Attention IPC

NARRABRI GAS PROJECT

I have already sent this submission by Email, but I thought it would be easier for you if I sent a hard copy

Yours sincerely

GREG ROBERTS OAM

[redacted]

I do hope you have time to study my submission. I have spent a huge amount of time researching & putting it together. I realise, of course, that you will be under a lot of pressure to read all the submissions.

Best wishes

6 August 2020

Submission Regarding Santos CSG and the Pilliga –

The Narrabri Gas Project

Executive Summary

1 **Address to the IPC Friday 24 July 2020 (No. 253 – Day 5) –** opposing the Santos Proposal to mine Narrabri/Pilliga for Coal Seam Gas **(Attachment 1)**

2 **Preliminary Statement**
We do not have the right to mine

3 **Submission**
The Santos proposal to mine for CSG in the Narrabri/Pilliga area must not be allowed to proceed.

4 **Do we need more Gas?**
We don't. The Concerns regarding Gas – note AEMO's 'Integrated System Plan'

5 **Environment – the risk of mining is too great**
The Environment is critical to life. Destruction can never be reversed

6 **Environment –the Water**
The risk of damage and pollution is absolutely unacceptable.

7 **Environment – the Land**
The land is for Food Production -forever, not for destruction by mining

8 **The People – Social and Health**
The serious risk of destroying the community for very few jobs, and the accompanying health risks – completely unacceptable.

9 **Environment – the Waste**
No credible answers from the Santos CEO Day 1 of the hearings

10 **Gas – worse than Coal**
Methane gas makes it worse

11 **The Future**
If approved, a precedent will be set to mine the NW area

12 **Conclusion**
We really do have to think about our planet Earth

1 Address to the IPC Friday 24 July (No. 253 – Day 5)

(See attachment 1)

2 Preliminary Statement Fundamental to this Submission Regarding Coal and Coal Seam Gas Mining in Australia and in Particular New South Wales

The basis of my submission is that we, Governments, the IPC, the Land and Environment Court, the people who presently occupy this great country of ours, and for that matter all the decision makers throughout the world, must not make decisions that could, in any way, possibly have a negative impact on the Environment - the land, the water, as well as on the people (our children, our grandchildren and future generations) and their communities.

We do not have the right to make these decisions!

It's a simple statement, but possibly difficult to implement 100%, mainly because of our very well developed culture of greed and selfishness. We are in the business of going 'hell for leather' chasing every opportunity to amass wealth, including ripping out every saleable piece of our land – coal, CSG, iron ore, other minerals.

As they say – 'we've had it good – we're still having it good! Why should we change?'

The fact is that every intelligent and thinking person will concede, our land and its natural resources have clearly been depleted and continue to be depleted over a relatively short period of time, and it would be absolutely irresponsible of us to allow this to continue. This is particularly applicable to fossil fuels, with their impact on the climate.

Further, and critically, if we are to meet our obligations to achieve the emissions target of 'Zero emissions by 2050', now 2040, we are advised, we must leave all fossil fuels in the ground.

At this point of time, our land and water are **not** in good shape.

We are simply not leaving our country of Australia in better shape for our children, grandchildren and future generations. We have to change our actions and start to preserve what hasn't been exploited, and to rebuild and conserve our land and water resources that have been exploited and damaged.

It is not possible for us to argue otherwise.

We owe this to the generations that will follow us.

If we continue in our greedy and selfish ways, we will be dead and buried, leaving our children and grandchildren to try to make the best use of whatever has been left, cursing us for our selfishness and greed!

And we will deserve their curse!

Hence the statement above.

3 Submission

Based on the statement above, the Santos Pilliga proposal must not be allowed to proceed.

And, for that matter, no further coal mining, CSG mining and water extraction (for coal and CSG) should be allowed to proceed.

All existing mining must be managed very carefully, first to provide for the needs of the population, including the industry that supports it, **while we transition very quickly to Renewable Energy;** second, to satisfy the legal obligations of existing contracts; and third, to ensure that all these mines, once their existing leases run out, return the land to its original condition (which sadly we know is impossible).

Certainly not to allow new mines to open.

The mines that are creating, or could create, serious problems must be closed – a recent example being the Peabody Energy mine under the Woronora Dam, where significant water loss is occurring. The NSW Government has stopped mining activity and demanded that the leak be fixed, before anything further occurs (it is probably quite likely that this will not be possible).

(See letter – Attachment 2 - to this point – to Minister Rob Stokes MP Pittwater 8.7.19, incorporating a warning on this).

(28.4.2020 – I now understand that this mine has been given permission to continue mining under the dam – the madness and irresponsible behaviour continues – led by the NSW government under pressure, presumably, from the miners!)

The greed for more and more wealth, as a result of more and more mining must be stopped, and that will be a real challenge.

Yes, of course it may affect our GDP, our Balance of Payments and possibly our standard of living – for a while.

But my point is, if our Governments are to responsibly manage our country for this and future generations, which is their obligation – their duty-of-care, then there is absolutely no alternative – it is a very serious Environmental and Social issue – with a high degree of morality attached to it.

Add this to the challenge of climate change, contributed to by digging up and burning fossil fuels, and we give our future generations a terrible problem.

The promising and important thing is that there are solutions being put on the table.

But first –my serious concerns about the Santos proposal …

4 Do we need more gas?

The Prime Minister 'has struck a $2 billion deal with the NSW Govt to increase gas supply and reduce greenhouse gas emissions'. He says this deal will reduce both energy bills and emissions.

My understanding is that the opposite is the case – energy bills will not go down – they could well go up.

I ask, where is the evidence, the numbers to show that energy bills will reduce? I hope the IPC will have them. I question whether they exist.

Prime Minister Morrison (Guardian 31 Jan 2020) 'told reporters in Sydney the $2bn could be spent on "clean technology" including Hydrogen research, energy efficiency measures, and "coal innovation to commercialise and employ technologies to reduce emissions from extraction, preparation and the use of coal" – whatever that means - precisely what does it mean?

The $2bn to NSW contains very little for renewable energy! - Nothing for wind and solar. There is money, apparently, for strengthening the grid.

Actually, the input from the Federal government only adds up to $960 million! - ($510m of this probably loans to NSW) – the remainder, $1.01bn, has to come from the NSW Government. Where is the money for the grid, let alone what the PM says is covered? - anyway, there clearly isn't enough money to do all the things in the amount offered by the Federal government. I suspect this is not enough for even the 'hydrogen research'.

The other part of the 'deal' is that the NSW Govt. is obliged to drill for CSG.

Premier Berejiklian said 'to drill 900 CSG wells , including within the Pilliga State Forest" may very well be" the source of extra gas and "will meet" the requirement' although she noted the project is still subject to final approval.

I note that there is no mention of drilling in the food productive soils in the Narrabri area!? - although that is what is planned to happen.

It also says to me the Govt has already signed off on it, regardless of the serious independent work that the IPC will be carrying out.

Anyway, CSG from Narrabri/Pilliga is not needed:-

1. The East Coast gas market has plentiful supply, but 70% is exported as LNG through Gladstone. Government action can ensure supply for NSW.
2. The least cost supply is by diverting gas from Queensland by pipeline to NSW.
3. There are two potential LNG import terminals in NSW - Newcastle and Port Kembla. The Port Kembla terminal is approved.
4. Additional gas is being developed e.g. in 2019, Santos added to its Cooper basin reserves, the traditional source of supply for NSW, more gas than it produced.
5.The gas forecast used is overstated as it does not allow for a planned transition from gas to renewables as will be required by NSW's Net Zero plan

The Concerns Regarding Gas

I now refer to the article in RenewEconomy by Mr Giles Parkinson – 30.1.2020

'Morrison is dangerously wrong on gas, and needs to wake up to new technologies'

Mr Morrison - "There is no credible energy transition plan for an economy like Australia in particular, that does not involve the greater use of gas as an important transition fuel," Morrison told the National Press Club in a speech on Wednesday (Jan 29, 2020).

Mr Parkinson (RenewEconomy) responds "Wrong, completely wrong. And about as misguided as Morrison's decision to bring that lump of coal into parliament, and as ill-informed as his remarks on big batteries and EVs.

"One such plan has already been delivered to his government, and largely ignored. And to underline the point, just that morning, AGL – the utility that is defying the government by daring to close down its ageing and clapped out Liddell coal fired generator – signed up for what will be the country's biggest unsubsidised battery storage installation.
It's a significant move – batteries are still at a relatively early stage in Australia, but the country's utilities are quickly catching up to developments in other countries, particularly in the US where major utilities are snubbing gas fired generators in favour of cheaper wind, solar and storage.

"And in the US, unlike Australia, gas is cheap. Yet the likes of NextEra are saying the wind, solar and batteries will soon beat new and existing fossil fuel sources like coal, gas and nuclear. AGL has caught on. It doesn't like spending its own money, but it has already contracted for five such big batteries and has more in the pipeline.
Alinta Energy is another big fan, seeing a sub 5-year payback for its unsubsidised big battery in W.A. So too, are Infigen and Nexif."

Australian Energy Market Operator (AEMO)
Parkinson continues – "One authority that has recognised the possibilities of the new technology, and to whom Morrison should be paying close attention, is the Australian Energy Market Operator, whose job it is to keep the lights on".

So, I would hope, should the NSW Govt. and the IPC, in judging the acceptance or not of the Santos/Pilliga proposal, be recognising the promise of the new technology – and frankly I would believe AEMO , well above Mr Morrison.

