**Submission template**

**Date submitted:** Jul 19, 2021, 02:08 PM

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**Stakeholder group/interest:** Home Owner (with Gas central heating, hot water and cooking), and consulting engineering into Food Manufacturing

**Q1. Do you have any further information, evidence, or concerns that you wish to raise in relation to the scenario design and analysis?**
A carbon tax is needed to equalise the carbon footprints of Natural gas, renewable electricity, and brown electricity.

**Q2. Do you have any further information or evidence that can help identify an optimum scenario for a net zero emissions gas sector in 2050?**

**Q3. 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?**
A carbon tax is needed to equalise the carbon footprints of Natural gas, renewable electricity, and brown electricity.

Thermal efficiency of Victoria homes needs to be tightened, and greater emphasis placed on insulation of buildings, and total energy requirements (ie a 400M2 McMansion uses more energy to heat than a 200M2 bungalow).

More publicity for the use of heat pumps over Gas central heating.

**Q4. What is your view on the best ways to maintain the reliability and affordability of Victoria's gas supply if natural gas use declines?**
Inject "Tempered / Odourised Hydrogen" & Biogas Methane into the Natural gas network.

**Q5. What else can you tell us about the implications of decarbonisation pathways for the electricity generation, transmission and distribution networks?**

**Q6. 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?**

**Q7. What principles should apply or what measures will be needed to manage the impacts of gas decarbonisation on households and businesses?**
The carbon emmissions of all energy sources need to be costed into the energy costs via a carbon tax / price.

**Q8. What polices, programs and/or regulations should the Victorian Government consider or expand to encourage households, commercial buildings and small businesses to reduce their gas use?**
Household insulation,

**Q9. 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 feedstocks?**

The cost of changing from gas to electricity is very high when used in industrial applications. HV infrastructure required to convert a medium sized boiler (say 1MW) will need 100s of thousands of dollars of electrical infrastructure to install (no including the cost of a new boiler). Black-outs and power blips need to minimized to avoid damage to large boilers and other gas appliances.

**How would you like your submission treated?**
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