30th July 2021

Katie Brown
Director Energy Strategy
Department of Environment, Land, Water & Planning
Email: Gas.Roadmap@delwp.vic.gov.au

Dear Ms Brown,

Re: Gas Substitution Roadmap

We write with regard to the Gas Substitution Roadmap. The Council Alliance for Sustainable Built Environment (CASBE) welcomes the opportunity to provide the following feedback on State Governments' Gas Substitution Roadmap Consultation Paper. We also welcome the opportunity to play a role in the transition to a gas-free built environment.

CASBE BACKGROUND

CASBE is a collaborative alliance of Victorian councils committed to the creation of a sustainable built environment within and beyond their municipalities. CASBE provides a forum for the exchange of information and ideas on innovation and best practice in Environmentally Sustainable Development (ESD). Our local, ground-up approach has resulted in collaborative local government led action and broad scale positive change to Victoria's built environment and a significant reduction to its consequent environmental impacts, including the impact of energy use. CASBE members include 38 Victorian councils representing over 70% of Victoria's population.

CASBE's focus is on applying widely accepted ESD principles to the built environment through the Victorian statutory planning system. CASBE has developed the Built Environment Sustainability Scorecard (BESS) - an online tool for assessing the sustainability of development proposals at planning stage. BESS provides a consistent assessment methodology for CASBE's Sustainable Design Assessment in the Planning Process (SDAPP) Framework – a methodology adopted by numerous Victorian Councils to enable a consistent assessment of sustainability commitments in new development across participating councils.

CASBE is focused primarily on new and retrofitted development in the built environment. Typical sustainability commitments from developers include improved energy performance outcomes beyond base National Construction Code (NCC) requirements, based on passive design measures such as passive heating and cooling, natural ventilation and climate responsive design.

One of CASBE's current strategic goals is to 'Elevate environmental standards for new development'. CASBE has been progressing work in this area and have recently facilitated a joint council project to progress work on resilient and zero-carbon buildings and urban places.

CASBE's position on energy is that:

All new buildings are to be carbon positive, as soon as possible.

Given our focus on the built environment, our feedback will primarily focus on the first two pathways, being energy efficiency and electrification.

ENERGY EFFICIENCY

Energy efficiency is put forward as a strategy for reducing gas-related emissions. The Consultation Paper identifies the following strategies for improving energy efficiency:

- Minimum energy efficiency standards for buildings
- Upgrades to existing buildings
- Upgrades to appliances and equipment
- Improve the efficiency of gas use by larger industrial users through strategies such as insulation of hot water pipework, replacement of commercial and industrial gas boilers, smart thermostats and energy management systems for businesses.

Strategies for end use appliances such as cooking, space heating and hot water include:

- Ambitious new targets for the Victorian Energy Upgrades Program for the 2022 to 2025 period.
- Regulatory reform to building standards to improve building thermal performance and require the installation of efficient appliances and equipment.
- Regulatory reform to increase minimum efficiency standards for new buildings and rented homes.
- Setting comprehensive national standards for appliances and equipment energy efficiency.
- Minimum standards for heating in rental homes.

CASBE supports all the initiatives listed above.

However, energy efficiency should not be considered as an alternative to an immediate shift away from gas in new development.

ELECTRIFICATION

The Consultation Paper posits that the decarbonisation of the grid, along with the increasing uptake of renewable energy, means that energy users can reduce emissions by shifting from gas to electricity.

CASBE supports this premise.

The paper identifies the following strategies for achieving electrification:

- Shift to heat pumps for heating, cooling and heating water.
- Shift to industrial-scale heat pumps and electromagnetic industrial heat sources for industrial purposes.

Strategies for building design, and end use appliances such as cooking, space heating and hot water include:

- All electric buildings
- Heating upgrade program
- Incentivising electrification

- Review building and planning legislation to better enable a rapidly changing energy mix and innovations in new technologies.

CASBE supports all the initiatives listed above.

ELEVATING ESD TARGETS - ENERGY

A group of CASBE member councils, led by Moreland and Yarra City Councils, are working on Stage 1 of a two-stage process that aims to build on the existing local ESD Policies held by numerous Victorian Councils, and deliver revised and elevated ESD targets for new development, including targets for zero carbon development.

Stage 1 aims to develop an evidence base for:

- New developments that produce zero net emissions, better manage water and waste, increase greening and biodiversity, and are more resilient to our changing climate.
- Buildings that provide a healthier, more comfortable environment for our community and improve health outcomes.

This stage will involve undertaking a technical feasibility and viability analyses, a cost benefit analysis and a peer and legal review of revised ESD policy objectives and standards developed by CASBE.

A future Stage 2 will involve the planning amendment process itself. This will be conducted as a group amendment, similar to the one undertaken by the six councils who collaborated on the original local ESD Policy.

