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Sustainability Team  
Wellington City Council  
PO Box 2199  
WELLINGTON

**First Gas Limited**  
42 Connett Road West, Bell Block  
Private Bag 2020, New Plymouth, 4342  
New Zealand  
P +64 6 755 0861  
F +64 6 759 6509

Sent via email: [zerocarboncapital@wcc.govt.nz](mailto:zerocarboncapital@wcc.govt.nz)

Dear Kevin

## Wellington's blueprint for a Zero Carbon Capital

First Gas Limited welcomes the opportunity to make a submission to the Wellington City Council (the Council) on its draft plan document "*Te Atakura / First to Zero: Wellington's blueprint for a Zero Carbon Capital*."

We commend the Council taking courageous actions to support New Zealand's goal of net zero emissions by 2050 because the transition is the real challenge.

The difficulty of the challenge is demonstrated in the proposal to stop the use of natural gas in Council buildings by 2035. The proposal lacks a transition plan that outlines how the council will phase in a replacement energy supply that is resilient and cost-effective. Natural gas provides a hazard-resilient energy supply for the city, and the use of gas will keep prices down during the transition and as the price of renewable generation steadily falls. Gas infrastructure can also enable the transition from natural gas to future lower carbon fuels. The transport and use of hydrogen or biofuels are likely to be needed if critical city facilities such as Wellington Airport are to significantly reduce their emissions. We expand on these points below.

### About First Gas

First Gas operates 2,500 kilometres of gas transmission pipelines, and more than 4,700 kilometres of gas distribution pipelines across the North Island. These gas infrastructure assets transport natural gas from Taranaki to major industrial gas users, electricity generators, businesses and homes, and transport around 20 percent of New Zealand's primary energy supply. Our distribution network services approximately 63,000 consumers across the regions of Northland, Waikato, Central Plateau, Bay of Plenty, Gisborne and Kapiti.<sup>1</sup>

First Gas' transmission pipeline delivers natural gas to the Wellington region through two gas gates at Tawa, connecting to the Powerco and Nova gas distribution networks. During 2018, we transported 2,279,170 gigajoules of gas into Wellington via these gates – the equivalent gas required for 114,000 households.<sup>2</sup> Given this infrastructure, we have a strong interest in the role that natural gas plays in New Zealand and the transport of energy into Wellington city.

### Proposed move away from natural gas needs a robust transition plan

First Gas is concerned with the Council's proposal to stop the use of natural gas in any building by 2035.<sup>3</sup> The draft plan provides no commentary around how the council will make this transition, the expected emission savings, and the resulting costs to ratepayer. A robust transition plan is required to

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<sup>1</sup> For more information on First Gas, see our website [www.firstgas.co.nz](http://www.firstgas.co.nz)

<sup>2</sup> Based on the assumption of the average house using 20 GJ of gas/year. This amount is also equivalent to 633 million kilowatt-hours.

<sup>3</sup> Page 46 of the draft plan.

show how the various energy sources and uses will be balanced and introduced and altered over the next 15 years.

We would expect that the Council would first establish its own climate budget and identify the areas where it can most efficiently achieve carbon emission reductions, i.e. the use of fossil fuels in transport. It would also be prudent to link the council's own climate budget with the national carbon budgets proposed to be set by the impending Climate Change Commission and the Emissions Trading Scheme.

The Council states that this action is also “fiscally responsible”, based on the premise that the ban on exploration will push gas prices higher than electricity. We encourage the council to consider the scale of the upgrades that will be required to the electricity infrastructure to support the widespread electrification of current gas loads in Wellington.

### **Benefits from use of natural gas in current energy mix**

We encourage the Council to factor in the benefits that natural gas provides to Wellington city at present. The benefit of transitioning to net zero using gas is that it maintains security of energy supply, it's more resilient to hazards like earthquakes, and it will keep prices down during the transition and as the price of renewable generation steadily falls. Given Wellington's earthquake risk, the Council should consider the very real danger of relying on only one fuel in an emergency to power facilities where citizens will gather for security, and where its own organisation will operate recovery services.

