Reference: A7932109
Enquiries: 03 8571 5334

Department of Environment, Land, Water and Planning

PO Box 500 East Melbourne VIC 8002

RE: Victoria's Gas Substitution Roadmap Consultation Paper

Thank you for the opportunity to provide input into Victoria's Gas Substitution Roadmap Consultation Paper. Greater Dandenong City Council welcomes the opportunity to provide feedback, and the following letter outlines our overall comments based on Council Policy and Strategy. Please note that these comments are provided at an officer level and have not been endorsed by Council.

Greater Dandenong commends the Victorian Government for setting clear and ambitious greenhouse gas emission reduction targets in the short and medium term. We welcome and support the development of this roadmap and the need to strategically de-carbonise natural gas usage and transition towards a net zero emission economy.

Further to the below submission, Council supports the comments outlined in those submissions made by the South Eastern Councils Climate Change Alliance (SECCCA) and the Council Alliance for a Sustainable Built Environment (CASBE).

Greater Dandenong City Council – Context

Strategic Action on Emissions Reduction

The Greater Dandenong *Sustainability Strategy 2016-30* and *Climate Emergency Strategy 2020-30* are the two key strategic documents that outline Council's priorities for achieving net zero emissions.

The *Sustainability Strategy 2016-30* sets the vision for the City of Greater Dandenong to become "one of the most sustainable cities in Australia by 2030". It outlines Council's key corporate and community sustainability objectives across 10 themes, including "Climate and Energy".

The *Climate Emergency Strategy 2020-30* outlines the vision and priorities for achieving net zero emissions for both Council and the broader municipality. This includes committing to a goal of net zero carbon emissions across Council operations by 2025 and net zero carbon emissions across the community by 2040.

These strategies have informed the following key actions to be undertaken in response to the urgent need to reduce greenhouse gas emissions and transition to a renewable energy future:

Declaration of a Climate and Ecological Emergency: On 28 January 2020, Greater Dandenong Councillors declared a Climate and Ecological Emergency, recognising the significant threat posed by Climate Change to the community, Council assets and operations. This triggered Council's commitment to emergency action on climate change guided by Action Plan set out in the *Climate Emergency Strategy 2020-30.*

Sustainable Buildings Policy: Adopted in August 2020, the Sustainability Buildings Policy is a corporate policy applying to all Council owned or operated buildings. It requires environmentally sustainable design (ESD) principles to be incorporated into the design, construction, and operation of new development, refurbishments, and renewals.

A key requirement of the policy is for all new Council developments to avoid the use of natural gas. This ensures all new Council buildings are electrified and can be supplied using 100% renewable energy.

Zero Emissions Planning Scheme Amendment: In August 2020, Greater Dandenong City Council adopted a Notice of Motion supporting the pursuit of the "Elevating ESD Targets" Planning Policy Amendment led by the Cities of Moreland and Yarra, in collaboration with the Council Alliance for a Sustainable Built Environment (CASBE) and participating member councils. This includes support for the joint initiative and development of an evidence base and local planning policy, including participation in a future planning scheme amendment. The planning scheme amendment will include stronger targets across a broad suite of ESD initiatives, including net-zero carbon requirements.

A key component of the zero-carbon planning scheme will be the transition away from natural gas towards all-electric development, ensuring all new private development can be supplied with 100% renewable energy.

Renewable Electricity Supply: In 2020, Greater Dandenong (and other participating councils) entered into a Power Purchase Agreement to supply all public lighting and a number of buildings with renewable electricity. Additionally, we continue to install rooftop solar to a number of community buildings, further reducing our greenhouse gas emissions.

As emissions from electricity sources have reduced, natural gas consumption will form a greater proportion of our total emissions. This requires prioritisation of the electrification of our existing assets and buildings, which will be further informed by a transition plan scheduled to be completed in 2021.

Community Profile

The outcomes resulting from the Gas Substitution Roadmap are likely to have a significant impact on the following community sectors unique to the City of Greater Dandenong:

Industrial sector

Greater Dandenong has a strong manufacturing base across sectors including food and beverage, metal and plastic fabrication, pharmaceutical, technical, and chemical manufacturing. This provides significant economic activity with over 40% of manufacturing output generated in the region, contributing $3.2 billion to gross regional product. The area is also a strong employment hub with the manufacturing industry employing over 22,000 people[1].

