

From: Martin Novak
To: info@frackinginquiry.wa.gov.au
Subject: Submission to the independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in WA 2017
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To: The independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in WA 2017

Date: 19 March 2018, Perth: 4pm

info@frackinginquiry.wa.gov.au

Dear Panel

My name is Dr Martin Novak.

I am sending you this so you can include it in your review of Hydraulic Fracture Stimulation in WA.

I am writing to:

- (a) <!--[endif]-->recommend **lifting of all bans and moratoria** on unconventional gas (and oil)
- (b) <!--[endif]-->**oppose all new bans and moratoria** on unconventional gas (and oil)

I am a scientist (PhD in Geophysics) and have an education and an interest in many matters relating to the earth.

I am also an environmentalist and a humanist. I place a high value on the protection of the natural environment and cultural heritage. I value plants, animals and places, water, food, air, biodiversity, rural and natural landscapes. I eat and value organic food, drink clean water and support planting of trees and vegetation. I oppose indiscriminate overbuilding, over-fishing, pollution, destruction of our lands, landscapes, clean water, our living and recreational spaces. I also like our climate. I furthermore respect all peaceful and truthful people and their culture including Aboriginal (with their connection to country) as well as our modern people.

Finally I am a pragmatist. I realise we need energy for practically everything we do. I realise there is a marketplace. I realise the limitations of science and as a truth-seeker I don't want us to be guided by false beliefs, incomplete science, fear or conflict.

Though my long experience of our industry I have no doubt that fracture stimulation (fraccing/frac'ing/fracking) can be done safely without unacceptable impacts on my strong values - which I think are actually fairly central in the public spectrum. As you see below this applies especially so in WA.

Fracture Stimulation (FS) - Summary:

- **FS is not new. Close to 2.5 million wells have been fracture stimulated over the last 60 years or so, most in North America. Despite being the most litigious country in the world the industry is welcome and flourishing. Land owners are supportive. There has been little by way of litigation, or substantiation of activist claims as to widespread environmental damage.**
- **Nor is FS new in WA. (over 500 wells stimulated) and just across the border into SA FS has been used over the last 40 years in the Cooper Basin where the local beef producers are producing certified organic beef.**
- **Most fracture stimulation is done at great depth. We are talking about 1 – 3 Km depth. The fractured rock is generally within 300m of the well providing between 700 and 2.5 Km of solid rock above. Water tables are usually confined to the top 100-300 m. The wells use multiple steel casing for extra safety. The casing is cemented in place.**
- **There is negligible difference in impact on the land use when compared to non stimulated oil & gas wells. Operations are confined to small areas (drilling pads) and roads. The overall land use is small compared to agriculture. In the most part it is not competing with agriculture for land use.**
- **Multiple credible inquiries have returned almost the same assessment of unconventional exploration and on the use of fracture stimulation: When engineered correctly and applied within a well-regulated regime, it is no different to any other form of drilling.**

Political Summary:

- **There have been no catastrophic impacts from fracture stimulation the eNGOs warn against or predict.**
- **Gas production in the US has risen, mainly due to production from tight reservoir rock, assisted by horizontal drilling and fracture stimulation. This has been a huge benefit to the USA driving down their emissions by around 20% over the last 10 years or so.**
- **It has also benefited the US in achieving self-sufficiency in energy, giving them control over their energy supplies (essential), and improving their financial position through a reduction of imports of energy and a growth in energy exports.**
- **Australia's abundant energy supplies in the form of hydrocarbon resources could achieve similar energy self-sufficiency across all States in Australia. Gas production can earn huge income in taxation, and can improve our balance of payments through greater exports and lower imports at both State and Federal level**
- **Our gas supplies could substantially reduce emissions and lower electricity prices.**
- **Gas could provide cheap energy to support the State's manufacturing and to provide a stable, predictable and plentiful energy supply to homes and industry.**
- **If used for export, many LNG plants are built and ready to generate funds. If used domestically gas can supply homes and industry for aluminium, steel and other manufacturing requiring high supplies of energy.**

Climate / Environmental Summary:

- **There is increasing research that suggests climate models are too simplistic and**

inadequate. So simplistic that they do not and cannot predict future temperatures correctly. The subject is much more complicated than the science assumes. Today, 99% of models have consistently over-estimated how much the temperature will increase.

