and PEP 172
- Drilling and seismic program 2012
- Located near major infrastructure
- Located near to coastal ports



In September 2010 following a competitive bidding process, the Victorian Department of Primary Industries granted Icon Energy a new petroleum tenement.

PEP 170 is located to the south of Lakes Oil's 2009 "Wombat" discovery.

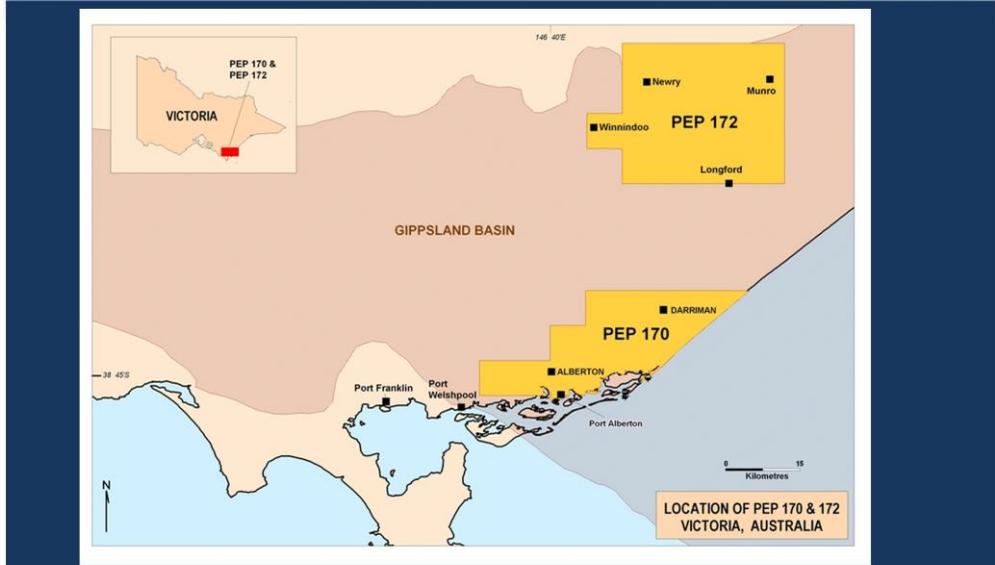
In August 2011 we were granted an additional tenement PEP 172 to the north of PEP 170.

North of PEP 170 there is significant infrastructure for the distribution of gas and the Port of Corner Inlet and Port Albert, which is located less than 70km south of PEP 170, is the largest water area of the Gippsland Ports.

These Ports along with Barry's Beach provide options for the distribution of resources.



## Gippsland Basin Victoria



In PEP 170 we have been busy completing the Operational and Environment Management Plans in anticipation of drilling two wells in the first half of 2012, and we are on target to achieve this timeframe.

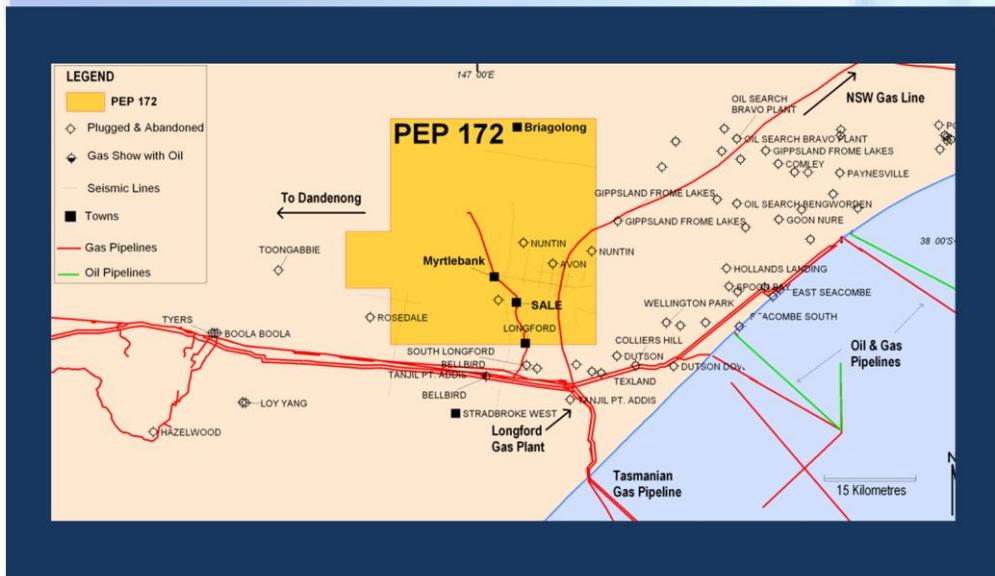
Our technical staff have assessed PEP 170 and are of the opinion that it is highly prospective for tight gas, which could be produced commercially with the right development options.

PEP 170 is also prospective for oil in the shallow La Trobe Group, which is the oil reservoir found in the offshore producing fields in the Gippsland Basin.

Along with our exploration in ATP 855P we look forward to the results from our first two Victorian wells.



