

# **Towards 2050: Gas infrastructure in a zero emissions economy**

## **The 4 Scenarios**

Scenario A: full electrification, no natural gas (by 2050), no CCS

### **This is the only way forward.**

- CCS is failed technology. It is not new technology - it is just a deliberate distraction pushed by vested interests. CCS has been played with for more than 25 years, with more than \$1B of Australian taxpayers' money spent, with no good result.
- Carbon offsets are also a distraction and an accounting fiddle with no significant impact on global CO<sub>2</sub> emissions. While they be of some use, that use is very limited.
- Biogas has limited applications and is commendable in that it reduces methane emissions. It can supplement the total energy mix and be part of the biomass solution for chemical feed stock. Biogas is unlikely be a big player in renewable energy as wind and solar are much more efficient.

Scenario B: partial electrification, limited natural gas use (in 2050), limited CCS

Scenario C: green and blue hydrogen with carbon offsets, electrification, no natural gas (by 2050), no CCS

Scenario D: large-scale brown hydrogen, large-scale CCS, no natural gas (by 2050)

## **The 9 questions for consideration :**

1. Do you have any further information, evidence or concerns that you wish to raise in relation to the scenario design and analysis?

No comment.

2. Do you have any further information or evidence that can help identify an optimum scenario for a net zero emissions gas sector in 2050?

No comment.

3. What policies and/or regulations, if any, are needed to support the development of low carbon pathways such as biogas, green hydrogen, and carbon capture and storage?

There will be a range of policies that need to be developed to wean households (in particular), industry and power generation off gas. It is essential that these **policies have a high degree of bipartisan support.**

4. What is your view on the best ways to maintain the reliability and affordability of Victoria's gas supply if natural gas use declines?

A rapid development of renewable energy and storage. In particular, off-shore wind is becoming the most obvious to be encouraged and accelerated.

5. What else can you tell us about the implications of decarbonisation pathways for the electricity generation, transmission and distribution networks?

Over the next 20 years the capacity of the Victorian electrical power grid will have to double to accommodate the shutting down of the natural gas supply, plus the transition to EVs.

6. How can the use of Victoria's existing gas infrastructure be optimised during the transition to net zero emissions, over the short (10 years), medium (20 years) and long-term (30+ years)? How can the Victorian Government assist in this?

The Victorian Government will not be assisting the existing gas infrastructure in the next 30 years. It will be managing a "death spiral". This is similar to the death spiral of coal fired power plants from which we are currently transitioning.

7. What principles should apply or what measures will be needed to manage the impacts of gas decarbonisation on households and businesses?

The principles are:-

- incentives to change
- compensation for imposed changes
- legislation to force change where the market is not working
- changes in regulations to make it very difficult to add new natural gas users to the network.

8. What policies, programs and/or regulations should the Victorian Government consider or expand to encourage households, commercial buildings and small businesses to reduce their gas use?

There is a lot of "low hanging fruit" to reduce gas consumption quickly (2 to 3 years).

- City council use of gas in buildings and swimming pools. These can be converted to an integration of solar, batteries and heat pumps.
- Similarly with hospitals, schools, prisons and so on.

The transition of free standing homes from gas to electricity will require a lot of publicity/education. Incentives will include increased gas prices and a future of supply disruption, as well as subsidies for conversion from gas to electricity.

There will need to be incentives and development of new solutions that are not currently available but for which the basic technology does exist. For example, many homes and apartments currently have gas fired integrated hot water and hydronic heating but there is currently no suitable integrated heat-pump solution to replace the existing units. There are probably other examples of where engineering solutions need to be developed using existing basic technology.

Legislative changes are needed to the retailing of electricity to apartments. Currently, a complex of 100 apartments will have a separate retail power supply agreement to each apartment. There are 100 power meters that are owned by the power distributor (CitiPower, United Energy or other) that are used for billing. The power meters need to be the property of the Owners Corporation (OC) of the apartment complex so that the OC can pay from a single meter and distribute the payment to the individual owners. This will allow OCs to install roof top solar and batteries. This will add additional capacity to the grid for no extra cost to the generator. It will also add stability to the grid when the grid operator has "smart" control over roof top solar and batteries and can distribute the power within the apartment complex. There will need to be compensation for the income derived from the ownership of the power meters.

9. What policies, regulations or other support, if any, do you think are needed to support industrial users to switch from natural gas to lower emissions energy sources or chemical feed stocks?

Many industrial users will be able to transition to electricity but will require incentives and, in some instances, technical support

The original source of chemical feed stock will be biomass.

The biomass will be processed to produce feed stocks that can be used in industry such as :-

- methane
- starches
- ethanol
- sugars

There will be some industries in Victoria where electricity can meet only some of the needs and gas will be required for the industry to continue - glass, cement and metal processing. In these industries the production of green hydrogen on site or close to the site will be required.