

Submission to the Victorian parliamentary inquiry on Onshore Unconventional Gas

Thank you for providing an opportunity to contribute to the inquiry. I provide this submission from a background of 40 years of involvement in medical research and an abiding wish for Victoria to grow and flourish with a strong economy and an optimal environment for my children and their children.

A central principle of medical research and development has been the primacy of evidence as a path for correct decision-making. During my professional career medical care has progressed enormously by collecting the evidence, analysing it in an objective and rigorous fashion and then implementing the measures that can be shown to be effective and discarding those that are shown to be ineffective. This is commonly referred to as evidence-based medicine and has permitted major improvements in health and quality of life.

But it has not been a smooth path. Medical history is littered with false claims. Most of these happily die an early death but those that survive long enough to have a negative impact have characteristically used fear, urgency and intolerance of debate as their drivers.

As just one example, we can look at the view established in the 1950s and continued to the end of the 20th century that dietary cholesterol was leading to a potentially catastrophic epidemic of heart disease. Foods containing cholesterol should be excluded from the diet immediately, the experts led by Dr Ancel Keys stated dogmatically. It culminated in US Senate committee in 1977 recommending against dairy, meat and eggs. People were pushed to other foods and have ended eating too much sugar instead. The harms to people's health and to the farming and secondary food industries have been considerable. And yet the belief wasn't true. The evidence had been distorted to fit the belief. Dietary cholesterol is not a significant driver of heart disease. The myth grew on fear, urgency and intolerance. It has taken more than 50 years to bury that myth.

Fear, urgency and intolerance are powerful weapons. And I see these being applied to drilling for unconventional gas and oil.

Victoria has been in a state of indecision regarding onshore unconventional gas for several years. I contribute to this debate as one who is not an expert in unconventional gas exploration but as someone who is able to look at the evidence, understand the fears, but accept what the evidence shows. From this position I see strong support for encouraging onshore gas exploration and development.

I encourage the panel to apply this same approach to their task at hand. The community want the health professionals to provide them with better health in ways that are cost-effective and safe. The community want the government to provide them with better well-being for the people through economic growth and developments that are cost-effective and safe. And we need to recognise and manage the anxieties and fears that can seek to deny that action is needed. But, at the end of the day, we must do what we know is best.

A range of arguments have been raised against hydraulic fracturing as a key component of unconventional gas and oil exploration. Some of these have some validity and need to be

considered carefully. The evidence needs to be weighed and risks need to be covered by safeguards and regulations. The potential for harm to the community and the environment must be balanced against the potential benefits to the community and the environment. Several other of the arguments lack substance and even lack common sense yet are still being given voice and apparent legitimacy through interest groups and media attention.

There seems to be little argument that greater availability of gas would be beneficial to Victoria's industry and people. I make the following points:

- Nuclear energy and renewable energy sources such as wind, solar, hydroelectric and geothermal are likely to become important in the long-term but it is not known just how important they will be and how many decades into the future before they provide most of our energy needs. In the short-term these sources cannot provide a predictable supply of sufficient energy for the domestic and industrial needs of Victoria. We need to provide for the Victorian people today.
- Brown coal is used to provide for approximately 85% of Victoria's electricity needs. Brown coal generates three times the greenhouse gases per kWh of electricity as natural gas. We need this cleaner form of energy now if at all possible.
- The Victorian State Department of Energy and Earth Resources website correctly states: *"Gas is an essential part of the transition to a low carbon economy While most of the decisions relating to investment are made by the private sector on normal commercial grounds, we play a key role in facilitating those investments and delivering on the ability of the sector to provide gas as a safe, affordable and reliable source of energy"*.
- The gas is there, waiting to be accessed. Development of the unconventional gas resources of Victoria is arguably the most powerful single action available today to improve Victoria's industry, employment and competitiveness.
- We can learn much by examining the outcomes of unconventional gas and oil development in the United States. They have led the world in this area and we can see the benefits and the fears that have accompanied this growth. In a detailed analysis by Michael Porter and colleagues from Harvard Business School and Boston Consulting Group, they estimated the industrial growth derived from unlocking unconventional gas and oil in the United States has added US\$430 billion to the annual GDP and more than 2.7 million jobs, along with consumer savings and increased government revenue (1). Extrapolating these effects to Victoria, we could expect an increase in annual GDP of AU\$ 9.2 and 4,500 more jobs and a saving of \$1000 per year in household energy costs.
- Porter et al also recognize the fears that have been generated in the community and recommends responding to these by encouraging transparent and consistent performance data, robust regulatory standards and compliance, and efforts towards continuous improvement in environmental protection.

In Australia, the seemingly obvious need for development of gas has not been proceeded with largely because of concerns with hydraulic fracturing. The concerns relate principally to local environmental issues of groundwater contamination, high fresh water use, waste water disposal, land degradation, seismic effects and the presence of heavy industrial processes within quiet rural communities. Surprisingly, concerns have also been raised by those promoting the renewable energy systems especially wind farms, presumably because replacement of coal for gas as the prime

generator of electricity could provide an “acceptably” low carbon emitter as an energy source and so may delay development of the renewables.

The most emotive and powerful of these various fears has been the contamination of ground water. The farmers and their communities are most vocal about this concern. Just as they have quite rightly become increasingly concerned about the effects of their fertilizers and pesticides on the ground water and surface water, they are now seeking to minimize further harm.

It is a legitimate concern but it has been addressed in great detail. Multiple reports and analyses of the effects of unconventional drilling for gas and oil are now available and I expect that some of these have been provided to the inquiry. To my knowledge they are consistent in their key finding of minimal risk. The one that is arguably the most powerful and current is the report by the United States Environmental Protection Agency (EPA), entitled Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources which was released as a draft in June, 2015.

The EPA has a primary mission to protect human health and the environment. It commenced study of hydraulic fracturing in 2010 at the request of the U.S. Congress and, in view of its primary mission, would have been expected to approach this task in a highly critical manner. It has enormous resources for study and analysis at its disposal. Over the last 5 years, it has examined over 1,400 published reports, accepted further information from an additional 2,300 sources and provided a two year period for community submissions. It has now published an Executive Summary of 25 pages and a full report of 998 pages (2). I doubt there is a better evaluation possible. And, in summary, it advises that hydraulic fracturing poses minimal risk to groundwater, with the few instances of contamination being linked to errors by not following accepted techniques and regulations.

At the heart of the debate, it is clear there is so often no proper debate. The issue has become heavily politicized. Fear is used as a tool. The presentation of “facts” has been distorted. Risks have been minimized by some and overstated by others.

The panel has the opportunity to step past those distractions, examine the evidence in an objective and logical manner and make the recommendations that provide for the best future of all Victorians.

References

1. Porter, ME, Gee DS, Pope, GJ. America’s unconventional energy opportunity: A win-win for the economy, the environment and a lower-carbon, cleaner-energy future. Accessed at <http://www.hbs.edu/competitiveness/Documents/america-unconventional-energy-opportunity.pdf> on 9th July, 2015.
2. Environmental Protection Agency (EPA). Assessment of the potential impacts of hydraulic fracturing for oil and gas on drinking water resources. June 2015. Accessed at <http://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651> on 9th July 2015