Parkinson "To ensure this happens, at the lowest possible cost, AEMO has delivered a highly credible transition path to a low carbon grid in its Integrated System Plan, which provides a 20-year blueprint for what needs to be done to best manage "business as usual", or even a "step change" scenario where policy makers finally get serious about climate change.(End January 2020)

"In each of the five scenarios that AEMO contemplates in its ISP, **gas gets to play some role – but it's no greater than it does now and in most cases considerably less.** It's just the

latest blow to the gas-marketing industry's talking points of a "golden era" as a transition fuel. It's just not going to happen.

"In the "step change" scenario, **which delivers a near 90 per cent share of renewables in two decades, and a similar reduction in emissions in the main grid, AEMO sees gas playing only a minor role, particularly if enough planning is done, and infrastructure built, to accommodate the wind and solar and storage that are both cheaper and cleaner than gas."**

In the recently released updated final AEMO Integrated System Plan, it is even more favourable to Renewable Energy -- Do nothing gives 74%, Step change gives 94.2% - and many other points.

So, do we need more gas – clearly – no!

(see the article on the recent updated Plan by RenewEconomy - 30 July 2020 – **Attachment 3)**

5 The Environment - The Risks of Mining CSG in the Narrabri/Pilliga Area

Minister Rob Stokes always says – the **Environment** is the **most important** of the three. Economic and Social **come under the Environment**.

Everything in this Santos proposal has an environmental impact, potential, probable, and absolute, regardless of what Santos' consultants may say.

The CSG mining, if approved, would carve up a significant section of the wonderful Pilliga forest, the largest temperate woodland left in Eastern Australia. The damage to the forest would be huge.

The inevitable spillage would destroy the ground (see photo, 10 years after spillage – still not recovered - below).

It is clear that the destroyed land could never be recovered, and we would leave yet another environmental disaster to our children and future generations.

The Environment is critical to life and, in this case, certainly critical to the farmers (agriculture and animals) and the community in the Narrabri area, and everyone in NSW who relies on water from the Great Artesian Basin.

Plus of course the native wildlife – let's not forget this critically important issue.

6 The Environment - The Water

Article Sydney Morning Herald – June 22-23 , 2019

I refer to the SMH article by Peter Hannam – June 22-23:- and it is deeply worrying.

In the article Minister Stokes says "In NSW we make no apology for having robust and thorough processes for major projects which have significant implications for the State, its people and its resources".

And that is very good. Taking 'Water' as an example, I read through the letter from Rachel Connell to Mr Steven O'Donoghue (9 Oct 2018) with its 23 requirements of Santos – illustrating clearly a very thorough and demanding process.

The worry for me is that many of the requests are linked to 'models', and 'predictions'.

You cannot make safe decisions on predictions! – you simply can't!

Also, unless I have missed it, there is no reference to, or concern for, the Environmental and Social impacts. And that's a major issue.

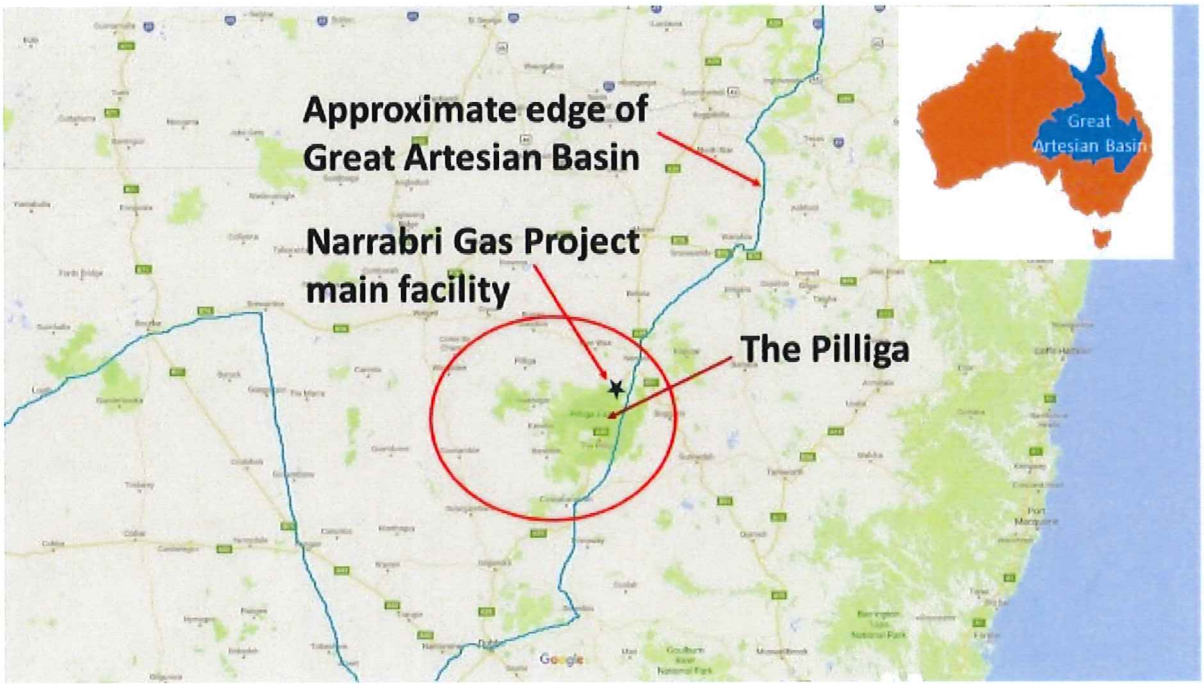
The drought and contamination

The drought is not over – after 6 or so years , we've at last received some good rain in most areas of the State. But the drought has not ended, and it is very likely to continue on, with bursts of rain from time to time.

According to the NSW Government, NSW is still 99% drought affected!

(See **Attachment 4**)

The area for the proposed mines sits above the 'recharge area' of the Great Artesian Basin and in the Namoi catchment, so there is the risk of contamination, not only of the soil and surface water, but also of the ground water beneath – see map below.



No consultant will ever give a guarantee that this will not occur, as referred to above.

Please note the Geologist (Day 1 I think) who said "I don't know much about CSG, but I know a lot about geology", who then proceeded to define what would happen in drilling through the layers of rock and shale – terrifying! Please read.

So the Narrabri Gas project, if it were allowed to go ahead, would risk polluting the groundwater that sustains farms and communities across inland Australia!

Polluting the Great Artesian Basin – that, in itself, would have to be enough to refuse this Proposal!

<u>Water withdrawal</u>

The Santos proposal asks for the withdrawal of some 37 billion litres of water from the coal seams below the Great Artesian Basin, which would further lower the water table, lowering pressure, which has apparently been happening for a long time now.

Bearing in mind the drought, as referred to above - who in their right mind would permit this to happen – with towns, in recent times, close to running out of water – or having water shipped in. And agriculture at a standstill in a number of areas because of the lack of adequate water, and other areas likely to return to drought.

How could the Government possibly approve what would be a very significant amount of water, when, as we are all well aware, dams and rivers were drying up all over the land? Certainly we have received some rain – but the country is still in drought!

It would be sheer and utter madness!

How could the governments, both NSW State and the Federal Government, be so irresponsible?

Or is the Government simply not concerned about the impact on the available water in its preference to support miners and their mines!?

7 Environment – the Land

I read several months ago that Mr Simonian (Santos) cautioned political leaders from "over regulating" the project, which is clear to me that he is only concerned about the business aspect. He goes on to say "gee whiz, we have so much land where we can (explore to extract the gas) that is not critical ...such as Narrabri which is scrubland".

Would the farmers agree with that? Clearly they don't.

The area surrounding the Pilliga is very productive farming country, producing sheep, cattle, wheat, barley, chick peas, cotton and feed crops. The Great Artesian Basin is crucial for livestock producers, not crops as it is mostly too salty for irrigation. But wells and pipelines on cropping properties make farm management extremely difficult as machinery can't cross pipelines and any spills of water from the coal seam make soils unproductive (as photo above). The pipelines are also through Aboriginal sites.

It is against the wishes of both the landholders and the Traditional Owners.

So the **Environmental, Economic (food production) and Social** aspects of the Narrabri area are clearly disregarded in the thinking of Mr Simonian and Santos.

We know very well that none of these coal and CSG mining companies, or their consulting experts, will ever say that the land and the water will **not** be negatively affected. They will never state that any mining process, especially where there are water tables, is 100% safe from damaging the land and the water!

So, if there is the slightest possibility that the water and the land may be negatively impacted, then, thinking not only about our generation, but thinking on behalf of the generations that will follow us, including, presumably, Mr Simonian's, the CSG mining must not go ahead (as set down in the Fundamental Statement at the start of this document).

Example - the Shenhua Proposal

The research worry was the same as the response I wrote some time ago, critiquing the Shenhua mine proposal research document that was provided to me. It was the most appalling piece of so called research I had ever seen – full of vagueness. No satisfactory and conclusive results that signalled that Shenhua could proceed, causing no negative impact on the land, water and the people.

So, as I have said a number of times before, and will continue to say, we **do not have the right to make decisions that could possibly negatively impact the natural resources of NSW, and Australia for that matter, for future generations – Environmentally, Economically and Socially.**

I ask - is the IPC guided by the point that Minister Stokes has always made, and correctly – that **Environment** is the most important aspect, and that **Social and Economy fit under Environment?** Or does it regard **Economy** as the driver on decision making?

