Chilling tale of Origin Energy whistleblower

Adele Ferguson

January 23 will be a day to remember for whistleblowers, regulators, politicians – and, of course, corporations.

On that day whistleblower Sally McDow, a highly credentialled lawyer and former senior compliance manager at Origin Energy, lodged the first ever case in Australia that tests whistleblower protections under the Corporations Act, alleging significant and dangerous compliance breaches, a deliberate cover-up by management and potential breaches of the Corporations Act.

Interim Report:

This revolution turned the US from an energy importer into an energy exporter. It transformed the energy market in North America and significantly affected world trade in gas and oil. But in some instances, this transformation took place in jurisdictions that were poorly regulated, resulting in significant environmental damage.

Final draft report summary:

In the United States of America (**US**), the 'shale gale' gas revolution turned the US from an energy importer into an energy exporter. It transformed the energy market in North America and significantly affected world trade in gas and oil. But with this change came cost. In some jurisdictions the industry developed in a virtual legislative lacuna, with poor regulatory governance resulting in even poorer environmental outcomes.

The premise:

That only poorly regulated jurisdictions will have issues……

The Oil Man: Falcon Oil & Gas, Ascent Resources

By **Malcolm Graham-Wood** | Tue, 18th July 2017 - 10:43

These are the two comments that give the most weight to the view that the final report may be a qualified positive for Falcon and Origin.

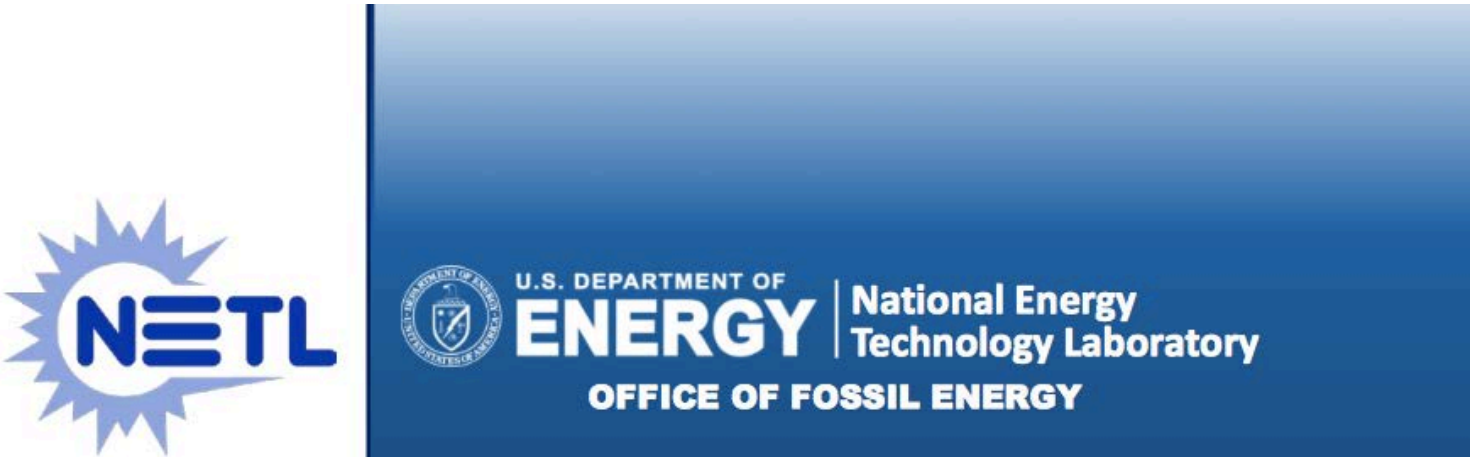
"The major recommendations, consistent with other Australian and International reviews, is that the environment risks associated with hydraulic fracturing can be managed effectively subject to the creation of a robust regulatory regime."

"Having regard to the substantive weight of agreed expert opinion, the Inquiry finds that there is no justification whatsoever for the imposition of a moratorium on hydraulic fracturing in the NT."

The primary and most raised issue is that of water, particularly between fracced shale formations and aquifers, this has been considered to be 'low risk' due to the distance between the two and low permeability of the intervening strata.

