JacksonStone House
3-11 Hunter Street
PO Box 1925
Wellington 6140
New Zealand

Tel: 04 496-6555
Fax: 04 496-6550
www.bec.org.nz

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Energy Markets
Ministry of Business, Innovation, and Employment
PO Box 1473
Wellington 6140
New Zealand

via email: energymarkets@mbie.govt.nz

## Submission on the technical paper: process heat in New Zealand

The BusinessNZ Energy Council (BEC) is pleased to have the opportunity to provide a submission to the Ministry of Business, Innovation & Employment (MBIE) and the Energy Efficiency and Conservation Authority (EECA) on its targeted technical paper entitled 'Process Heat in New Zealand: Opportunities and barriers to lowering emissions', published on 22 January 2019.[1]

## Introduction

The BEC welcomes the engagement on this important issue. MBIE and EECA is to be congratulated on a well-argued issues paper. We largely agree with the identified barriers and other findings.

We agree that it is important to better understand the barriers businesses face in lowering their emissions including those associated with process heat. Process heat has been identified as the second largest source of energy-related emissions, just behind transport. Better understanding barriers that prevent firms from investing in energy efficiency improvements or from switching to renewable alternatives is a good initial step. The paper recognises the bundle of complex issues which must be resolved to achieve a successful transition to a low carbon economy.

## Contextual comments

Overall, the right issues have been laid out. However, we would like to add and reinforce a few points and so provide the following contextual comments:

- we agree that there are many barriers to the uptake of energy efficiency and renewable energies in process heat (see barrier: A-N on page 13-25). As discussed in the paper, barriers are complex given the different requirements that are faced by businesses, such as temperature requirements and the access

[1] Background information on the BusinessNZ Energy Council is attached in Appendix One.

to energy sources (location), and also the access to capital, investment opportunity costs and other important factors such as security of supply. In 2015 the BEC launched BEC2050: two New Zealand-specific energy scenarios – Kayak and Waka. A deep dive into energy and transport sector emissions under these scenarios has been reinforced by the findings set out in the technical paper. The deep dive found that:

> "Neither of our scenarios suggests that there is any substantial switch to renewable fuels (electricity or biofuels) for process heat. The model does not see these options as economic by 2030 but if technology improves it may be another avenue for further reductions in carbon emissions. This highlights the challenge for the industrial heat sector. Since there are few alternatives to fossil fuels (and few alternatives to coal in the South Island) seen by the model as commercially viable, the only other options open to businesses facing Waka's increasing carbon price are either greater efficiency or, ultimately, exit."[2]

- paragraph 18 on page 9 of the technical paper outlines that:

> "most process heat emissions are produced by a relatively small number of super-large heat plant fuelled by coal and gas, with over 90 per cent of the emissions come from less than 5 per cent of the heat plant." *(sic)*

These large, high-heat plants have only limited commercial economic options for improving their process heat efficiency. Most are using in-built technology for the duration of the plant's life, which is expensive to replace. Besides business economic barriers, a switch to other fuels (electrification and biomass) wouldn't provide a more efficient and sustainable alternative. Electricity is marginal supplied via thermal generation and therefore has a significant emissions profile. Additionally, energy from electricity is expensive to install, has lower security and is subject to volatile spot pricing. Switching fuels is therefore for most high-heat users not an option. Electrification and biomass seem to be a better option for low to medium heat temperature users. Currently, more than 50 per cent of New Zealand's process heat demand is supplied by fossil fuels, with a share of almost 40 per cent coming from natural gas. Limited options for a fuel switch and the Government's decision to ban new permits for offshore oil and gas exploration has consequences for these businesses and might risk carbon leakage;

- barrier A on page 13-15 of the technical paper discusses emission pricing and its influence on process heat improvements. The NZ ETS does provide an incentive for business to reduce emissions and the price of carbon emissions does influence decision-making. It is unclear though to what extent this will influence improvements specifically in process heat efficiency. The future price of carbon is highly uncertain, and businesses are careful when making large investments which involve high short-term costs and larger capital expenditure based on future uncertain carbon prices. However, sending the right price signals is complex and vital for a successful transition to a low carbon economy. In other words, a low carbon price is unlikely to influence behaviour but if too high is likely to increase the risk of carbon leakage. There is a wide range of

[2] BEC2050: A deep dive into energy and transport sector emissions [https://www.bec.org.nz/our-work/deep-dives/deep-dive-energy-and-transport-emissions]

uncertainties faced when finding the right balance. Energy scenarios, such as the BEC energy scenarios, can help explore possible changes, envisaging a range of future possibilities. Soon the BEC will release its BEC2060 scenarios exploring the demand for process heat and possible fuel options, the estimation of $CO_2$ marginal abatement costs, the integration of agriculture within an energy systems model to assess GHG reduction, the impact of land use change from e.g. biofuels on greenhouse gas emissions, the market penetration analysis of specific technologies, such as hydrogen and more;

- in addition to the above, we are somewhat surprised to see the issue of industrial allocation being relitigated in this issue-specific context. This issue has been discussed at length during the development of the NZ ETS and its subsequent reviews with decisions taken and legislated on an appropriate emissions-intensive trade-exposed sector allocation regime. It is important to remind EECA and MBIE (if not to say somewhat disappointing to have to continually do this) that there is no link – *at all* – between the allocation of free units and the absence of the incentive to abate (as units with a market price create the appropriate incentive);

- paragraph 30 on page 12 in the technical paper outlines that:

> "Reducing industrial process emissions from energy intensive industries is technically limited and is not yet economic. Many of our highly energy-intensive industrial plants were built in the 1960s to 1980s. Today, the plants that remain in operation have relatively outdated technologies. These were often built with Government investment. For these single-plant, energy-intensive industries, the main means to reduce emissions is investment in new plant at the end of the existing plant's useful life."