Adding to that, in the article by Peter Hannam, - 'Santos appeared to be applying Political pressure to avoid a slew of objections from NSW agencies and Narrabri Shire Council. The company is trying to "intimidate Planning" and other agencies into giving its project the nod', circumventing scientific issues ranging from ground water impacts to emissions and salt waste disposal', according to Georgina Woods of 'Lock the Gate' .

How does the IPC handle that pressure?

8 The People – Social and the Impact on Health

Social

As mentioned, no comment is made regarding the people who live and work in this wonderful piece of the country. For the Gamilaraay people, it is sacred.

There would be a serious risk of damaging or destroying the Narrabri community, just like the other areas that have been damaged or destroyed

For example, in four years, Chinchilla, a similar sized town to Narrabri, went from a prosperous rural town, to a booming gas mining town, to a welfare town with high levels of unemployment, crime and drug addiction. In 2018 houses were being sold for less than a 1/3 of the build cost.

Why would Narrabri be any different?

Jobs

So, what about jobs? - we know CSG mining won't result in many jobs by comparison. We know that for every job created in the CSG industry in Queensland, 1.8 jobs were lost in agriculture and 0.9 jobs lost in the service industry (*Local economic impacts of an unconventional energy boom: the Coal Seam Gas industry in Australia. Australian Journal of Agricultural and Resource Economics. January 2014).*

A great deal for Santos and its owners - a terrible deal for NSW, and Australia for that matter, and its people!!

The Santos CEO, in the hearings, talked about 400 new jobs. A social expert, addressing the Commissioners, looked at the numbers and said '40 new jobs, **plus** a lot of social problems'.

So, no justification to tear up the Narrabri/Pilliga for that

I ask – what numbers of jobs did the Government have in mind to cause them to support the proposal? Or, did they just agree with Santos!?

Health

Here is an excerpt from an article by Dr David Shearman AM FRACP emeritus Professor of Medicine, University of Adelaide **(Attachment 5)**

'The production of gas in Australia is a health risk and, as with coal, the health impacts become simple externalities ignored by government for political expediency; one should ask why health studies in gas fields have not been studied significantly in Australia as they have in the US.

"In the United States where rapid and expansive development of gas and oil fields has occurred in close proximity to residential areas, over 1800 papers with a substantial body of research findings have been published. A review of these studies shows that proximity to gas development risks low birth weight infants, pre-term births, congenital heart disease and other congenital disorders, cancers and blood and immune diseases in children.
'Health and water security concerns cause stress to residents in Queensland's vast gas fields and for the proposed and for the proposed Narrabri, Northern Territory and Western Australian developments. Clearly there are legal and insurance implications for industry and governments allowing these risks to proceed'.

Further:-

Dr Melissa Haswell, Professor of Health, Safety and Environment asked "Research has linked a higher prevalence of harmful birth outcomes – for example neural tube and congenital heart defects, pre-term births and lighter birth weight – among women who live close to gas operations during pregnancy.

A list of these studies is available here. I would like to know how Santos has analysed these risks and what the company is doing to communicate the findings of these studies and eliminate these risks to pregnant women, infants and children living near Santos operations?"
In view of the significant and disturbing body of evidence from the United States about endocrine disrupting activity linked to a mixture of 23 chemicals commonly found in the vast quantities of wastewater produced during operations, Dr Haswell also asked;-

"Please explain in detail how Santos will be monitoring and eliminating potential exposure of residents and workers to chemical mixtures with endocrine disrupting potential known to be present in wastewater as well as air?"

With regard to these health studies, we noted in a previous article "Clearly there are legal and insurance implications for industry and governments allowing these risks to proceed"
Also in relation to a question on possible impacts on food asked at the AGM, has the company estimated what scale of liability it faces with no suitable insurance products available from unexpected environmental damage from the Narrabri gas project?

Santos is in denial over these findings but the whistle has now been blown and they are accountable for any dismissal of the firm evidence for these dangers published in the scientific literature and it would be financially prudent to prepare for them.

All this is completely unacceptable, just as it would be completely unacceptable if the mining were proposed in the suburbs of Sydney.

It is truly scary to think about the organisations including, sadly, both the Federal and State Governments, that are seemingly happy to allow miners to invade and potentially destroy communities – regional communities that is! – not suburban areas, of course.

I can understand the motivation of organisations like Santos, driven by greed. I cannot understand the Governments, who have a prime duty-of-care to its citizens.

Totally unacceptable!!

9 The Environment – the Waste

As we know, the CSG mining process produces lots of nasty chemicals and very large amounts of salty water. This is increased when 'fracking' is used,

So, very importantly, how does 'Santos plan to 'dispose of the estimated 430 - 500,000 + tonnes of salt and nasties? – **safely!**

My understanding over the years is that nobody has worked out how to dispose of the salt (and the other nasties) safely. The thought of the EPA finding out the capability and capacity of Santos to locate the salt in a 200 K radius responsibly and safely ie without destroying more land, vegetation, and water is, I am assured, an impossible task.

I ask - have they worked this out? They have not! **Santos has no safe disposal plan.**

The comments from the CEO on Day 1 of the hearings in relation to disposing the waste safely were totally inadequate. Nothing is pre –organised and locked down

Vague - total waffle! **And this is a critical aspect!**

We do know the surface contamination from the test wells, have resulted in no regrowth after 10 years

(See pic of the ground with no growth - above)

Any leakage of waste water, and no doubt there will be some, possibly a lot, will drain down through the Pilliga sands and into the GAB.

The 'Precautionary Principle' says that the action that could cause this to happen must not be contemplated.

And yet Mr Kitto, of the Dept, in his address on Day 1 of the hearings, said "The Precautionary Principle had not been triggered"

I wondered what would be necessary to actually trigger it?

So, clearly the Government is not concerned about the destruction of the land and the water, preferring support for the miners!?

I ask, what has been the response by Santos to the 23 requests regarding water? – is it possible to gain access to this response?.- or is it buried in 'commercial in confidence'?

10 Gas – Worse than Coal for Climate

The Institute for Energy Economics and Financial Analysis (IEEFA) says burning LNG "worse than coal" for climate – (ref. – RenewEconomy 9.3.2020) **(Attachment 6)**

As Australia's natural gas sector braces for the price impact of the global Covid-19 crisis, a leading energy think tank has used new analysis to argue that emissions from natural gas have been dangerously underestimated and that it was wrong to treat gas as a "transition fuel" in the shift away from coal.

In a new report, the Institute for Energy Economics and Financial Analysis (IEEFA) says that emissions from the production and use of natural gas may have been significantly underestimated and that this has been obfuscated by a concerted campaign by the natural gas industry.

"The industry claims burning fossil fuels such as 'natural' gas is cleaner than burning coal, a commodity on its way out as the world transitions to cleaner more sustainable energy sources," IEEFA gas analyst Bruce Robertson said.

"This is simply not the case. Gas is worse than coal in the short term due to its release of methane into the atmosphere."

IEEFA criticised the continued efforts to position natural gas as a transition fuel and suggestions that the global economy should use gas as an alternative to coal, rather than simply transitioning directly to affordable supplies of zero-emissions energy.

"Methane from gas poses the greatest threat to the warming climate," Robertson said. "If you leak more than 2% to 3% of methane, it is worse for the climate than coal."

Australia has significantly increased its production of natural gas over the last decade, with the growth in supply almost exclusively being directed into the export market, in search of lucrative prices being offered by industrial customers in South Korea and Japan.

This ramp-up in new gas production has pushed Australian greenhouse gas emissions higher, with subsequent increases in fugitive emissions effectively offsetting emissions reductions achieved in the electricity sector.

Natural gas predominantly consists of methane gas, which is a potent greenhouse gas and has a warming potential that is 28 times greater than carbon dioxide over a 100-year period. It is even more potent over shorter timeframes.

11 The Future?

If the Santos/Pilliga /Narrabri proposal gets the 'green light', this will provide the precedent to start CSG mining on a huge scale across the whole NW region of NSW (the first of 7 gas fields mapped by Santos) – right up through the incredibly rich food producing soils of the Liverpool Plains.

The big question is – do we want continuing production of food for Australian consumption and export (with population growth both in Australia and overseas, food will become more and more in demand), or a limited time of production of CSG (local and export), at a projected high price, with the inevitable destruction of the valuable food producing land, and the community that works it?

Food and community - or gas?

And remember, AEMO says we don't need the gas!

Economic Benefits

Yes, of course there would probably be Economic benefits for Santos, none for Australian consumers (we would pay export prices for something we will soon not need), a significant and permanent loss of excellent food producing land, some royalties for the Govt, again for a limited time, and very few many jobs – with Social problems.

Set against this is a major line of thinking, on paper, ready to be put on the table which would result in very significant Environmental, Economic and Social benefits – without the mining of coal and the need to mine CSG .

Why not take a good look at that!?

13 Conclusion

Based on the above points and the absolute knowledge that no consultant, and Santos itself, with their 'research' and their projections, will give a guarantee:-

- that no damage will occur to the water tables
- that there will be no damage to the land and its productivity
- that the Pilliga will continue in good shape as the largest temperate woodland in eastern NSW, with its wildlife intact and protected.
- that the Narrabri and surrounding community will not be affected in any way, now and into the future,

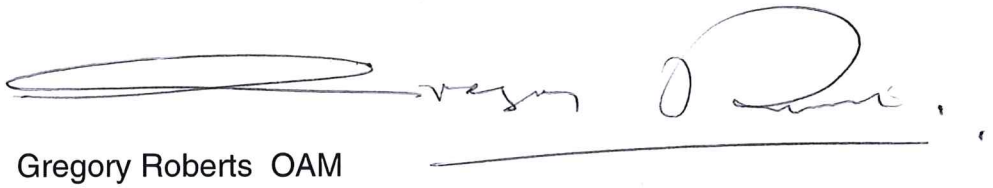
I conclude in this submission that the Santos Pilliga/Narrabri proposal should absolutely be refused.