Indeed, the enquiry actually said that there was a risk that groundwater and/or surface water could be contaminated by chemicals, but that this could be contained by 'existing management strategies.

Skone et al (2016) *Life cycle analysis of natural gas extraction and power generation,* NETL



The National Energy Technology Laboratory (NETL), part of the U.S. Department of Energy (DOE) national laboratory system, is owned and operated by the DOE. NETL supports the DOE mission to advance the energy security of the United States.

NETL implements a broad spectrum of energy and environmental research and development (R&D) programs that will return benefits for generations to come. These include:

- Enabling domestic coal, natural gas, and oil to economically power our Nation's homes, industries, businesses, and transportation.
- Protecting our environment and enhancing our energy independence.

NETL has expertise in coal, natural gas, and oil technologies; contract and project management; analysis of energy systems; and international energy issues.

In addition to research conducted onsite, NETL's project portfolio includes R&D conducted through partnerships, cooperative research and development agreements, financial assistance, and contractual arrangements with universities and the private sector. Together, these efforts focus a wealth of scientific and engineering talent on creating commercially viable solutions to national energy and environmental problems.

From the Final DraftPG 196

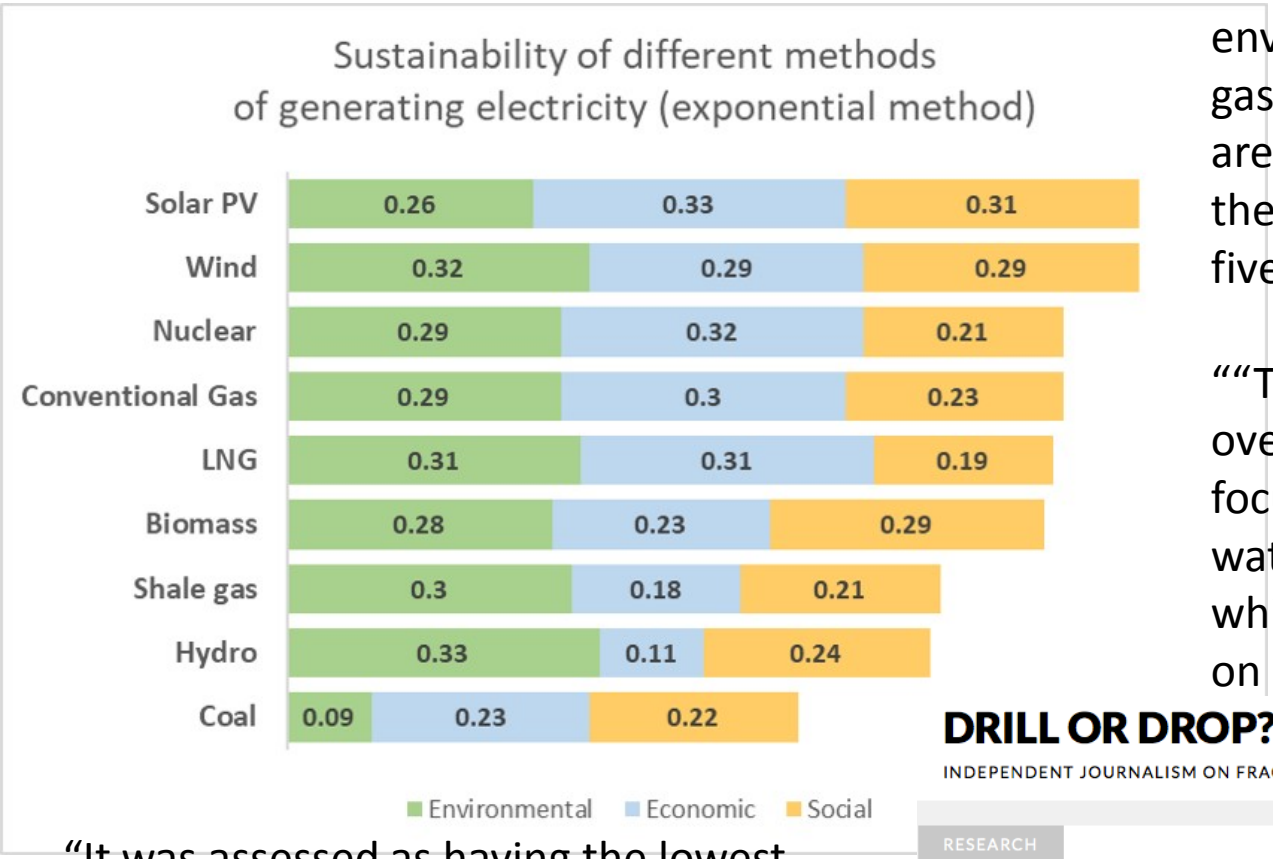
“This modeled well scenario produced GHG emissions of 12 g COe/mJ, which are 23% lower than historical practices, and with a methane emission rate of 1.25% on a mass basis.33 “