- Our current models are incapable of predicting temperature variations of the past, before 1900. They must be able to do this if they are to be valid.
- CO₂ has been blamed for increasing temperatures. However this appears to be incorrect as CO₂ levels have historically followed temperature changes i.e. temperature actually drives CO₂, not the other way round.
- Current research shows that it is the interaction between cosmic radiation and the activity of the sun, (and its magnetic field), manifested through the combination of the solar cycles and the sun's activity with the earth's magnetic field that provide the greatest impact on the formation of clouds (though creation of aerosols) and thus forces the heating and cooling of the atmosphere.
- Carbon and Carbon Dioxide (CO₂) is an essential building block of life, of our food supply and of all organisms. Our CO₂ levels are just above the level of mass plant extinction. The earth needs to and has been greening in the past 10 years most likely due to increased CO₂ in the atmosphere.
- Sun spot activity in the current and next cycle (24, 25) are expected to decrease, resulting in colder weather and cooling of the planet, perhaps for the next 12 years. Thereafter the solar cycles may continue to cool the earth. The exact scenario details are too difficult to predict with uncertainty. However if cooling does occur, experience tells us that cooling of 2 degrees is much more dangerous than warming since it damages crops and kills more people than equivalent warming.

Right now it is the climate science that is poorly understood, not the engineering science for gas extraction.

It is unconscionable for one industry to prevent another industry from existing. Would it be acceptable for the fishing industry to close down parts of the farming industry, or for the tourist industry to close down the fishing industry?

Nor can we use the argument that any risk, no matter how small is sufficient to close down the industry. The oil industry wants to be trusted, wants to be reliable, and wants to have a clean and safe record. The airline industry suffers crashes, some fatal. Do we ban the airline industry? No, we learn from all errors and have positive regulation with a strong oversight to continue providing a service that people want and need.

For all our industries, a well thought out strong regulation is the key, and this is what intelligent people in government have been asked to do. And as WA has previously been independently voted among the top 3 **regulators** in the world for unconventional and tight gas (where fracture stimulation is required) WA is in a strong position to enable the industry to undertake its operations within a fair and well regulated framework. We all have to live and operate together and good regulation is one of the mechanisms that ensures a level of risk that is as acceptable and as low as reasonably practical (ALARP).

Currently **ideology** is driving the push toward renewables. Unfortunately that same ideology is not concerned with the needs of industry, or peoples' standards of living: Industry relies on

abundant, affordable energy for production and manufacture. And people are concerned with having a reliable and affordable power supply. As per the South Australian experience, higher unreliability in the State's electricity supply has occurred because of an ideological bias and lack of interest in the needs of business and the majority of people. The result for SA is lost business, loss of revenue, damage to goods (spoilage), hindering of essential services (hospitals) and potentially even death.

In addition to its unreliability, SA now has some the highest electricity prices in the world. This is hurting poorer families and our older people and driving business out of the State.

WA is a leader in the supply of minerals world-wide as it is in other industries and has achieved envious major growth from these activities including hydrocarbon fuels (one of our biggest export products is LNG). To undermine this position through unfounded and un-scientific fears and turn our back on what has successfully enabled WA to grow and become strong and prosperous will be noted as dangerous and foolhardy.

Therefore, I call on the Independent Scientific Panel Inquiry to recommend a lifting of all bans and moratoria on unconventional gas (and oil) and to encourage and support the extraction industries in generating domestic and export success for all Australians within a well-regulated framework.