This Santos proposal is a very good example of the actions by some people, driving commercial organisations (including those from other countries), and very seriously and regrettably, in this case, by both the Federal and the NSW State governments - actions to continue to destroy our land, water and the people in the surrounding areas – with no genuine concern for the Environment, or its people – the Social impact.

And no concern for future generations.

And it supports Minister Rob Stokes in his continuing to say - **the Environment is the most important aspect of the three.** And, thinking of our responsibility to leave this planet in much better shape, we agree totally with him on that.

We really do have to think about the long term future of our planet Earth.



Gregory Roberts OAM

Member of Climate Action Pittwater

4.8.2020

Gregory Blaxland Roberts, OAM, 0411 489 885, greg.b.roberts@gmail.com

Attachment 1

Talk at the hearings

TALK to IPC Frid 24th July - No. 253 – Day 5 re Santos/Narrabri – 4.19 pm

Good afternoon Commissioners

I'm Greg Roberts from Scotland Island on the Northern Beaches in Sydney

By way of introduction to my talk:-

I listened to the first day, and subsequent days of the hearing, mesmerised – and at the end of each of the days was very upset – and I am a positive person.

I have greatly admired your conduct of it.

But as far as its content – truly **AWFUL**

The Santos speech - **AWFUL** – the usual corporate speak – everything will be just great

And **AWFUL** too that the commercial organisations, and the Council support it, seeing some immediate local employment – (a very small number)

And the Government Department person – Mr Kitto - clearly keen on the project, but vague and inadequate on many things.

As I listened further, more and more it was clear that the Government was complicit in the whole thing

From memory Mr Kitto talked of a wonderful Gas lead Covid recovery – a real worry!

The Government is supporting - no - promoting is the correct word, this venture - revealed was that it is specifically interested in the royalty income and additional jobs (the later aim being demolished by a number of the speakers – clearly not concerned about anything else.

The many presentations by skilled and knowledgeable speakers have demolished these desires. One lady, clearly an expert on Social issues, detailed that there would be a net gain of 40 new jobs, plus all sorts of social problems – not the 400 promised by the Santos CEO.

Again **AWFUL** – in that the Government has a serious long term duty of care to the Environment,(the land, the water), the people and its communities – and this was not evident anywhere in his address.

And Mr Kitto said there wasn't enough to trigger the Precautionary Principle – how convenient.

The last speaker on Thursday, Stephen Perry from Warren

said, "we 100% can live without Coal Seam gas, but we cannot live without water".

He asked – who is responsible if the water was destroyed?

Santos of course **AND** the NSW (and Federal Governments) in not only discarding their of duty-of-care to the Environment – and the people and communities of NSW, but actually promoting their destruction.

It is impossible to put into words what the government is pushing to do. It is truly unbelievable.

The government needs to compare their desires with the massive losses in farming income to the State that would ensue, and the number of successful farms that would simply go out of business.

And, Mr Kitto says, these do not trigger the Precautionary Principle!

It is **AWFUL** – for the farmers, the environmentalists – all highly stressed over many years, absolutely fearful of the likely destruction of their businesses, and everything else with it – clearly frightened – all presenting carefully researched material

Including the inability to obtain insurance to conduct their businesses

The inability to have their products signed off as 'Clean and Green'

And the bizarre suggestion that everything in the Pilliga could be picked up and moved somewhere else, including the Pilliga Mouse, and all would be fine

And the Geologist who said "I don't know much about GSG, but I know a lot about geology', who then proceeded to define what would happen in drilling through the layers of rock and shale – terrifying.

Now to my very truncated address:-

My concern is on a broad and very serious issue, which encompasses the Santos/Narrabri proposal

The details are in my submission

If I take a selfish view, I'll say that I shall probably get through the balance of my life perfectly comfortably and enjoyably.

If I had no children, maybe I wouldn't worry about this issue.

But I do have children and grandchildren, and I have thought during this period of my life of their future, and the generations that will follow, as no doubt you, and many others have done.

And particularly over recent times – with health impacts, economic impacts, climate impacts – all swirling around us.

And I say this – as strongly as I can - we have no right to make, or even support, decisions that could potentially have even the slightest negative impact on the Environment - our Land, our Water, the People and their Communities.

We simply do not have this right

We are still making decisions that we know will have negative impacts, driven by greed and selfishness.

And the proposal by Santos to dig for CSG is another one of them.

Despite what all the consultants say, and of course the miners, their statements, their projections, their pronouncements, they all fail the test.

They will never say, categorically, that if you mine here – coal or Coal Seam Gas, there will be NO negative impact on the land, the water, the people and their communities.

Now, at long last, there is a hint, a turning point , being evidenced – a concern being shown by the independent groups – the IPC (Kepco's Bylong Coal proposal), and The Land and Environment Court (the proposal for Gloucester Resources' Rocky Hill mine).

They recognised that there were future negative impacts involved, climate change being a key one, and made the decision to reject the proposals.

Conclusion

These mining companies could not care less about our land, our water, the people and the communities of NSW, and the future of Australia for that matter. CSG has only a small role to play as a transitional fuel for our needs, as stated in AEMO's 20 year Integrated System Plan.

Fortunately, the answer is already on the table – **a quick and determined move to Renewable Energy, which is proven and factored into AEMO's Integrated System Plan.**

If this proposal is approved and, even worse, sets the precedent to be allowed to mine up through the rich agricultural land of the North West, then our children, our grandchildren and future generations will curse us for it, and we will deserve their curses.

Continuing food production to feed a growing population forever, and an export market? – or short term mining with its destructive impacts on our farmers and the Environment?

On the basis of the above I strongly object to Santos' proposal to drill and operate the 850 additional mines in the defined area

Thank you

I shall include this with my submission

Attachment 2 – letter to Minister Stokes

Rob Stokes MP

Minister for Planning

5.10.16

Good morning Rob

Last night we were addressed by Kaye Osborn (Illawarra Residents for Responsible Mining), who drove up from Wollongong, to show us what was happening with the long wall mining in the water catchment areas.

I had no idea as to the extent of the impact of this mining, both on what was the normal water flow into the dams and the breakup of the surface causing awful damage to the Environment (creeks to disappear and rock surfaces to be split) – see http://www.lockthegate.org.au/protectsydneyswater

Further, I was advised that the Govt. (the people of NSW) receives very little recompense for this extraordinary amount of destruction – probably a deficit if you take in the overheads of the Dept of Mining!?

Will the mines be held to account in the restoration of the ground above the mines? Does the Govt. have an adequate amount of money held for this restoration, which no doubt will be very substantial?

I also understand that there is a build-up of 'dirty' water which, if it breaks its banks any time into the future, could cause a devastating impact on Wollongong below. Is that a correct statement?

Rob, why would the NSW Govt. continue on in this way to completely destroy the environment forever?

It can have nothing to do with income!

It can have nothing to do with jobs (small in number)! So, there is **no** Economic benefit, **huge** Environmental destruction and **serious** Social impact, with potential for devastating consequences.

Why not stop it now!?

Would you please give a copy to Anthony, whose direct responsibility, presumably, it is.

I look forward to an urgent response on this serious matter

With best wishes

Greg

PS The current Wynne exhibition had a number of excellent paintings, one of which was 'North/black lung' by Peter Gardiner. He made the comment – 'North/black lung is a reminder of the pervasiveness of history; whatever actions are undertaken now will be our legacy'.

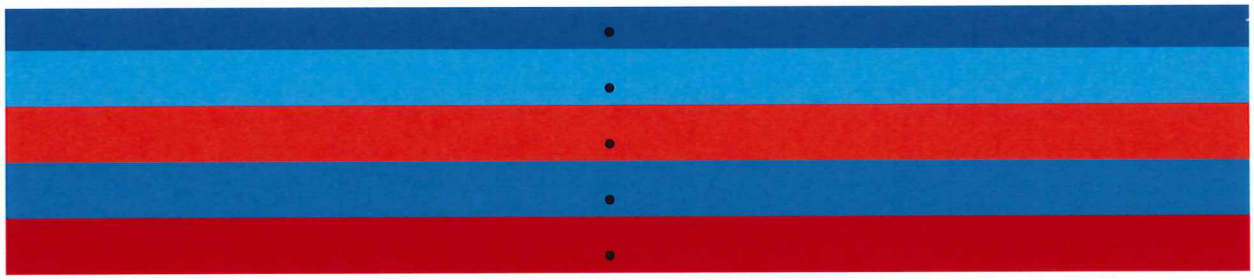
Note:- a reply was received saying that the situation was being carefully managed. Clearly not!

Attachment 3

30 July 2020

World's fastest energy transition: AEMO maps path to 94 per cent renewables

Giles Parkinson RenewEconomy 30 July 2020



It doesn't feel like it at times, and the political debate would have us believe it is not happening at all. But the Australian Energy Market Operator says Australia is in the midst of what is likely to be the world's fastest energy transition. And it has just finalised its 20-year blueprint to make sure that the shift from coal to a grid dominated by wind, solar and storage can happen smoothly and delivers the promised savings in costs and emissions.