The Greater Dandenong industrial sector is also the leading contributor to municipal greenhouse gas emissions. Municipal greenhouse gas emissions in 2018 were in the order of 3,950,000t CO_{2e}, with 76% of emissions associated the electricity and gas consumption of buildings. Of these emissions, 47% of emissions are from manufacturing processes and 17% from commercial

[1] Greater Dandenong Economic Development, Unit – REMPLAN data 2015.

properties (with the remaining 12% from residential properties). There are many manufacturers that are reliant on gas to support their manufacturing processes in a range of capacities.

Due to the economic significance of Greater Dandenong's industrial and commercial areas to the municipality and broader metropolitan Melbourne region, a transition away from natural gas will have varying degrees of impact to this sector including:

- Significant benefits to operators yet to realise the benefits available to them from energy efficiency and electrification through existing technologies
- Benefits to operators through emerging technologies such as hydrogen and biogas where process heat is still reliant on gas, as electrified solutions are not yet feasible or available
- A more reliable existing supply to support intensive manufacturing processes heavily reliant on gas until a commercially viable alternative fuel or technology becomes available.

We welcome the need for a transitional approach to de-gasification to industry where possible, while concurrently supporting industries reliant on gas in the short term until a zero-emission alternative become available and viable for those industries. Taking this approach will ensure our industrial community easily and safely transition towards a de-carbonised future, while remaining operational and commercially competitive.

Residential sector

Greater Dandenong is one of the fastest areas of population growth within Greater Metropolitan Melbourne. The population of the City of Greater Dandenong has increased from 160,952 in 2016 to 177,052 in 2020 (an increase of 10%), and is expected to increase to more than 193,946 by 2025[2]. The competing demands for residential, commercial, and industrial development are no longer sustainable, and require support from the State Government to manage responsibly into the future.

[2] City of Greater Dandenong, Population Current and Forecast in Greater Dandenong and Suburbs, https://www.greaterdandenong.vic.gov.au/_flysystem/filerepo/A6819541

Greater Dandenong is also home to one of the most socioeconomically disadvantaged and diverse communities in Australia. Over half (64%) of its population is born overseas, and 70% of residents speak languages other than English at home[3]. Greater Dandenong also has the highest level of unemployment in Victoria, at 10% in 2018.

We believe a transition to a gas-free residential sector is essential and will result in significant benefits to our residential community including:

- As rapid growth of the municipality requires a need for more housing development, new buildings can be designed to be thermally efficient and integrated with existing electrical technologies that are highly energy efficient, avoiding the need for gas
- The supply of energy efficient building stock, coupled with grid electricity charges that are expected to decline as more renewable generation enters the grid will substantially lower utility costs for occupants, reducing financial pressure on households
- As new and existing developments transition away from natural gas this provides employment opportunities to residents in existing and emerging industries related to de-gasification of the state
- New skill development and training opportunities to residents through apprenticeships, short courses, and TAFE courses.

De-carbonisation Pathways

We provide the following general responses to the questions associated to each of the de-carbonisation pathways listed in the roadmap. Furthermore, the responses below factor in the questions raised under the *gas transition issues and challenges* section of the consultation paper where relevant.

Improving energy efficiency

The two fundamental energy use principles that must be adopted are energy avoidance (in the first instance), and energy efficiency. Adhering to these principles will reduce energy costs and assist in meeting the challenge of shifting to zero-carbon alternatives. Ongoing effort must be placed on reducing energy demand for heating, whilst not artificially extending the life of gas-consuming assets and appliances.

[3] City of Greater Dandenong, Summary of Social Conditions in Greater Dandenong, https://www.greaterdandenong.vic.gov.au/_flysystem/filerepo/A6819532

New developments are capable of being designed to a high level of thermal efficiency through effective passive design principles, high efficiency glazing and bulk insulation. This reduces the need for artificial heating and cooling, which when coupled with energy efficient equipment, reduces heating needs even further.