From Skone et al aka NETL

“The power plant results are a mix of current and advanced technologies. This analysis includes fleet power plants that are representative of installed technology as of 2009 and also includes advanced power plants – with and without CO2 capture – that are representative of the latest technology but have not achieved broad commercialization.”

Research by scientists at Manchester University has found that shale gas is one of the least sustainable choices for generating electricity.

Their report, *Sustainability of UK shale gas in comparison with other electricity options,* looked at nine fuels, including shale gas, conventional gas, liquefied gas imports, coal, wind and solar.



Authors comment: "Regarding the environmental impacts of shale gas, it is correct that some impacts are higher for solar PV; however, the greenhouse gas emissions are five times higher for shale gas"

""This enables us to evaluate its overall sustainability rather than focusing on single issues, such as water pollution, traffic and noise, which have dominated the debate on shale gas so far."

"It was assessed as having the lowest employment rate (47.7 person-years of employment per TWh generated, compared with 653 for Solar PV) and the lowest score on the public support index apart from coal."

DRILL OR DROP?

INDEPENDENT JOURNALISM ON FRACKING, ONSHORE OIL AND GAS AND THE REACTIONS TO IT

RESEARCH

Shale gas is one of least sustainable ways to produce electricity – new report

BY PAUL SEAMAN ON JANUARY 16, 2018 • (27 COMMENTS)

World Bank

World Bank to end financial support for oil and gas extraction

Bank announces in Paris it 'will no longer finance upstream oil and gas' after 2019 in response to threat posed by climate change

Larry Elliott
Economics editor

Wed 13 Dec 2017 09.19 AEDT

The Greenpeace International climate campaigner Gyorgy Dallos said:
"the Bank had sent a damning vote of no confidence in the future of the fossil fuel industry. The world's financial institutions now need to take note and decide whether their financing is going to be part of the problem or the solution."

Table 9.10: Mitigation of supplementary risks that may prevent lower levels of methane emission performance from being achieved.

Risk identification	Comment	Mitigation action
Regulations are not implemented.	Regulations are required for reduced emissions completions, compressor emissions and pneumatic controllers.	Ensure that world leading practice regulations are implemented that are known to achieve lower methane emissions.
Regulations may restrict the development or implementation of technologies that lower emissions.	Regulations may hinder the achievement of lower emissions.	Prescription-based regulation, only while achieving desirable outcomes, may restrict new technologies. There is a need to allow appropriate flexibility in the formulation of performance-based regulations.
Regulations are not fully complied with.	This may have the effect of allowing increased emissions.	Ensure that there are appropriate incentives for compliance and penalties for non-compliance.
Monitoring for compliance with regulations is not undertaken or is inadequate.	Monitoring by a regulatory authority may not occur because of lack of resources.	Ensure that there are appropriate requirements for monitoring regulatory compliance and that there are adequate resources.
Monitoring of both baseline emissions and emissions during production is not undertaken.	Monitoring emissions is a means of assuring compliance and to detect 'super emitters'.	Ensure that there are appropriate requirements for monitoring emissions.
Inadequate monitoring of both baseline emissions and emissions during production.	This may result in the inability or failure to detect abnormal emissions and lead to higher emission.	Ensure that there are adequate resources to undertake monitoring and that this monitoring is undertaken by an independent organisation with the necessary expertise.
Failure of plant or equipment occurs during the lifetime of the well.	These are normally low likelihood events with consequences that can range from a minor to a catastrophic release of gas for a relatively short period over the life of a well.	These failure events can be mitigated by ensuring compliance with appropriate regulations, including undertaking rigorous risk assessment and ensuring that a formal leak detection and repair program is undertaken regularly.