The twenty-nine Victorian councils and the Municipal Association of Victoria (MAV), representing the Council Alliance for a Sustainable Built Environment (CASBE), have signed a Memorandum of Understanding to enable this collaborative effort. Undertaking the project collaboratively will:

- Enable shared costs and knowledge for councils.
- Provide clarity and consistency for the development community.

We provide, for your internal use only, the following DRAFT energy planning policy *Objectives* and *Standards*. Please note these will be subject to a review as outlined in the project description above.

Draft Energy Objectives (applicable to the transition to gas-free):

- To deliver development that produces net-zero carbon emissions, through:
  - Optimised passive design to deliver an energy efficient building envelope.
  - Maximised energy efficiency standard of all appliances, systems and lighting.
  - **No fossil fuel consumption onsite, such as natural gas or LPG.**
  - Maximised onsite renewable energy generation.
  - Residual electricity demand purchasing from local and/or offsite renewable energy generation.

Draft elevating targets Energy Standards (applicable to the transition to gas-free):

- A Net-zero carbon performance from all operational energy use must be achieved through a combination of measures.
- **No natural gas or other onsite fossil fuel consumption is permitted.**
- Only electric cooktops and ovens can be installed.
- Maximise onsite renewable energy generation to meet or exceed predicted annual energy use.
- All residual operational energy to be 100% renewable purchased through offsite Green Power, power purchasing agreement or similar.
- Design to enable for future renewable energy battery storage including space allocation.

RESPONSE TO KEY QUESTIONS

We provide the following feedback on the key questions for the pathways.

What are the key benefits, risks, and potential impacts on various end-users, on energy affordability, safety, security, reliability and equity?

Energy Efficiency

An energy efficient house can help deliver thermal safety. As climate extremes increase, thermal safety, particularly in extreme heat waves, threatens our well-being, particularly for our more vulnerable community members.

The increased energy efficiency requirements for buildings over the past 10 years have contributed to an improvement in energy efficiency however energy performance regulations in Australia are still well behind European standards.

CASBE's Submission to the *ABCB - Energy efficiency - NCC 2022 and beyond scoping study* stated that:

> *We support the net zero annual energy use target for regulated building services. CASBE's strategic aspiration is for all new buildings to be carbon positive as soon as possible. To that end, we have incorporated minimum energy targets and stretch targets into our assessment processes to encourage the shift to a zero-carbon future. We have found that many projects achieve these higher standards.*
>
> *CASBE supports a rapid transition to zero emissions buildings and precincts and encourages the ABCB to develop building policy to back this objective.*

Electrification

CASBE councils, through the SDAPP Framework and the application of ESD requirements through local planning policy, have been working with the development industry for more than a decade encouraging improved energy efficiency outcomes. This has been supported by clear energy expectations in the BESS tool. BESS requires a preliminary building energy rating (NatHERS / FirstRate5 assessment) to assist in optimising design for passive heating and cooling when addressing Thermal comfort & performance. BESS uses the envelop performance combined with the selection of a specific energy rating of various appliance types to calculate whole of house energy consumption and greenhouse emissions. The outcomes are assessed against a baseline energy consumption.

This assessment of energy performance has increased the energy literacy of the mainstream development industry, and by association, an understanding of the value of electrification. To the point where a number of our member councils are now seeing development applicants voluntarily seeking zero carbon outcomes.

What are the scale of opportunities and potential to accelerate uptake?

Energy Efficiency

The quality of our new homes is ever increasingly becoming more important. The COVID pandemic has highlighted the fact that our homes are not only a building in which we reside, but increasingly workspaces. This places an increased emphasis on the need for affordable, secure and reliable energy.

Appropriate construction methods of new Victorian homes and buildings is also essential to ensuring other aligning Victorian Government strategies are achieved. For example, the Victorian Climate Change Act 2017 and greenhouse gas emissions reductions targets rely on new (and existing) housing and general building stock to perform at a higher energy efficient standard. This is also a key strategy in addressing thermal safety within a warming climate.

There is an opportunity with the Victorian Planning System to accelerate the uptake of energy efficiency. CASBE is actively working in this space as follows:

- The Elevating ESD Targets Planning Project:

Twenty-nine (29) Victorian councils and CASBE are collaborating on a joint research project that aims to elevate Environmentally Sustainable Development (ESD) targets for new development. This exciting project demonstrates collaborative local government leadership in the pursuit of resilient and zero-carbon buildings and urban places.

- The Sustainable Subdivisions Framework (SSF):

The Sustainable Subdivisions Framework (SSF) is a framework that seeks to provide statutory planners with a basis for measuring and achieving stronger sustainability outcomes in residential subdivisions, while also providing information on how sustainability interventions can be integrated into residential subdivisions.

