

12 October 2020

Building for Climate Change  
By email: [bfcc@mbie.govt.nz](mailto:bfcc@mbie.govt.nz)

## Powerco supports the vision that the design and construction of New Zealand's new buildings use as little energy and water when it's efficient to do so

We appreciate the opportunity to share our thoughts on the *Transforming Operational Efficiency* consultation paper. Powerco supports the vision of the paper to look at how building design and construction can reduce operational emissions. It complements the role that the energy sector will play in New Zealand's transition to a low-emissions economy, including through the electrification of transport and industry operations. For the BFCC proposals to be progressed, we suggest the marginal costs of the initiatives be assessed against affordability and reliability. Importantly, the impacts attributable to the design/construction need to be isolated from other market drivers.

**Climate change is more than emissions** It also includes reliability and affordability. This was echoed in MBIE's 2019 discussion document<sup>1</sup> which, in the context of net-zero carbon economy for 2050, aimed to "provide greater coherence and joined-up thinking on policies to reduce energy-related emissions and ensure we take into account security of supply and affordability impacts for our energy system."

**Revisit the emissions cap concept** New Zealand's purchased electricity emissions will always be non-zero due to the CO<sub>2</sub>e emissions from geothermal generation. So a zero cap on fossil fuel combustion emissions may not be cost-effective because it would mean no electricity could be consumed. It will also be problematic to implement because household electricity use is rarely average – it is a function of many factors affecting the behaviour of occupants over time. This was touched on in the Electricity Price Review (Attachment A).

**Fossil fuels can be low carbon** Policy and market settings are driving exploration of alternative fuels involving biogas and hydrogen (on their own and as blends). The gas industry is committed to a transition to zero-carbon gas, but the timeline is uncertain. Setting a firm emission deadline may preclude these options being explored. Even if this transition is well advanced, it might be unavailable for use in new buildings.

**Engage with the energy sector** There are a range of existing incentives and initiatives underway which affect the scale and timing of electricity consumption and therefore the impact on emissions. We support the BFCC engaging with policy and market stakeholders whose powers or decisions affect energy use e.g. Electricity Authority, Climate Change Commission, MBIE, MfE and GIC, and EECA, along with energy distributors, generators, and retailers who are involving in the formation of prices. We've expanded on some of the examples from these parties in Attachment A.

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<sup>1</sup> <https://www.mbie.govt.nz/assets/discussion-document-accelerating-renewable-energy-and-energy-efficiency.pdf>

Translating the BFCC's objectives to meaningful outcomes for New Zealand homes and businesses is a challenge. We're keen to help if we can - we're passionate about the role of a well-functioning energy sector in delivering sustainable outcomes for customers and New Zealand. If you have any questions on this letter, please contact Andrew Kerr (Andrew.Kerr@powerco.co.nz). Attachment B has a summary of about Powerco.

Yours sincerely



Stuart Dickson  
General Manager – Customer

## Attachment A - Interaction with the energy sector

We encourage the BFCC to explore how its activities align with the existing and proposed policy and market initiatives that affect energy use eg, those of the Electricity Authority, Climate Change Commission, MBIE, MfE and EECA. Some examples are included below.

**Electricity Authority – Transmission Pricing** The excerpt below from the Authority relates to changes to transmission pricing<sup>2</sup>. As it states, the changes are aligned with increased electrification and lower-carbon electricity supply. The first bullet point supports *increased* demand at peak times, which is in contrast to commentary in the BFCC paper about needing to avoid peak demand.

### Making the most of our national grid

The development and maintenance of our national grid are critical - now and in the future as we move to more renewable generation to support increased electrification of transport and industrial processes.

Making the most of our national grid means:

- More use at peak times - when New Zealanders value electricity the most (for example, heating at night) - with more targeted signals to manage congestion.
- Supporting businesses with stable, predictable electricity transmission pricing (rather than the volatile current grid pricing).
- Better use of the grid to help NZ electrify at the least cost to consumers, make the right investments in renewable generation and lower long-term electricity prices leading to more electric vehicles and increased electrification of process heat.
- Better investment in transmission - at the right time and in the right place.

**MBIE - Accelerating renewables uptake and encouraging changes in industrial energy use** MBIE's December 2019 discussion document<sup>3</sup> presented a range of programmes to provide "joined up thinking on policies to reduce energy related emissions". Importantly, the approach is to reduce emissions, not avoid at any cost given there can be more cost effective options.

- Inclusion of natural gas (and other fossil fuels) in the ban has not been considered because carbon prices in excess of \$120/t CO<sub>2</sub>-e are required to make many gas-to-electricity projects economic. Such a broad ban would be a blunt instrument and entail very high cost on industry. It could force higher cost abatement in the sector (and the wider economy) compared to more cost-effective options available today. However, to achieve our net zero carbon 2050 target, it is possible that the phase down of gas in industry will also be required in the future.