### **Gas infrastructure can enable introduction of future low carbon fuels**

Investments in and maintenance of gas infrastructure can enable the transition from natural gas to new future fuels. As highlighted in the Vivid Economics report<sup>4</sup> commissioned by First Gas and Powerco, this infrastructure could open opportunities for the future deployment of hydrogen, biogas, or gas blends (hydrogen or biogas). While we accept that such conversions are not economic today, we see considerable value in preparing for the future deployment of lower carbon fuels.

The Council's draft plan highlights the challenge of reducing the air travel emissions from Wellington airport, noting that “biofuels, hydrogen or direct air capture fuel creation will be required” for international flights.<sup>5</sup> Gas infrastructure could enable the transport of either biofuels or hydrogen to airports, ensuring that New Zealanders have access to essential air travel.

This week, First Gas announced that we will run a hydrogen-pipeline trial.<sup>6</sup> This project is likely to be one of the first to take advantage of the New Energy Development centre to be established in Taranaki. This trial will be extremely practical, looking at the end use of hydrogen or hydrogen-blend gas on New Zealand's own transmission system and what adaptations users may need to make to their operations.

There are also numerous trials underway overseas, where businesses are exploring the viability of hydrogen or hydrogen blends transported in gas infrastructure:

- The *University of California, Irvine*<sup>7</sup> has successfully implemented the first power-to-gas hydrogen pipeline injection project in the United States. They have converted surplus sustainable energy from solar panels or wind farms into hydrogen and injected this into the campus power supply, demonstrating how natural gas infrastructure can support renewable energy; and
- *HyDeploy*<sup>8</sup> is a pioneering hydrogen energy project, where Cadent (UK operator of largest gas distribution network) will run a live trial of blended hydrogen and natural gas on part of the private gas network at Keele University campus in Staffordshire.

These trials will provide useful insight into how cities can utilise existing gas infrastructure to transport low emissions fuels and lower their emissions. The current Council plan appears to have ruled out hydrogen or other future gases, given it will cut itself off from the network we will use to transport such zero or low emission fuels.

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<sup>4</sup> *Gas infrastructure futures in a net zero New Zealand*, Vivid Economics, 10 December 2018, [https://firstgas.co.nz/wp-content/uploads/16098-First-Gas\\_Future-of-Gas-Report-Dec18-FINAL-high-res.pdf](https://firstgas.co.nz/wp-content/uploads/16098-First-Gas_Future-of-Gas-Report-Dec18-FINAL-high-res.pdf)

<sup>5</sup> Page 57 of the draft plan.

<sup>6</sup> <https://firstgas.co.nz/news/hydrogen-project-first-to-join-nnedc/>

<sup>7</sup> <https://www.universityofcalifornia.edu/news/national-first-uc-irvine-injects-renewable-hydrogen-campus-power-supply>

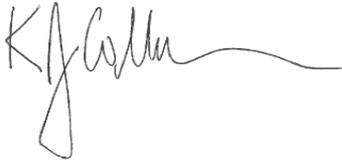
<sup>8</sup> <https://hydeploy.co.uk/>

**Recommend that proposal should focus on flexibility in energy supply**

Rather than focusing on one fuel type, we encourage the Council to amend its proposal to “transitioning its building to a flexible, low carbon and resilient energy supply by 2035”. This enables the Council to establish a measured transition plan where they can deploy fuels that both reduce emissions and ensure a resilient supply of energy for the country’s capital. A fuel-agnostic proposal enables the Council to capitalise on the best technology that comes to the market in the coming 15 years.

If you have any questions regarding this submission, please contact me on 027 472 7798 or via email at [karen.collins@firstgas.co.nz](mailto:karen.collins@firstgas.co.nz).

Yours faithfully

A handwritten signature in black ink, appearing to read 'K. Collins', with a long horizontal flourish extending to the right.

**Karen Collins**  
Regulatory Policy Manager