The final version of the 2020 Integrated System Plan was presented to state and federal ministers in the past week and released to the public on Thursday. It differs little from the draft ISP unveiled late last year, apart from some price movements in gas and networks (both up), and battery storage (down), and an even more rapid embrace of rooftop solar by the public.

But the central message is this: The energy transition is inevitable, it's accelerating and there's not much point in resisting it. "This system is now experiencing the biggest and fastest transformational change in the world," it says.

Even a "do-nothing" business-as-usual scenario delivers a 74 per cent renewables share by 2040. A "step-change" could deliver 94.2 per cent renewables by 2040. So if Australia is smart, can take advantage of its natural advantage in wind and solar, can lock in its technical know-how, and deliver a system that is smarter, cleaner and cheaper than what it has now, then it can position the country to become a renewable energy and economic superpower.

"It is inevitable. It is just who we are and what we are," AEMO boss Audrey Zibelman told RenewEconomy in an interview ahead of the release. "We are at a position where the existing coal fleet is coming to an end of its technical life and is going to retire."

Zibelman says coal will be replaced by renewables because the cost of wind and solar technology have already plunged in recent years and will continue to fall, and together with battery storage and pumped hydro, and other forms of dispatchable generation, they clearly offer the cheapest and obvious replacement.Whichever way you cut it, AEMO says, Australia is going to experience the world's fastest energy transition. As this graph above shows, only in the catastrophic (in climate and environmental terms) slow-change scenario does the share of renewables fail to reach 50 per cent by 2040, but only just. Even in the "central scenario" – essentially doing nothing beyond what has already been announced – the share of renewables reaches 74 per cent. The step change takes it to 94.2 per cent in just two decades, including 87.8 per cent from wind and solar alone.

The ISP is AEMO's 20-year blueprint to ensure that the planning is in place, and so is the infrastructure, to go with the new market rules and regulations that take into account the change in technologies from a centralised grid, based around big fossil fuel generators, to a distributed, digital and democratised grid that links the best resources of wind and solar and behind–the-meter technologies.

It is very complex, and hard work for the engineers. But it is eminently doable. "These are all solvable issues," Zibelman says. "We need to drive this transition at an affordable price, and learn how to maximize the opportunities for consumers for what

are essentially free electrons from these assets." And that means creating the conditions, and a coherent plan, where investors can invest with confidence.

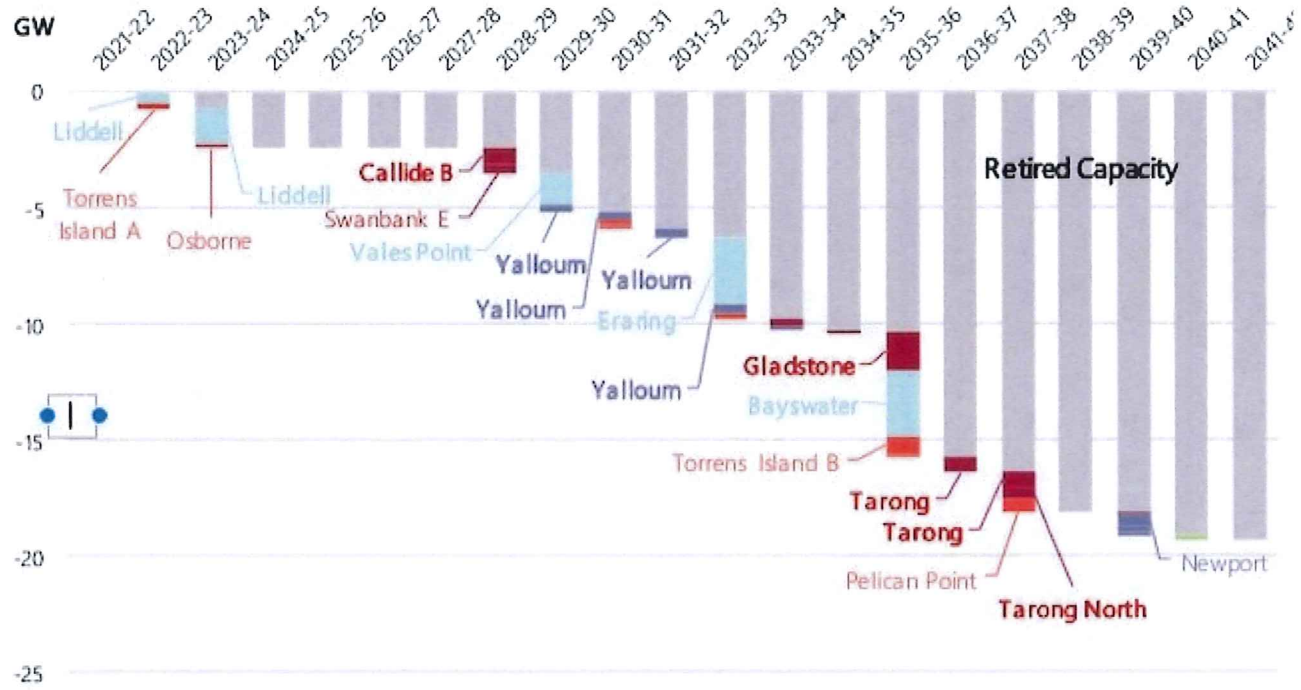
Zibelman says the net benefits of its core infrastructure plan in the ISP – based around network infrastructure and new renewable zones – will be $11 billion.

"That's two to three dollars of return for every dollar that is spent," she says. The benefits could be even greater, depending on which of the five scenarios that Australia ultimately follows. The good news is that the step-change scenario, the fastest change and the one that accords with climate science, and the Paris targets of 1.5°C, delivers the biggest benefits – $40 billion.

This transition will, however, require massive investment in new generation.

Much of it will come from consumers. Residential, industrial and commercial consumers are expected to continue to invest heavily in distributed PV, battery storage and load management. Depending on the scenario, and subject to technical requirements, the AEMO modelling projects distributed energy could provide up to 22 per cent of total underlying annual energy consumption by 2040.

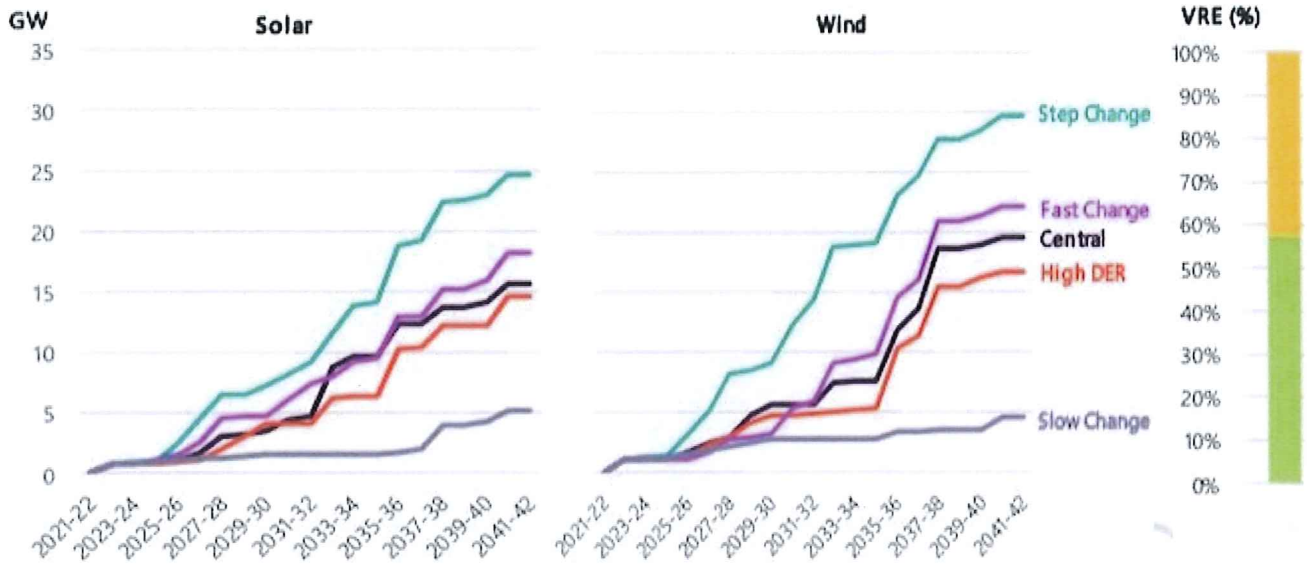
Figure 11 Coal-fired generation and GPG retirements (top) and capacity (bottom)



More than 26 gigawatts of new grid-scale renewables is needed in all but the Slow Change scenario, on top of the 10GW that has already been built or is in construction. This is to replace the approximately 15GW, or 63% of Australia's coal-fired generation that will reach the end of its technical life and so likely retire by 2040. The graph above shows the expected retirement dates of the big coal and gas generators. AEMO says existing coal-fired plants are not forecast to continue beyond their planned retirement dates and in the Fast and Step Change scenarios will exit earlier if the competition from renewable generators and carbon budgets reduce their revenue below what is economic for them to continue.

The new build requirements for wind and solar generation could total up to 55GW, depending on the pace of change, and this will have to be supported by between 6GW and 19GW of new flexible and dispatchable resources. (See graph below).