## Gippsland Basin Victoria



In August 2011 we were informed that Icon Energy were the preferred tenderer for PEP 172 to the north of PEP 170.

Currently we are in the process of negotiating an Indigenous Land Use Agreement (ILUA) with the Gunaikurnai people.

Both PEP 170 and PEP 172 are located near to one of Australia's major oil and gas processing plants, Exxon Mobil's Longford plant.

PEP 172 is ideally located to take advantage of the gas distribution network and gas can be distributed north to New South Wales, east to Melbourne and across the Tasman Sea.

Once we have been granted the tenement by the Victorian DPI and secured the ILUA, we are committed to spending \$1.25 million for 200 kilometres of 2D seismic.



## Challenge 1- Critical Mass



Industry faces a number of challenges if Shale Gas is to be successful, including the cost of drilling, rig availability and the necessary infrastructure to accommodate growth in the Cooper Basin.

Unfortunately, we are not operating in a highly competitive market when it comes to rig availability, pricing and contractual arrangements.

In the USA there are literally thousands of drilling rigs available and competitive day rates not approaching the \$60,000 per day we are asked to pay here in Australia.

Competition drives price competitiveness and improves the overall outcome, a sadly lacking ingredient at the moment.

Will we see new rig suppliers entering the Australian market, we hope so and soon.

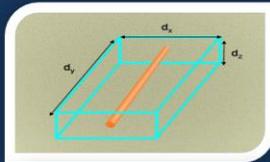
Geodynamics who are drilling for geothermal energy have the 2000 horsepower “Lightning Rig” capable of drilling to 4500+ metres, the depths that Shale Gas can be found.

Again the costs involved in fracking are not as competitive here as they are in the USA. Mobilisation costs are expensive components in drilling programs and along with most other activities these costs seem to be escalating rapidly. Don't get me started on the escalating legal fees for land access and compensation agreements.

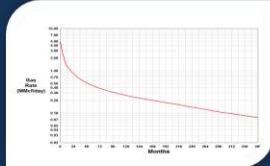
A large issue facing all resource sectors is the skills and labour shortage. This will be one of our main challenges as the world is experiencing an increased demand for specialised operators within the resources industry. Managing this labour shortage is critical to the timely delivery of gas supplies. The skilled workforce is currently available in America and Canada and I'm confident we will see some of these workers working in the Cooper Basin.



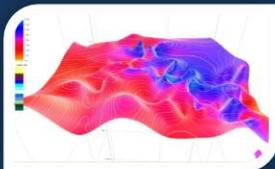
## Challenge 2 - Economics



Booking Reserves



Production Forecasting



Finding Sweet Spots

As companies drill for Shale Gas in the Cooper Basin no doubt ASX announcements will be made to the market regarding the booking of reserves. Other companies who may not be at similar stages in their development program will be very encouraged by this news. Once additional reserves are booked the Shale Gas story will be a very different and engaging story.

As I said earlier, analysts, stock brokers, venture capital companies, and potential JV partners will be running the slide rule over the industry with a different perspective.

The economics of Shale Gas are interesting. A CSG well produces a large amount of water from day one and then proceeds to flow gas up the production curve. A Shale Gas well flows gas in volume from day one and tapers off after about 24 months and has a very long declining production curve.

Multipad drilling on a scale we may not have seen before and multiple fracs will be aimed at targeting the sweet spots in the shale deposits along with the very best in geology and science.

The economics are simple, there are today's costs, tomorrows lower costs and forever lower costs!





**Innovation is the Key**

## Innovation and Creativity

Business / Business Partnership Models	Business / State Government Partnerships	R&D to drive down drilling costs	Importing of ideas from other industry sectors	Subsurface techniques for rapid focus on sweet spots
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*The GT3000*  
is designed to drill at double the speed and  
with a third of the required equipment  
compared to conventional oil and gas drill  
rigs drill rigs of this capacity...

[Read the full article](#)

Closer relationships, collaboration, knowledge sharing and keeping a watchful eye on the exploration developments in the USA will provide us invaluable insights to the latest in drilling techniques and operational efficiencies.

The number of Australian gas employees travelling back and forward to the USA learning about new well designs and the evolution of shale gas is a real demonstration of the industries commitment to see Shale Gas reach its full potential.

Our relationships with all levels of Government will need to grow and be built on the timely exchanges of information and our ability to deliver the environmental performance not only expected by Governments and community, but an environmental performance built into the way we operate.

As an industry we must strive to exceed what we say we will do and we must grow our social licence to operate at every opportunity.

Will Shale Gas happen,



## Shale Gas as an LNG Source?

No question,  
with the  
right  
combination  
of

- vision
- commitment
- a rock steady nerve
- deep pockets
- investment in people

In the words of the Morgan Stanley analyst  
*Grab a Surf Board ...*

No question with the right combination of

- Vision
- Commitment
- A rock steady nerve
- Deep pockets
- Investing in people

Grab a surf board, and enjoy the ride.



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Shale Gas is the next GAS frontier,

THANK YOU