SUBMISSION TO 'VICTORIA'S GAS SUBSTITUTION ROADMAP' 30TH JULY 2021

Key issue 1 Maintaining electricity reliability with new sources of demand

•□What policies are needed to ensure that the electricity network can reliably serve new sources of demand from hydrogen production, electric vehicles and electrification of gas demand?

The reliance on gas should be reduced as the expansion of new electricity generation expands. With reduced demand there should be sufficient supply for new uses of gas, especially if electricity generation is developed alongside demand eg at hydrogen production site. Rooftop PV can allow EV charging during middle of the day, or at night using battery.

We need policies to support new generation, meaning that new sources of power production have been and are being developed. Utility PV, rooftop and floating solar, onshore and offshore wind, pumped hydro, bioenergy, geothermal, gravitational and air compression are underway. It is possible that other sources such as heat recovery will be significant in the future.

We need policies around regulation, EV charging points, community energy, reuse/recycling of discarded solar panels and methods of electricity storage

We need policies to govern utility and supply price control

The Victorian Climate Change Strategy is a excellent document. It outlines the actions needed to reduce emissions, including phasing out fossil fuels, to help avoid the worst impacts of climate change.

•□What is the role for gas-fired power generation and hydrogen in maintaining electricity reliability?

There has been modelling by bodies such as Climate Council and Grattan Institute to show that there with rapid new generation and storage there will be little to no need for gas generation. Hydrogen could provide supplementary power when other storage options are depleted.

Bass Strait gas is expected to be available until 2040s, and I hope that there is little need for gas by this date.

Key issue 2 Transitioning to more sustainable gaseous fuels with minimal disruption to end users

•□What are the key technical challenges in converting existing gas networks to accommodate more sustainable gaseous fuels?

The main challenge is probably for high temp industry where gas is currently difficult to replace. Those industries which are just commencing such as recycling and the Chunxing used lead acid battery plant should be encouraged to seek alternative sources of heat.

•□What are the potential costs and opportunities in switching to more sustainable gaseous fuels for consumers?

My preference is to use renewable electricity for all possible purposes to minimise greenhouse gas emissions. This includes users not connected to a pipeline. Victoria is being impacted by intense heat, bushfires, drought, floods, change of seasons and coastal erosion. There are more opportunities in switching to clean energy than switching to new gas.

Microgrids and community energy could be the solution for smaller communities and end of line users who are often isolated during emergencies.

Key issue 3

Maintaining the **reliability, affordability and safety** of gas supply

•□What are the affordability, reliability and safety considerations related to gas supply and gas infrastructure, both in the short term and during a long-term transition to a decarbonised gas sector?

Victorian gas supply has suffered from the development of export gas industry, causing a price rise for everyone. I have reduced my household use by installing a reverse cycle air conditioner for heating, an instantaneous gas hot water and trial portable induction cooker. With my rooftop PV, the small gas bill is more than offset by the feed-in tariff, which has resulted in an electricity credit of up to $500. I plan to buy an electric vehicle to use as a battery when EVs become more affordable.

Safety considerations must consider the age and condition of infrastructure and appliances.

•□What policies are needed to ensure that the gas system continues to operate reliably and safely and remain affordable for end-users during this transition?

Testing and compliance as hydrogen is blended into the gas supply.

Key issue 4 Supporting Victoria's workforce, industry and the institutions that support them

•□What workforce skills and industry capabilities are required to transition to new and emerging energy sources?

•□How can government, industry and unions best work together, including through the Victorian TAFE and Training system, to help to build these skills and capabilities, and support existing workers through the transition?

New courses to train and retrain workers are already happening, in conjunction with the solar and wind industry. Coordinated training should be offered across many Victorian sites to allow easy access for students. It is essential that training institutions collaborate with other states to ensure that Vic qualifications are acceptable nationwide.

•□How do we maximise local job opportunities, including for industry training centres such as that operated by the Plumbing Industry Climate Action Centre, to prepare workers for the future?

Local job opportunities will be guided by developments eg Star of the South is expected to create 10,000 jobs in construction and maintenance. Training and job skills will be determined by the company.

Key issue 5 Managing uncertainty in the transition

•□What key uncertainties should the Roadmap take into account, and what is the government's role in reducing these uncertainties?

Can business feel confident in investing? - Victorian commitment through the Climate Change Act and the Victorian Climate Change Strategy should encourage business and innovation to commit to investment. Unfortunately the Federal Govt has not given that reassurance.

Lack of community confidence in change - demonstrate and educate. Inform about benefits of electrification.

Is it affordable? – ensure some price control. Rebates are useful

Is current household and commercial equipment adequate? – provide reference tables and rebates where replacement is required

Indecision – Provide guidance in choosing new equipment eg HWS, PV

Are trade people up to date? - Require qualifications to be displayed

Older buildings are inadequate – educate about making building efficiency improvements

What about big users? - Much information is directed at householders but what are big users doing to reduce gas usage and GHG emissions eg hospitals, shopping centres, industry

Key issue 6 Transitioning the Victorian economy efficiently and equitably

- How can we ensure that the costs of transition to lower emissions energy sources are borne equitably?

Continue/expand the rebate and VEU. Advertise options to general public. Encourage industry to assess their needs and time of use. New industries and businesses should be obliged to use electricity if possible, to avoid being tied into long term gas requirements.

- How can we help low-income and vulnerable households manage any upfront costs in changing energy sources?

No interest loans. Work with business, social organisations to assist low income households

Build new energy efficient social housing, retrofit those which are suitable and replace those which are not suitable for renovation.

Assist landlords to improve properties and permit rebates for each property in addition to their own home.

Provide education re low cost actions eg draught sealing, window shading, appliance efficiency, energy monitoring

- What are the barriers for households in improving the efficiency of their use of gas for heating, cooking and hot water and/or switching to solar/pump hot water in existing homes?

Understanding the home's building envelope and its energy efficiency eg a leaky home is not improved by changing heating system.

Is their building multi-tenanted, unsuitable for upgrades or overshadowed?

Consider cost of replacement before it is necessary eg broken stove or HWS, to allow time to find the most appropriate appliance.

Tenancies restrict and prohibit changes to the home. Make suggestions for tenants.

- What are the opportunities for the Victorian Energy Upgrades program to incentivise efficient gas use, thermal upgrades of buildings (e.g. insulation) and electrification?

Electrification using your own PV should be the first option as this reduces grid stress, can be used for demand management, gives some energy independence and may be part of community battery/peer to peer trading or VPP scheme.

Solar Victoria provides good information, and rebates should be available for each stage of equipment upgrades ie PV, HWS, battery. Exclusion after one rebate often means that no further replacement is done. There should be an added rebate for RCAC.

The new landlord obligations to provide adequate heating etc should incentivise upgrades. There is need to clarify whether rebates are available to both their own and the tenanted property.

- What issues and elements do you see as most important to improve the energy and emissions performance of new homes?

Developers should not be obliged to install gas to each block. Regulations should allow planning for all-electric homes and developments should be able to include neighbourhood battery/EV charging option

Small blocks limit the orientation of the homes and increase risk of overshadowing

Building star rating minimum should be 7 stars, and verified routinely at building inspection, not just at planning stage.

Unprotected windows are a huge source of heat gain in summer and heat loss in winter.

Where possible, all new buildings should have PV and double glazing as standard.

Appliances need to be energy efficient.

Developers should be encouraged to consider all aspects of environmental design at planning stage eg water use, building orientation, drought tolerant plantings and shade trees to reduce urban heat island effect.

Some financial encouragement from govt or financiers would help new home buyers to invest in 'building better for the future'.