Figure 12 New NEM VRE build, solar (left) and wind (middle) and Central scenario split (ri



This is likely to come from pumped hydro, large-scale battery energy storage systems, distributed batteries, virtual power plants, and other demand-side participation (DSP). New flexible gas generators could play a greater role, but only if gas prices remain really low. Otherwise, they won't be able to compete with battery storage. But AEMO points out that even within one scenario, there are near-infinite possibilities to mix generation, storage, transmission and distributed resources to meet cost, security, reliability and emissions expectations.

See our story: AEMO says batteries will be cheaper and cleaner than new gas plants

AEMO has a bunch of things on its to-do list. Apart from a rewrite of the market rules and regulations, and the upgrade of inverter technologies and other protocols that will give it increased visibility and control over the growing fleet of rooftop solar installations, it also has its eyes on new transmission links between state grids and the creation of specific renewable energy zones.

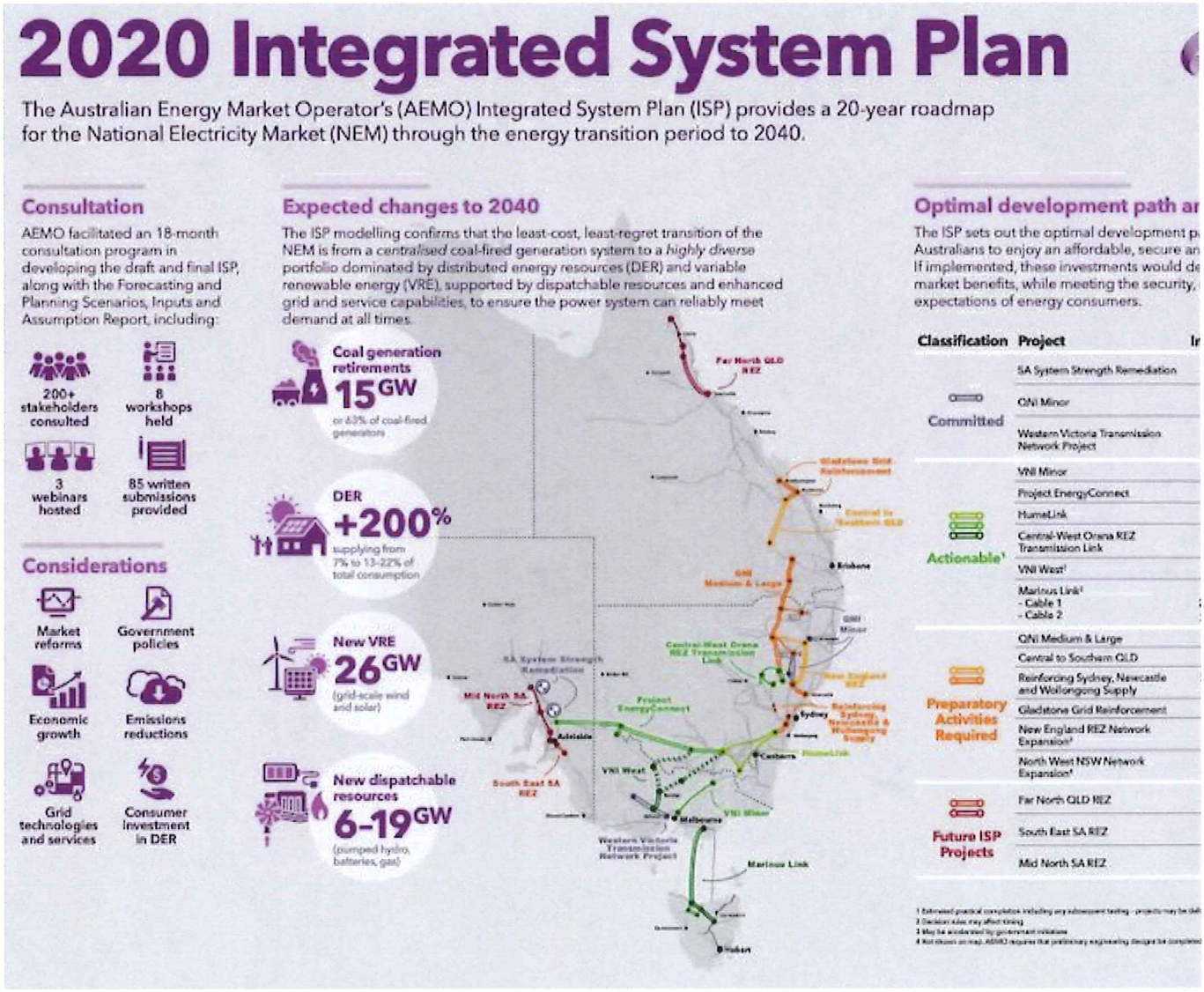
These are the focus of the ISP. And the most urgent of these are new links between NSW and Victoria – particularly as the growth of rooftop solar makes the ancient and inflexible brown coal generators in Victoria difficult to manage; the Marinus link between Tasmania and Victoria; the Hume link to deliver the Snowy 2.0 to where it

might be useful, and a new link, Project EnergyConnect, from South Australia to NSW.

Its list of preferred REZ includes the central west in NSW, and other zones in south-west NSW and Victoria, and Queensland. The newly announced New England REZ, where NSW hopes to attract 8GW of wind, solar and storage capacity, is not top of its list.

But Alex Wonhas, AEMO's chief system designer, says that's not a problem because it can work with the state governments and accommodate its preferences. The NSW energy minister Matt Kean, possibly facing the most dramatic transition of all as the state's ageing coalers exit the market and are replaced by up to 16GW of new renewables capacity, is not fazed.

"I welcome AEMO's latest Integrated System Plan, which is a strong tick of expert approval for the NSW government's plans to build Renewable Energy Zones and fast track our connection to Snowy 2.0," Kean said in an emailed statement.



Tasmania energy minister Guy Barnett – like Kean, a Liberal – was equally chuffed with AEMO's support for the Marinus link, which would have two new sub-sea cables linking the island state with the mainland, which would support its target of reaching 200 per cent renewables by 2040 so it can become a "battery of the nation".

"Our number one priority is to create jobs, rebuild the economy and protect the Tasmanian way of life, which is why we continue to back renewable energy projects and our vision to be a Renewable Energy Powerhouse," Barnett said.

AEMO insists its plan – put together over 18 months and with hundreds of consultations with stakeholders is robust. And it will repeat the process every two years to take into account changes to technologies, cost and ambition.

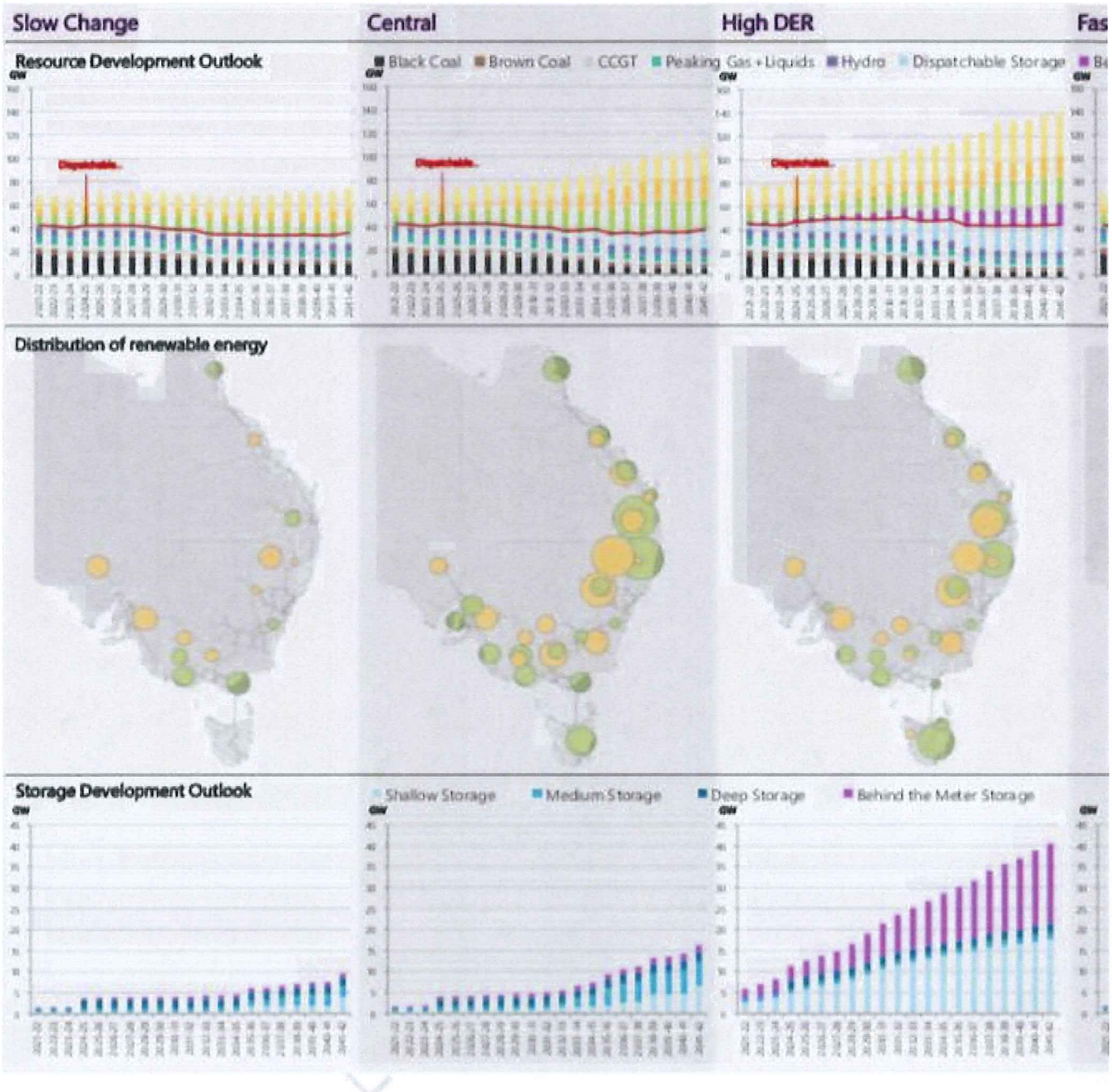
"As a rigorous whole-of-system plan, the ISP is a far more comprehensive and richer analysis than other comparable modelling exercises for Australia's energy future," it says.