Source: Accelerating renewables uptake and encouraging changes in industrial energy use, MBIE page 125

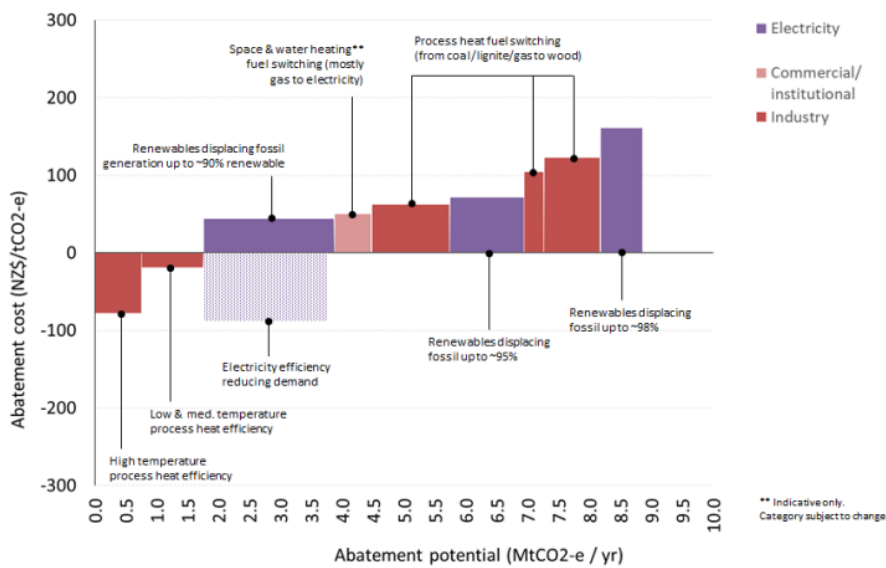
From an emissions-reduction perspective, marginal abatement curves are a useful mechanism to allow like-for-like comparisons. MBIE (see below) and MFE (next section) have used this approach to allow comparison of cost-effectiveness of different initiatives.

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<sup>2</sup> <https://www.ea.govt.nz/dmsdocument/26852-tpm-factsheet>

<sup>3</sup> <https://www.mbie.govt.nz/assets/discussion-document-accelerating-renewable-energy-and-energy-efficiency.pdf>

**Indicative Stationary Energy MACC: present day prices and maximum abatement potential**  
 Uncertainties not shown. Numbers provisional and subject to change.

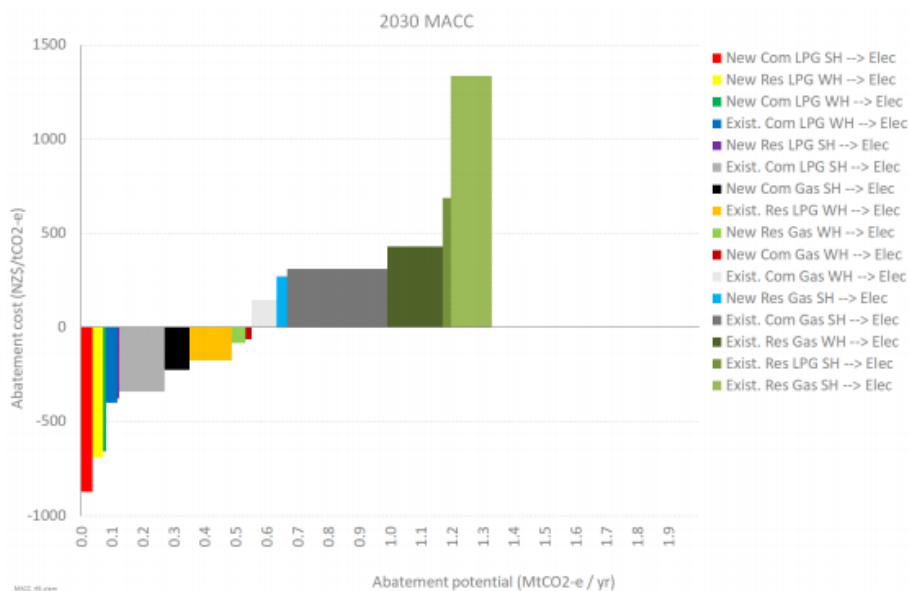


Source: Ministry for the Environment (unpublished 2019) *Draft Marginal Abatement Cost Curves Analysis - Stage 1 report: MACCs tool documentation and initial results.*

Source: Accelerating renewables uptake and encouraging changes in industrial energy use, MBIE page 125

**MFE – Marginal abatement cost curves analysis for New Zealand: Potential greenhouse gas mitigation options and their costs** MFE’s 2019 analysis of marginal abatement costs provides a view of the potential CO<sub>2</sub>e abatement possible from alternative residential and commercial heating. This sort of modelling could be a useful starting point for valuing the impacts of BFCC initiatives<sup>4</sup>. It would be important to consider the nature and scale of energy use.