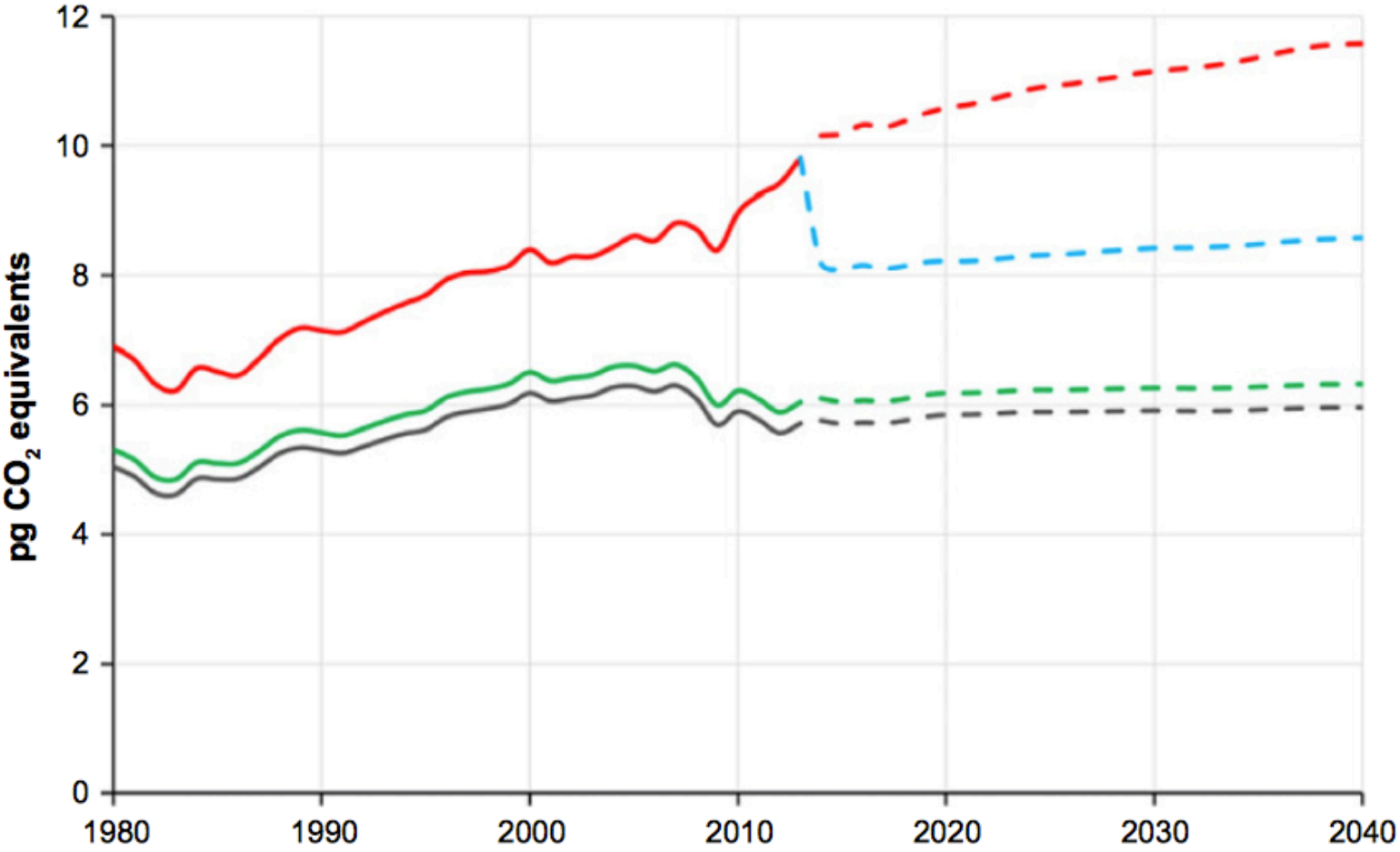


Figure 3 Trends in greenhouse gas emissions from fossil fuel use in the USA from 1980 to 2013 and future trends predicted until 2040 based on historical energy use and energy predictions in the *Annual Energy Outlook 2015*.[1] Shown are: emissions just for carbon dioxide (gray line); emissions for carbon dioxide and for methane using EPA assumptions, which undervalue the importance of methane (green line); emissions for carbon dioxide and methane based on emission factors for conventional natural gas, oil, and coal from Howarth et al,[11] mean methane emission estimates for shale gas of 12% based on Schneising et al[36] as discussed in the text, and a global warming potential for methane of 86 (red line); and future emissions for carbon dioxide and methane based on the same assumptions as for the red line, except assuming that shale gas emissions can be brought down to the level for conventional natural gas (blue line). Historical data are shown by solid lines; dashed lines represent future predictions.
Abbreviation: EPA, Environmental Protection Agency.

"Nonetheless, methane emissions from shale gas can be reduced to some extent. I suggest that the best-case scenario would have these emissions reduced to the level for conventional natural gas, or ~3.8% for the full well-to-consumer life cycle. "

Robert w Howarth (2015*) Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development: implications for policy,* Department of Ecology and Environmental Biology, Cornell University, Ithaca, NY, USA

and 3.9%, respectively, for conventional gas and shale gas. EPA subsequently reduced their estimates for upstream emissions, cutting them approximately in half, relying on a non-peer-reviewed industry report[24] asserting that the 2011 estimates had been too high.[12,25] This yielded a full life cycle

Brisbane Times

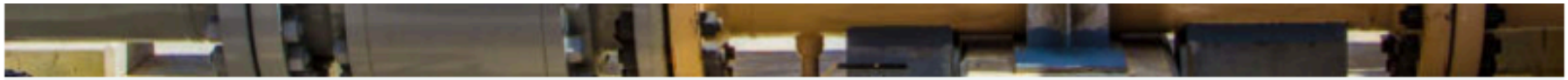
ENVIRONMENT CLIMATE CHANGE

Top End shale gas development would blow Australia's carbon budget, TAI says