"It takes into account not only the capital and fuel costs of generation but also future network developments and deployment of DER. It includes a degree of sector coupling with the transport and gas sectors.

"It also takes the first steps towards including insights on the role of hydrogen. It incorporates innovations in consumer-owned DER, virtual power plants (VPPs), large-scale generation, energy storage, and power-system services. Finally, it ensures the physical limitations and constraints of Australia's energy system are accurately represented."

It looks at five different scenarios, ranging from slow change through to the business-as-usual Central scenario, to the High DER scenario with more rapid consumer adoption of DER, a Fast Change scenario with greater investment in grid-scale technology, and a Step Change scenario where both consumer-led and technology-led transitions occur in the midst of aggressive global decarbonisation.

Figure 9 Power system development in each least cost development path across the five scenari



Four sensitivities that might vary the timing of key market events are considered. They include the earlier retirement of existing generators, Snowy 2.0 delays, a closure of large industrial load in Victoria and Tasmania, and the early development of VRE in the Central-West Orana Renewable Energy Zone (REZ).

Two new sensitivities test changes in inputs that could materially alter the optimal development path: legislation of a Renewable Energy Target in Tasmania, and

updated demand forecasts including the potential impacts of COVID-19 and current trends in PV sales on demand.

From the draft ISP, the biggest changes in input are costs. Each major transmission project identified in the ISP that had gone through the RIT-T process had at least a 30% increase in cost from initial estimates, due to a range of factors. But costs of grid-scale batteries reduced by 30-40% and new gas-powered generators, because they are expected to be smaller than originally assumed, saw a cost increases of 30-60%.

Cost expectations for new pumped hydro energy storage also increased by 50%. Other technology costs have adopted projections from the CSIRO's 2020 GenCost report.

See also Ketan Joshi's initial take on the ISP: AEMO's recipe for a cheap, clean and reliable energy future.

Giles Parkinson

Giles Parkinson is founder and editor of Renew Economy, and is also the founder of One Step Off The Grid and founder/editor of The Driven. Giles has been a journalist for 35 years and is a former business and deputy editor of the Australian Financial Review.

Attachment 4

Received 28.2.2020 from the NSW Govt

LATEST **NEWS**

e rain needed to break the drought

ite recent rainfall across NSW coastal and inland
ns, 99% of the state remains drought-affected.

Attachment 5

Santos must come clean on methane and accept its responsibilities to human health

Dr David Shearman 6 April 2020

Putting aside the inadequacies of government in addressing climate change, many Australians are coming to recognise that the fate of the planet resides mainly in numerous corporate board rooms. The recent Santos annual general meeting will increase their anxieties.

Santos, along with other Australian gas producers, has a significant role in increasing world emissions of methane, a fast-acting greenhouse gas.

At the AGM it was encouraging that 43 per cent of shareholders supported a resolution from the Australasian Centre for Corporate Responsibility for Santos to reduce emissions, a resolution also supported by large superannuation funds.

But many Australians will find it quite remarkable that two major Chinese investors in Santos should be in a position to have a significant impact on the control of our greenhouse emissions. At the AGM they supported the Santos targets "aligned to the goals of the Paris agreement"

The problem for Santos is that its own figures are not aligned to the Paris goals because they do not include leakage of methane in all stages of production and transportation (fugitive emissions).

Santos has never addressed the increasing body of evidence that total emissions from gas are little different from coal, as detailed in several recent peer reviewed scientific studies.

Rather the CEO of Santos in his address to the AGM relied upon the words of chief scientist Alan Finkel, that "natural gas is already making it possible for nations to transition to a reliable and relatively low-emissions electricity supply. Professor Finkel referred to the UK where the combination of natural gas and renewables has led to a 50 per cent reduction in emissions from electricity generation since 2009"
It is important that Finkel's words are perhaps looked in context.

An analysis of the UK's reduction of emissions by Carbon Brief states: "It is worth noting that this analysis of electricity sector emissions is incomplete, as it does not consider methane leakage during gas extraction and transport."
No doubt Professor Finkel will readdress this issue for it of great importance in the management of the current climate emergency.

The statement from the Santos chair that "Increasing LNG exports is the best thing we can do to reduce global emissions by replacing coal in household heating and cooking, industrial processes and power generation in Asia" must surely lead to some wealthy shareholder phoning Elon Musk to ask for a seat on future space transport.

Many doctors and scientists have concerns for the health and wellbeing of residents in or near to gas fields. Some doctors were present at the meeting but some crucial questions were not addressed by Santos.

However, a question from Dr Graeme McLeay, board member of Doctors for the Environment Australia related to the increasing world emissions of methane from fossil fuels detailed in a leading scientific journal, Nature.
Climate change has been recognised by the Australian Medical Association, the American Medical Association, the British Medical Association, and the World Health Organisation as a major global health threat. Global methane, responsible for 25% of global heating, is rising, now at 60% higher than preindustrial levels.

The evidence is now strong that fossil fuel methane is now a major source of global methane. Extraction of natural gas is a major source of fossil methane and these emissions have been underestimated by 25% to 40% as reported in Nature.

Mcleay asked how does Santos reconcile its stated climate policy with the now clear evidence of rising fossil methane emissions related to gas extraction and deployment?

On what basis does Santos claim that LNG exports lower emissions in client countries when it is known that fugitive emissions negate any advantage over coal?"

The response from the CEO was;

> -"Look, the Nature study picks up all the methane emissions around the world and then it makes assumptions to allocate those emissions between customer end use, coal mining, gas production, and natural geological sources such as seeps and mud volcanoes. The authors themselves acknowledge that the oil and gas practice has substantially improved since particularly the 70s and 80s—reducing venting and flaring and the associated gas etc…but this isn't evident in the data they produced in that article.
>
> Getting away from that argument…..we comply….we build a bottom up inventory on our emissions, we do regular checks on our emissions, we have physical data that we measure. As we come into a new area we are establishing baselines so that we actually understand the natural

> background levels of methane are so that we can see if we are having an input through our operations, we haven't got any evidence of that so far. So basically we're very confident about the data we report. We base that on evidence not on assumptions, not on rates that are applied holistically, our reporting is audited and we're confident about the veracity of our data" Video here

Bearing in mind that there are many studies indicating that total emissions from gas are little different from coal, the readers of this response will make their own judgement. However, the issue is so important for emission control it is vital that Santos publishes its data rather than having it "audited".

Dr Melissa Haswell, Professor of Health, Safety and Environment asked "Research has linked a higher prevalence of harmful birth outcomes – for example neural tube and congenital heart defects, pre-term births and lighter birth weight – among women who live close to gas operations during pregnancy.

A list of these studies is available here. I would like to know how Santos has analysed these risks and what the company is doing to communicate the findings of these studies and eliminate these risks to pregnant women, infants and children living near Santos operations?"

In view of the significant and disturbing body of evidence from the United States about endocrine disrupting activity linked to a mixture of 23 chemicals commonly found in the vast quantities of wastewater produced during operations, Dr Haswell also asked;-

"Please explain in detail how Santos will be monitoring and eliminating potential exposure of residents and workers to chemical mixtures with endocrine disrupting potential known to be present in wastewater as well as air?"

With regard to these health studies, we noted in a previous article "Clearly there are legal and insurance implications for industry and governments allowing these risks to proceed"

Also in relation to a question on possible impacts on food asked at the AGM, has the company estimated what scale of liability it faces with no suitable insurance products available from unexpected environmental damage from the Narrabri gas project?

Santos is in denial over these findings but the whistle has now been blown and they are accountable for any dismissal of the firm evidence for these dangers published in the scientific literature and it would be financially prudent to prepare for them. Boardrooms of the companies that invest in fossil fuels are the battle ground for our future and thanks are due to Market Forces and to the Australasian Centre for Corporate Responsibility for their efforts.

Dr David Shearman AM FRACP is emeritus Professor of Medicine, University of Adelaide

Attachment 5 - Additional

Gas is burning any hope of science-based climate policy for Australia

David Shearman 20 March 2020

Earlier this month, the CEO and managing director of Santos, Kevin Gallagher, contributed an article to the Australian Financial Review entitled *Exporting gas and storing CO2 is pathway to greener future* (paywall).

Unfortunately, the argument that "our LNG is good for Australia and good for the world…" cannot be substantiated by scientific or medical facts in peer reviewed articles.

The article argues the position that "the cleanest burning of all fossil fuels, natural gas produces the least amount of carbon dioxide – a major cause of the enhanced greenhouse effect"

This might be so when it is burned in the household or by industry, but it fails to account for the potent fugitive methane emissions that escape during the many stages of production and transport.