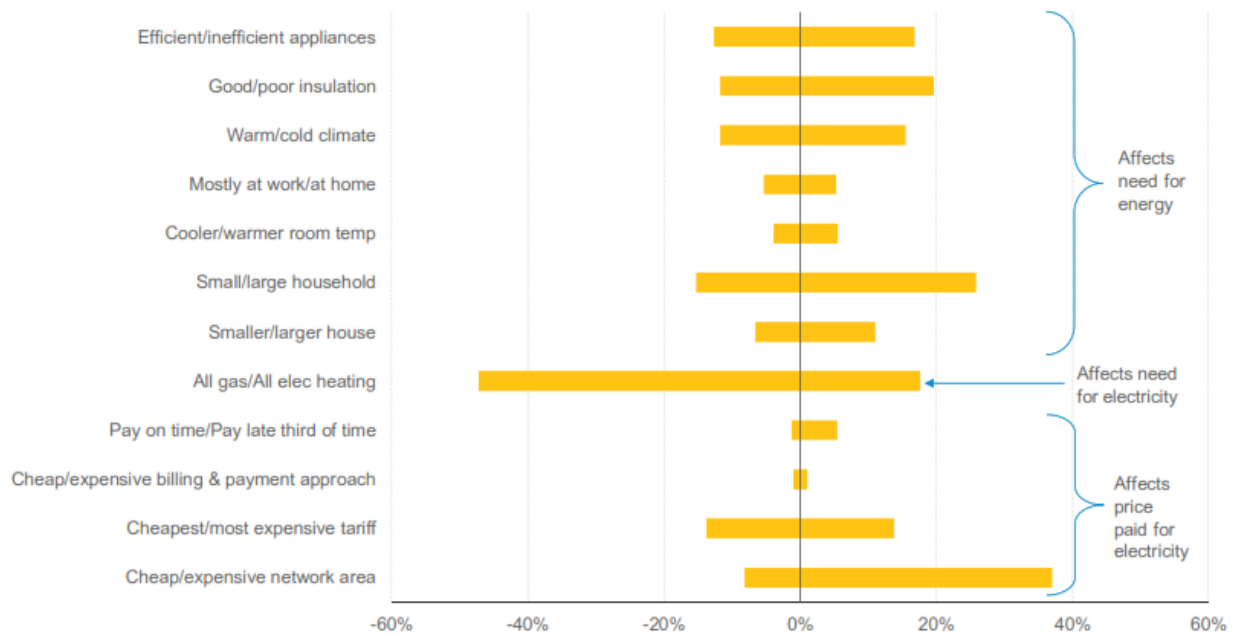
**Figure 37: MAC for residential and commercial space and water heating**



<sup>4</sup> [https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/marginal-abatement-cost-curves-analysis\\_0.pdf](https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/marginal-abatement-cost-curves-analysis_0.pdf)

**Electricity Price Review – Factors impacting affordability** Affordability was a focus of the first report from the Electricity Price Review. They noted that *two households may have the same low income but markedly different energy costs and degrees of energy hardship. Factors for this variation can include size and location of the home, amount of insulation, number, age and health of occupants, efficiency of heating devices and how much time people spend at home. All these factors affect how much electricity a household needs to maintain a healthy home, irrespective of income level.* This is relevant to the BFCC's considerations because the costs of design and construction to meet an emissions cap must be traded off against the alternatives.

**Figure 12: Impact of factors affecting consumption and price**



Source: First report for discussion, Electricity Price Review panel, page 29

## Attachment B - About Powerco

Powerco is a dual energy distributor with electricity lines and gas pipelines. Powerco is New Zealand's largest electricity distributor in terms of network length (28,000km) and has the second largest number of electricity connections (340,000). The company also has the second largest gas distribution network comprising 6,000km of pipelines and 109,000 gas connections.

- *Electricity distribution.* Powerco's electricity networks are in the Taranaki, Wanganui, Rangitikei, Manawatu, Wairarapa, Bay of Plenty, Coromandel and Waikato regions, including the urban centres of New Plymouth, Wanganui, Palmerston North, Masterton and Tauranga.
- *Gas distribution.* Powerco's gas networks are in the Taranaki, Manawatu, Hutt Valley, Porirua, Wellington City, Horowhenua and Hawke's Bay regions