By Peter Hannam

Updated 5 February 2018 — 1:13pm, first published 4 February 2018 — 12:15pm

Developing the Northern Territory's onshore shale oil and gas resources could release the equivalent of 34 billion tonnes of carbon emissions, equal to 60 times Australia's current annual carbon pollution, according to The Australia Institute.



Gas leaks are inevitable - and likely huge - from the coal seam gas industry, a submission by The Australia Institute says.

Photo: Glenn Hunt

The submission challenged the inquiry's use of a single 365 petajoule per year shale gas field producing the equivalent of 5 per cent of Australia's national emission to conclude the industry would have only a "low" consequence and to be of "acceptable" risk.

"Even a 5 per cent increase in Australia's emissions from a single gas field is a large and unacceptable increase," the submission said. "It is completely inconsistent with Australia's carbon budget and our commitments under the Paris agreement."

Elon Musk's Tesla and SA Labor reach deal to give solar panels and batteries to 50,000 homes

BY POLITICAL REPORTER NICK HARMSEN

UPDATED YESTERDAY AT 3:36PM

PHOTO Salisbury North resident Des Jenkins and his family are the first to receive the Tesla solar scheme.

“World best” regulations

Alberta Energy http://www.energy.alberta.ca/NaturalGas/944.asp

Given shale resources very early stages of development in Alberta, it is not yet known what portion of these resources can be economically produced.

Alberta has extensive experience in the development of energy resources and has a strong regulatory framework already in place. Shale gas is currently regulated under the same legislation, rules and policies as conventional natural gas. Although shale gas development in Alberta has not been using horizontal multi-stage fracturing extensively, Alberta does have considerable experience with hydraulic fracturing. Approximately 174,000 wells have been hydraulically fractured in Alberta since the technology was introduced more than 50 years ago.