Four years ago a study from the Melbourne Energy Institute flagged this issue and there have been many studies confirming that the emissions profile of gas is little different to that of coal.

A recent study in the Journal Nature indicates that anthropogenic fossil methane emissions have been underestimated by about 38 to 58 [million tonnes] methane per

year, or about 25 to 40 per cent of recent estimates. Most of this methane is emitted by the gas industry and the IPCC has indicated it must be urgently controlled because it is 85 times more potent as a climate warmer than carbon dioxide.
This increase in fugitive emissions is responsible for the large rise in Australia's domestic emissions due to the export of gas as shown by ABS data.

Let us be clear, gas will do nothing to decrease the carbon footprint in Asian countries nor will it help Australia reduce its domestic emission commitment to the Paris agreement. The facts show that gas is not a transition fuel for the electricity sector, Prime Minister. Indeed enthusiasm for gas is often accompanied by policy barriers against renewable energy.
While gas does burn cleaner than coal reducing air pollution, renewable energies produce zero air pollution problems.

The implication that "Almost two billion people, about a quarter of the world's population, still live in poverty on less than $US3.20 per day" will be helped by gas is a gas-pipe-dream. The poorest people are often distant from a grid, if there is one at all, and have poor road access. How would gas be delivered? Canisters dropped by helicopter, vast gas pipelines with massive compressor stations built by the Chinese?

Solar household systems are the healthy and affordable answer in Africa, Bangladesh and some other Asian countries and many large companies are donating to their installation. The gas industry could help by making donations in lieu of their non-payment of tax to express its concern for the poor in action.
The production of gas in Australia is a health risk and, as with coal, the health impacts become simple externalities ignored by government for political expediency; one should ask why health studies in gas fields have not been studied significantly in Australia as they have in the US.

In the United States where rapid and expansive development of gas and oil fields has occurred in close proximity to residential areas, over 1800 papers with a substantial body of research findings have been published. A review of these studies shows that proximity to gas development risks low birth weight infants, pre-term births,

congenital heart disease and other congenital disorders, cancers and blood and immune diseases in children.
Health and water security concerns cause stress to residents in Queensland's vast gas fields and for the proposed and for the proposed Narrabri, Northern Territory and Western Australian developments. Clearly there are legal and insurance implications for industry and governments allowing these risks to proceed.

How could the gas industry in Australia be so dismissive of this work? Partly because of incompetence in state regulation of the industry.

In Queensland the Auditor-general questioned transparency and the oversight of the CSG industry.
There are hundreds of wells to monitor by government or by industry in Queensland and monitoring is costly to carry out thoroughly.

In NSW much of the Chief scientist's long standing coal seam gas report on regulation has not been implemented.
These derelictions of duty to the public explain why health impacts may not be evident in Australia; the data is not available to relate health events to potential instances of release of toxins into air and water, and chemicals in spills. Health departments have been reluctant to embark on studies when their governments are besotted by gas development

What can be done? Australia needs a climate change policy based on scientific facts, not on opinion.

Dr David Shearman AM FRACP Emeritus Professor of Medicine, University of ***Adelaide***

Attachment 6

RENEW ECONOMY

Gaslighting on emissions: IEEFA says burning LNG "worse than coal" for climate

Michael Mazengarb 9 March 2020

As Australia's natural gas sector braces for the price impact of the global Covid-19 crisis, a leading energy think tank has used new analysis to argue that emissions from natural gas have been dangerously underestimated and that it was wrong to treat gas as a "transition fuel" in the shift away from coal.

In a new report, the Institute for Energy Economics and Financial Analysis (IEEFA) says that emissions from the production and use of natural gas may have been significantly underestimated and that this has been obfuscated by a concerted campaign of the natural gas industry.

"The industry claims burning fossil fuels such as 'natural' gas is cleaner than burning coal, a commodity on its way out as the world transitions to cleaner more sustainable energy sources," IEEFA gas analyst Bruce Robertson said.

"This is simply not the case. Gas is worse than coal in the short term due to its release of methane into the atmosphere."

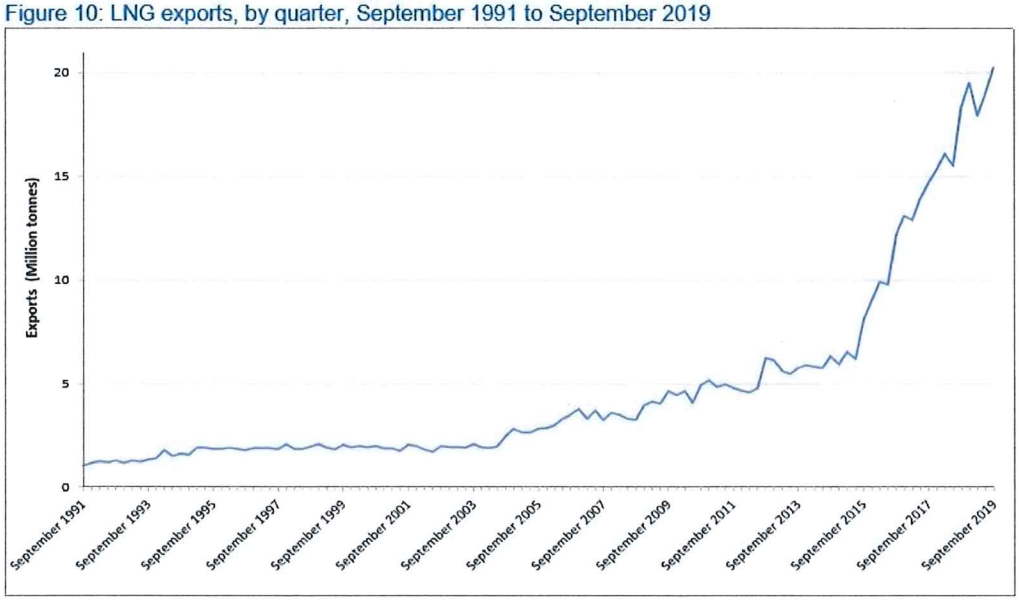
IEEFA criticised the continued efforts to position natural gas as a transition fuel and suggestions that the global economy should use gas as an alternative to coal, rather than simply transitioning directly to affordable supplies of zero-emissions energy.

"Methane from gas poses the greatest threat to the warming climate," Robertson said. "If you leak more than 2% to 3% of methane, it is worse for the climate than coal."

Australia has significantly increased its production of natural gas over the last decade, with the growth in supply almost exclusively being directed into the export market, in search of lucrative prices being offered by industrial customers in South Korea and Japan.

This ramp-up in new gas production has pushed Australian greenhouse gas emissions higher, with subsequent increases in fugitive emissions effectively offsetting emissions reductions achieved in the electricity sector.

Figure 10: LNG exports, by quarter, September 1991 to September 2019



Source: Department of Industry, Science, Energy and Resources

Natural gas predominantly consists of methane gas, which is a potent greenhouse gas and has a warming potential that is 28 times greater than carbon dioxide over a 100-year period. It is even more potent over shorter timeframes.

Federal energy and emissions reduction minister Angus Taylor has repeatedly said that while Australia's own emissions are increasing, the production of gas for the export market is reducing the world's overall greenhouse gas emissions by lowering them in other countries.

This is an assertion that has been questioned by many researchers, who have argued that Australia's gas exports more likely work to increase overall fossil fuel use, and therefore increase global greenhouse gas emissions, rather than being used as an alternative to coal.

The IEEFA analysis also puts Taylor's claim into doubt given the amount of gas lost in the production of liquified natural gas, as well as the emissions associated with the transport and use of the gas itself.

The Federal government recently secured an agreement with the New South Wales state government to increase the supply of gas in that state, including the development of potentially uneconomic gas reserves in the Narrabri region.

"The government says gas is a transition fuel," says Robertson.

"Instead, this long list of hugely expensive infrastructure projects shows the gas industry is using the transition narrative to embed itself into the energy future of Australia in the long term, crowding out other sources of power, while lying about the effects of its product on climate change, and therefore people's day-to-day lives."

IEFFA compared the potential discrepancy in emissions caused by natural gas to that of Volkswagen and the fallout from the "Dieselgate" saga when it was revealed the German auto manufacturer had been systematically cheating vehicle emissions tests.

IEEFA argued that there was a growing appreciation of the climate impacts of increased use of natural gas and that the sector could experience a similar reckoning to that of Volkswagen.

"Not only is this a massive stranded asset risk we will all have to carry, the industry's deception is carrying its investors and shareholders, and banks and insurers into a dark place."

"Volkswagen's lies have cost it dearly. The gas industry must also be exposed."

The analysis from IEEFA mirrors the findings of research published in the journal Nature that found that human-caused methane emissions had been systematically underestimated and that they may be up to 40 per cent higher than first thought.
In that research, an international team of climate scientists found that the level of historical levels of methane released into the atmosphere as a result of fossil fuel extraction had been underestimated and that human activity, rather than biogenic sources of methane, had was responsible for a larger contribution to global warming.

The analysis also follows the release of Hugh Saddler's latest National Energy Emissions Audit, published by The Australia Insitute late last month, which found Australia's gas power fleet to be inefficient and costly.
Saddler found that the combined-cycle gas plants in Australia's national electricity market ran at just 30 per cent capacity across the past 18 months.

"In reality, gas is expensive, it's high-polluting and, as this research shows, it is underperforming," said TAI's Richie Merzian in comments to The Guardian. "Given this, why would we underwrite new gas-fired plants?"

Michael Mazengarb