From October 2020, councils across Victoria are conducting a voluntary 18-month trial of the Sustainable Subdivisions Framework. Through this process council statutory planners from participating councils are able to provide an assessment of subdivision applications within their municipality against the Framework.

The SSF was developed as a state-wide replicable model through a collaboration of regional and growth area councils with a focus on greenfield subdivisions, however it can equally be applied to infill subdivision and precinct sites. The SSF includes an Energy category whereby a Precinct Structure Plan may include "Analysis of what opportunities exist to reduce energy use and to optimise efficiency within the precinct."

Electrification

- The Sustainable Subdivisions Framework (SSF):

The SSF includes a metric that seeks the "Consideration of opportunities for low carbon generation and renewable energy at a precinct scale, in particular through a detailed energy options analysis that considers matters including but not limited to; feasibility of requiring local energy generation; demand

management strategies in subdivision and subsequent dwelling design; local/precinct scale energy generation and storage opportunities and design guidelines to support solar generation. “

- Climate Emergency declarations & plans

With a growing number of Victorian Councils pledging to climate change agreements (under the Climate change Act 2017) more than 32 councils have now adopted Climate Emergency Plans. Commitments include such targets as to:

- electrify all of Council’s buildings,
- be powered by 100% renewable electricity with no use of gas, by 2030 and
- future proofing buildings for electric charging infrastructure.

There is now an opportunity for the Victorian government to raise the bar for the whole sector and accelerate gas substitution in new developments. This can be achieved by state and other local governments introducing consistent zero carbon (gas-free) planning policy.

What are the key technical, regulatory and economic barriers?

Energy Efficiency

We have outlined in this submission above how our work requires a commitment to improved energy outcomes in new development through the planning process. However, one of the main barriers to the ultimate success of this project is a lack of follow through to the construction phase.

For many years, it has been clear to CASBE and members Councils that a critical issue in the Victorian building and development sector is the absence of a framework intended to support design and building practitioners carrying out compliance and safe practices. A common example is the sign-off of dwellings which do not meet the required energy performance required by the Planning Permit. CASBE is aware that whilst the Planning Permit locks in ESD requirements including NatHERS ratings which exceed the NCC, Private Building Surveyor's frequently certify new homes which are much less than this required rating.

New homes which are not built to the required ESD Planning NatHERS rating nor the NCC, resulting in parts of homes which are so hot during summer they are unusable; insulation installed so poorly that the modelled energy rating is constructed to 2 or more stars below the Planning or NCC requirement; and an overarching lack of homes being built which are performing and designed the way they were intended.

Current non-compliance with the existing energy efficiency standards must be addressed alongside any efforts to increase regulatory requirements for energy performance.

Electrification

The main barriers to the electrification of buildings have been:

- a lack of industry expertise and experience in the design of all-electric heat pump systems for aquatic centres and commercial HVAC applications;
- significant upfront capital costs to upgrade assets;
- long times for power supply upgrade approval from electricity distributors.

What are the roles to be played by government, industry and how will consumers preferences be accounted for in the transition?

Energy Efficiency

CASBE is playing a critical role in improving energy efficiency work in new development. Our SDAPP Framework program which has been running for more than 15 years has led to local policy development, the development of a sophisticated whole of building energy assessment tool and capacity building across mainstream industry in Victoria. This leadership role is continuing through our work with the Elevating Targets project.

Likewise, councils' work with the Sustainable Subdivisions Framework is building up a body of knowledge around the feasibility and effectiveness of sustainable design strategies in the development of our future communities.

As place makers with a strong connection to local development industries, Councils have an important role to play in the transition to a gas free built environment and are committed to continuing our work to drive innovation in this area.

Our work can be supported by:

- Mass public communications around behaviour change initiatives to move away from gas;
- Support for changes to regulatory standards.

Electrification

The Green Building Council of Australia (GBCA) is encouraging the industry to go all-electric and is changing their Green Star rating. Newly registered 6-Star Green Star buildings are required to be fossil fuel free, and under the GBCA's new roadmap, that requirement will move to 5-Star in 2023 and 4-Star by 2026. This is also reflected in positions held by the Property Council of Australia *Every Building Counts* (2019), and several other industry groups such as Planners Declare, Architects Declare and Builders Declare. According to the Green Building Council of Australia, over 17 Australian property giants have voluntarily committed zero carbon property portfolio by 2030.

Recommendations:

- Support whole-of-industry capacity building (engineers, installers and maintenance professions) in all-electric technologies and services, especially where gas powered systems are the default option
- Provide funding towards the replacement of expensive gas assets and electrical upgrades required at large community facilities. This would reduce the financial barriers for councils and speed up the transition

What are the best ways to maintain social acceptability and consumer confidence?