Shale gas: regulatory regime in Alberta and British Columbia

Gowling WLG

Canada | May 1 2015

"Shale gas exploration and production in Alberta and British Columbia is governed by numerous statutes, regulations and policies. Currently there are no statutes specifically tailored to shale gas operations. Shale gas is largely regulated the same way as other natural gas production, which is through the enactment of regulations and rules by the primary regulatory agencies. "

In 2012, Environment Canada requested that the Council of Canadian Academies provide a report on the "state of knowledge of potential environmental impacts from exploration, extraction, development of Canada's shale gas resources" and the "state of knowledge of associated mitigation options."70

The key findings of the report are that, while technologies and techniques are generally well understood, more research is required with respect to potential environmental impacts of fracking, the data about which is neither sufficient nor conclusive. Further, the report highlights the importance of accounting for regional differences in ecosystems and geologies when determining appropriate management and regulation of shale gas development.71

The Oil Man: Falcon Oil & Gas, Ascent Resources

*By **Malcolm Graham-Wood** | Tue, 18th July 2017 - 10:43*

“Mr Gunner has said that when the decision is made it will be taken only by the cabinet and the government and "solely on the recommendations of the Pepper enquiry”. The two choices appear to be, as might have been expected, either a ban on fraccing or to allow it in a highly-regulated manner in tightly prescribed areas. With the economic argument backing up an approval, it would seem to me that a 10% override with social and scientific backing is enough to sanction the process.”

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Questions

- In relation to new technologies and practices to reduce greenhouse emissions, can you elaborate. And why was this analysis limited to this Skone et (2016) al analysis - Dr Vaughn Beck AM
- In relation to regulation why is Alberta used and example for Shale when it is CSG

Submission on the Draft Final Report of the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory

Billee McGinley

I have introduced myself in detail previously, at the hearing held last year and also the following community meeting in Humpty Doo following the hearing last year after the release of the preliminary report. I am not a fly in fly out activist; my concerns about fracking are not based on anxiety. I am qualified and have practiced as a scientist in the area of natural resource management, having lived and worked in the Northern Territory for the past 17 years. These companies you seem to be handing fracking to on a silver platter are fly in fly out profit driven, environmental vandals, and criminals (http://www.smh.com.au/business/energy/chilling-tale-of-origin-energy-whistleblower-20170124-gtxuhz.html).

At the last hearing I discussed Ecological Sustainable Development, ESD. And reflected on the ESD history in the Territory, and gave the opinion that this has not been enforced on a number of occasions where it should of been, or ever been enforced. There seems to be no stop on development no matter the risks, certain or uncertain. The Territory has become an environmental crime scene. The stop button needs to be pressed now on this crazy process of hydraulic fracturing. I still believe an assessment of ESD should have been more of a focus in this inquiry, which I know it has been addressed, and the implementation of precautionary principle needs to be given some more serious thought. There seems to be so much uncertainty about this industry and regulating it. But I wont go into that today. We have come too far for that now.

At the last hearing after the release of the preliminary report I questioned this sentence at the beginning of the interim report

"This revolution turned the US from an energy importer into an energy exporter. It transformed the energy market in North America and significantly affected world trade in gas and oil. But in some instances, this transformation took place in jurisdictions that were poorly regulated, resulting in significant environmental damage."

I asked for your justification or references in regards to your premise that only poorly regulated jurisdictions practicing hydraulic fracturing have associated issues impacting tragically on environments, life systems, and people health, therefore allowing you to tap on the end of your risk analysis magical "best practice" regulations as mitigations of these risks. Unfortunately, a key purpose of the inquiry. I did not receive an answer to this from the panel in your response at the time of the hearing due to me losing sight of it. So, I followed this up with you at the community forum held in Humpty Doo. I felt the sentence set the scene for the whole inquiry from the outset, saying it can be regulated before the inquiry even began. The sentence has been repeated in a reworked form in the final report, at the beginning:

"In the United States of America (US), the 'shale gale' gas revolution turned the US from an energy importer into an energy exporter. It transformed the energy market in North America and significantly affected world trade in gas and oil. But with this change came cost. In some jurisdictions the industry developed in a virtual legislative lacuna, with poor regulatory governance resulting in even poorer environmental outcomes."