By implementing higher standards on thermal efficiency (through the National Construction Code, State Planning Policy, and Minimum Energy performance standards) for new development, this will reduce the need or frequency of heating systems of electrified systems. Designers, builders, local authorities, and consultants all have the capacity to apply higher standards and adhere to more stringent regulations.

Electrification

Unlike electricity derived from renewable energy sources, greenhouse emissions associated with gas cannot be eliminated. Thus, we strongly encourage the electrification of all new buildings and existing operations using gas.

Particular focus should be directed toward the electrification of all residential development (existing and proposed) based on the technologies currently available including domestic air conditioners, heat pumps and heat recovery systems and cooking appliances. Heat pumps for instance are between 3 to 5 times more efficient in terms of energy output than a gas boiler.

To support an electrified future, immediate action is required to prevent the installation of new gas assets and thereby prevent future gas consumption from being locked in across the lifecycle of these assets. We recommend regulation be introduced to mandate all new development to be designed as all-electric with no connection made to gas infrastructure. The priority should focus on the residential sector due to the existing technologies available and tendency of residential occupants to avoid modification of services unless replacement is required.

Where possible, upgrades to electric alternatives should be aligned to the end of life for gas assets. Equipment costs are rapidly decreasing and could quicky achieve cost parity with like-for-like replacement, with appropriate Government incentives. With a significant number of existing commercial and industrial small to medium enterprises (SMEs) in Greater Dandenong, such programs would be welcomed. This must be supported through the relevant information campaigns outlining the

benefits of electrification to support any transition program to ensure sufficient buy-in from the commercial and industrial sectors.

Increasingly, local governments have committed to de-gasification and electrification with support from climate change and sustainability action plans. In particular, sectors with particular applications and more complex transition pathways from gas (such as manufacturing and aquatic centres) will require strong engagement and support, both financial and operational, from state and local governments. Providing subsidies, loans, or other incentives for replacement of gas infrastructure with electric heat pumps could provide an accelerated transition pathway for these sectors.

Substituting natural gas with hydrogen, natural gas, and biogas

With a number of large manufacturers reliant on gas to support their manufacturing processes, in particular those that require process heat that cannot be provided by electrical technology, they will use of natural gas will be required in the short to medium term until low emission or green alternatives become available.

We support the use of hydrogen as an alternative fuel option for operations that require large volumes of gas. It is therefore recommendation that hydrogen is reserved and prioritised for feedstock and industrial heating applications before focus is placed on broader distribution.

Hydrogen development is still in its early stages, requiring more research and trials before the technology is proven to be a sustainable alternative. In addition, should hydrogen be produced and made available to the free market, hydrogen must be “clean” or “green hydrogen” (generated using renewable electricity and recycled water) and not sourced from emissions or water intensive processes.

It is predicted that perceptions of the safety, reliability and production difficulty of hydrogen will likely become market barriers. It is therefore essential that clear information is provided to potential users of hydrogen in the future to ensure the technology is supported when available.

We support a similar approach for the use of biomethane, in particular due to its existing application in some operations including at the Eastern Treatment Plan in Bangholme. We encourage this approach to be further broadened, in particular on a precinct-based scale where large scale uses are located close to the source or processing facility. Information campaigns and efforts to identify potential user groups should be broadened to generate interest and potential uptake.

Emerging technologies and addressing fugitive emissions

Greater Dandenong supports the investigation and development of a trial of emerging technologies that will support a transition away from gas. This includes gas alternatives, infrastructure to support alternatives to gas (e.g. hydrogen or biomethane), and new electrical technologies that out-perform gas in efficiency, reliability, and cost.

Fugitive emissions will remain an issue whether this be associated with consumption and distribution of existing natural gas, or consumption and distributions of alternatives such as hydrogen. It is important that safety and environmental impacts are considered first.

Emerging technologies for the drawdown, sequestration and permanent storage of carbon should be considered in tandem with the transition roadmap to ensure unavailable fugitive emissions are appropriately offset.

Yours sincerely,

Brett Jackson
Manager Planning and Design
Greater Dandenong City Council