Energy Efficiency

We recommend ongoing mass public communications around how implementing improved Energy Efficiency measures benefits owner, occupier, builder or property developers by delivering outcomes such as:

- lower energy bills due to less reliance on active heating and cooling systems;
- improved living comfort;
- future proofing of your building asset;
- enhanced market appeal to prospective purchasers;
- higher investment returns;
- a development that meets best practice standards and more importantly, community expectations.

We also recommend a strong compliance program to ensure that building occupiers are actually experiencing the outcomes that the regulatory requirements intend.

Electrification

The *Sustainable Subdivision Framework's* Energy category includes the opportunity for Innovation. This criterion considers Energy-focused behaviour change programs for new residents, incentivising via provision for sharing of electricity within subdivision (e.g. Microgrid / Embedded Network) and guaranteed renewable sources (locked in through confirmed precinct alternative renewable energy supply or design guidelines).

Demonstration projects achieved either through policy instruments such as the planning system, or through developers wanting to make a difference, will provide concrete examples of the benefits of energy efficiency and electrification.

These leading-edge initiatives should be supported and promoted.

What are the likely timings of technical maturity and economic viability?

Energy Efficiency

Energy efficiency in new development and existing buildings is technically possible now and has proven economic benefits.

Electrification

Given that the transition has iterative targets with 28-33% emission reduction by 2025, 45-50% by 2030 and ultimately net zero by 2050, timing of implementing the most achievable targets immediately, while progressing technology and funding towards putting further infrastructure and policy changes in place next is achievable within this proposed timeline.

The electric technologies for small sites (mainly space heating, water heating and cooking) are readily available and asset replacement is underway. For larger sites, including libraries, aquatic centres and town halls, the work to transition off gas to all-electric is more complex.

Technologies for larger scale also exist and continue to emerge. A wastewater plant recently retrofitted and now in use as a methane capture to provide a renewable natural gas known as Biomethane, helping decarbonise the gas grid. Proven technology that can be utilising existing infrastructure and creates zero emissions while also securing jobs. Further technologies now require support both politically and economically.

We recommend the Victorian government include a statewide zero carbon performance standard in the Victorian Planning Provisions (VPPs) for the whole state. This could be introduced over a ten-year period with clear dates and standards detailed to give industry and decisions makers certainty and confidence to invest in a zero carbon economy. However, if a State zero carbon policy is too ambitious for the State, then the Victorian Government should enable councils to include a zero-carbon policy and provisions in their planning schemes, to support leadership in the development sector and meet the expectations of local communities and their Local Councillors.

What are the inter-dependencies and trade-offs with other pathways (are pathways complementary or alternatives)?

No comment

What are the key uncertainties and potential for unintended consequences?

No comment

What do you see as the best opportunity for you to play your part in this transition?

Energy Efficiency and Electrification

Local government in Victoria has been playing a clear role in shifting the development towards more energy efficient practices for many years through the local ESD Policies and our Best Practice Standards – refer below.

We are now actively working on the next step, to shift the development industry towards electrification.

Local ESD Policies

A key aspect of CASBE's work has been to facilitate the introduction of local planning policy that requires ESD design strategies to be considered by the community when undertaking development projects. There are now 19 councils with this local ESD policy and 26 in total operating the SDAPP Framework. A full list of these policies is provided on the CASBE website.

With 19 CASBE councils already applying their Local ESD Policies and a further 7 pursuing, 29 Councils participating in the *Elevating ESD Targets project,* there is ever growing demand for an energy efficient, zero carbon built environment.

Best Practice Standards

The Local ESD Policies are supported by the Best Practice Standards that are articulated in the suite of Sustainable Design Fact Sheets developed by CASBE councils. These Fact Sheets form a consistent set of standards that councils use to define their sustainability expectations. These fact sheets are available for any council to adopt; however, the standards remain the same for each council.

Each fact sheet lists *Mandatory Requirements* and *Council's Best Practice Standards.* The *Mandatory Requirements* list minimum sustainability standards as outlined by the Building Code of Australia and relevant Planning Scheme clauses. The *Best Practice Standards* list councils' expectations for each of the ten Sustainable Building Categories, including Energy. *SDAPP Fact Sheet 2.0 Energy Efficiency – building design for a sustainable future, r*ecommends measures to enhance Energy Efficiency.

Please contact me if you wish to discuss this matter further on [redacted] casbe@mav.asn.au.
Yours sincerely

Natasha Palich
CASBE Executive Officer

Notes:

CASBE is auspiced by the Municipal Association of Victorian (MAV). This submission is made on behalf of CASBE member councils and the views represented in this submission do not necessarily represent the views of the MAV. While this paper aims to broadly reflect the views of CASBE member councils, CASBE has a diverse mix of member councils and the views represented in this submission do not necessarily represent the views of all CASBE members individually.
Individual councils may also respond to issues specific to, and on behalf of, their communities.
The CASBE staff thanks and acknowledges the contribution of those who have provided their comments and advice in the development of this submission.