Again no references were cited to back up this statement, conclusion. At the last hearing I asked what report you could provide or more information or an analysis of all the jurisdictions undertaking ‘shale gas’ hydraulic fracturing over time, their regulatory frameworks, and detrimental environmental and health incidents that have occurred because of this industry to justify this bold statement.

The inquiry sets out to assess if regulations can mitigate risks to an acceptable level, not conclude positively from the onset. Why not just go with the previous inquiries commissioned by NTG CLP government? But the purpose of this inquiry is also to engage widely with the community, other stakeholders, organizations, industry, environmental advocacy groups, and importantly indigenous communities that are most at risk, and hopefully get more than this one eyed view.

As I was leaving the Humpty Doo community meeting last year, Justice Pepper approached me independently and quietly told me that she would not be changing this sentence in the report. If this sentence will not be changed it is essential references are supported to support this very bold statement.

No doubt this inquiries conclusions are serving up shale gas production in the NT on a silver platter to NTG and oil and gas companies.

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"Having regard to the substantive weight of agreed expert opinion, the Inquiry finds that there is no justification whatsoever for the imposition of a moratorium on hydraulic fracturing in the NT."

The primary and most raised issue is that of water, particularly between fracced shale formations and aquifers, this has been considered to be 'low risk' due to the distance between the two and low permeability of the intervening strata.

Anyway, lets get on to some more specific things, and examples of this smoke and mirrors approach of dealing with the risks of unconventional extraction and production and use of shale gas in this final draft report.

Lets start with your recommendations on a very important matter, climate change, and justifications for these.

This section references:
Skone et al (2016) *Life cycle analysis of natural gas extraction and power generation.*
Produced by the National Energy Technology Laboratory (NETL), part of the U.S. Department of Energy (DOE). Hardly an independent and trustworthy source, with a strong history in the formation of the oil and gas industry, and continuing justification for it in the face of climate change, and many other sincere environmental and health concerns.

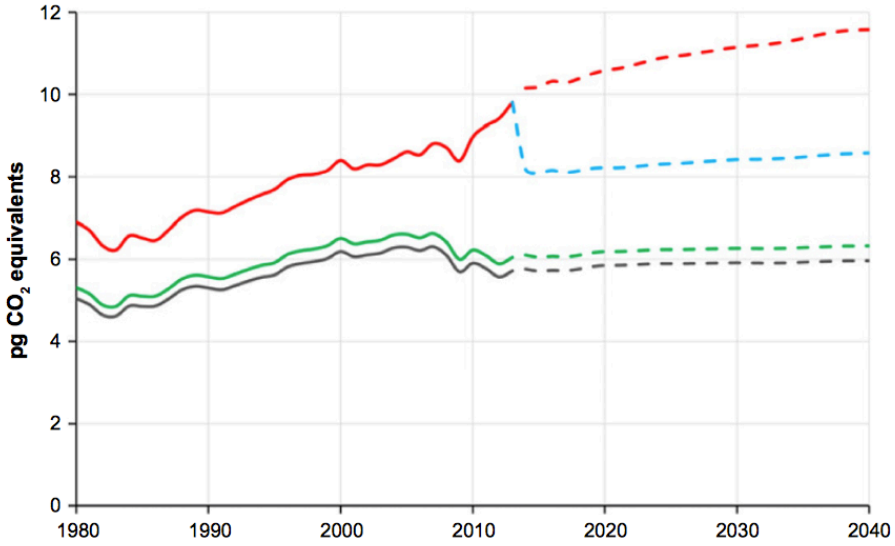
This 2016 publication reports on the reduction of Greenhouse Gases (GHG) of new technology and "best practices", giving you the evidence you need to mitigate this risk, reduce emissions to acceptable levels, or at least to make this low risk. Coupled with some US EPA reports, which have also been questioned if the inquiry were to look further.

Having a look at this Skone et al (2016) report it states that (PG 196) "This modeled well scenario produced GHG emissions of 12 g COe/mJ, which are 23% lower than historical practices, and with a methane emission rate of 1.25% on a mass basis.[33]" "The power plant results are a mix of current and advanced technologies. This analysis includes fleet power plants that are representative of installed technology as of 2009 and also includes advanced power plants – with and without CO2 capture – that are representative of the latest technology but have not achieved broad commercialization." So the technology in 2016 was not broadly achieved as yet.

I found this truly amazing the world hadn't caught up with this break through in reducing greenhouse gas emissions. So I looked further than this reference, as so should of this inquiry.

I found an article on 'Drill or Drop?', "Shale gas is one of least sustainable ways to produce electricity – new report" (https://drillordrop.com/2018/01/16/shale-gas-is-one-of-least-sustainable-ways-to-produce-electricity-new-report/). It told a very different story.

So I looked further, and found this very thorough paper, Robert w Howarth (2015*) Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development: implications for policy,* Department of Ecology and Environmental Biology, Cornell University, Ithaca, NY, USA. The table below from this report tells a different story again, and actually addresses the sentiments of the US EPA, which the author states "undervalued the importance methane".



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Abbreviation: EPA, Environmental Protection Agency.

Also from the report:

EPA subsequently reduced their estimates for upstream emissions, cutting them approximately in half, relying on a non-peer-reviewed industry report[24] asserting that the 2011 estimates had been too high.[12,25] This yielded a full life cycle

And the World Bank only recently announced its end to financial support for oil and gas extraction.

World Bank

World Bank to end financial support for oil and gas extraction

Bank announces in Paris it 'will no longer finance upstream oil and gas' after 2019 in response to threat posed by climate change

Larry Elliott
Economics editor
Wed 13 Dec 2017 09.19 AEDT

There was again no mention of the NETL findings negating the issue of methane emissions in shale gas production. The Greenpeace International climate campaigner Gyorgy Dallos said: "The end is clearly coming for the oil and gas industry as the pace of change accelerates." Dallos said the Bank had sent a damning vote of no confidence in the future of the fossil fuel industry. "The world's financial institutions now need to take note and decide whether their financing is going to be part of the problem or the solution," he said.

The Australian Institute have also presented to you at this hearing more contrary information to the panels conclusions, and shortsighted investigations on the issue of climate change. And this is just one area of the inquiry, and hard one to say you can mititgate unless the panel picks and chooses the “right” information.

Please again consider the real risk and stop using your imaginary magical world best practice regulations as smoke and mirrors. You have a big responsibility in this area of recommendations. We have had the hottest few years on record. Still the NT is considering being part of the problem.

I know the panel is not making the final decision to frack or not in the NT, but you are providing the NTG with recommendations and guidance. If the NTG already know they want to frack, which has been indicated and heard by many, then it would be a greater injustice if they went against the findings of the inquiry.

The ‘Oil Man’ said “Mr Gunner has said that when the decision is made it will be taken only by the cabinet and the government and "solely on the recommendations of the Pepper enquiry". The two choices appear to be, as might have been expected, either a ban on fraccing or to allow it in a highly-regulated manner in tightly prescribed areas. With the economic argument backing up an approval, it would seem to me that a 10% override with social and scientific backing is enough to sanction the process.” (http://www.iii.co.uk/articles/430044/oil-man%3A-falcon-oil-gas-ascent-resources)

This inquiry sets out from the beginning that good regulations reduce risks, and appears to have a deliberate outcome, painting a picture, filtering facts, and laying them down without real comparison or interrogation. And I keep hearing people say the panel hasn’t listened to the public, which is what is meant to makes this inquiry unique from previous inquiries.

There is a huge amount of information to digest, and a lot of research to do to make sense of the findings of this inquiry, too much for little old me to take on right now. It is easy to get lost in it, but unfortunately everywhere I look in this report I have concerns.

Whether the regulations are tight, these companies can’t be trusted to act. They can’t be trusted at all. It won’t work. So strip away your safe guard of a well-regulated industry, there is going to be more if not unprecedented environmental devastation for our NT landscapes.