  In climate policy jargon (including Government reporting and the NZ ETS) industrial process emissions are those resulting from a non-combustion chemical reaction (e.g. $CO_2$ from steel making, $CO_2$ from steam methane reformer $H_2$ production, $CO_2$ from calcination in lime/cement kilns etc.). They are not process heat related. They are irreducible as a function of the process chemistry. We recommend caution in terminology and accuracy in attributing emissions correctly as otherwise estimates of emissions reduction from process heat improvements may be overstated;

- paragraph 47 on page 15 of the technical paper outlines that:

> "Objectives such as environmental sustainability or social responsibility are usually only considered as secondary objectives once the risk and return criteria have been met."

  We disagree that sustainability is to be considered secondary to the risk and return of an organisation's investment decision. Sustainability is one of a complex bundle of factors considered by businesses when making investment decisions. NZX for example expects listed issuers to report on ESG (environmental, social and governance) matters. They brought in the non-financial reporting in 2017 on a 'comply or explain' basis under principle 4

of the NZX Corporate Governance Code.[3] This means that if an issuer elects not to report against non-financial reporting measures, it must explain why it did not do this in its annual report. In fact, a growing proportion of the listed NZX issuers are already reporting on ESG matters. Besides that, there are other co-operative ventures within business which have been launched to reduce emissions. For example, agreements such as the Climate Leaders Coalition to promote business leadership and collective action on the issue of climate change. To date, 77 Chief Executives have signed the joint statement, which commits their organisations to take voluntary action on climate change. This includes measuring and publicly reporting their greenhouse gas emissions, setting a public emissions reduction target consistent with keeping within 2° of warming and working with their suppliers to reduce their greenhouse gas emissions along the whole value chain;[4]

- with reference to the barriers discussed we also want to add the following:

    i. there are long lifespans for most process heat investments (e.g. boilers 30+ years);

    ii. there is uncertainty about the reliability for supply of alternatives (e.g. wood for boilers); and

    iii. alternatives (particularly electricity) having underlying systemic issues which have uncertainty compared to the status quo. (e.g. drive to increased electrification increases demand, increases costs and requires new generation. The implied move to 100% renewables creates additional costs and uncertainties in relation to supply also;

- recently, the Government launched a green investment fund to support business to reduce emissions. Barrier C in the technical paper discusses the lack of access to capital. We believe the fund would be a good opportunity to link the two and overcome this barrier to investing in energy efficiency to improve their carbon footprint. However, we recommend that any energy efficiency interventions should be broad and focus on energy efficiency rather than on process heat only. As a general principle, technological neutrality is important in the development and execution of a strategy to support businesses to reduce their emissions; and

- finally, we seek some clarity:

    i. we wish to be assured that the work being undertaken on process heat is 'joined-up' with the work being undertaken by the Ministry for the Environment in response to the Productivity Commission's Low Emissions report, its work on the emissions trading scheme review and the work on renewable electricity being undertaken by the Interim Climate Commission (to name but a few workstreams relevant to the issue of process heat); and

[3] NZX, Principle 4 of the NZX Corporate Governance Code, page 4 [http://s3-ap-southeast-2.amazonaws.com/nzx-prod-c84t3un4/comfy/cms/files/files/000/004/063/original/NZX_Listing_Rules_-_1_January_2019.pdf]

[4] Climate Leader Coalition [https://www.climateleaderscoalition.org.nz/]

ii. the goal being pursued as a result of this policy work. For example, we are unclear as to whether the output of this work will point at the process heat target outlined in the New Zealand Energy Efficiency and Conservation Strategy 2017-2022 entitled 'Unlocking our energy productivity and renewable potential', dated June 2017, or contribute to some other target, and if so, what.

Summary

The BEC welcomes engagement on this important issue. We support the outcomes and again congratulate MBIE and EECA on a well-presented paper. Process heat efficiency and energy efficiency in general has a vital role in helping to meet New Zealand's emission reduction targets.

The BEC has sought to use this submission to highlight some of those areas on which MBIE and EECA could assure themselves to strengthen the quality of the eventual outcome. We are looking forward to continuing to work with both MBIE and EECA on this matter. For questions, please contact Tina Schirr on 04966280 or via tschirr@bec.org.nz.

Yours sincerely

John A Carnegie
Executive Director
BusinessNZ Energy Council

## APPENDIX ONE: ABOUT THE BUSINESSNZ ENERGY COUNCIL

The BusinessNZ Energy Council (BEC) is a group of New Zealand's peak energy sector organisations taking a leading role in creating a sustainable energy future. BEC is a division of BusinessNZ, New Zealand's largest business advocacy group. BEC is a member of the World Energy Council (WEC). BEC members are a cross-section of leading energy sector businesses, government and research organisations. Together with its members BEC is shaping the energy agenda for New Zealand.

Our vision is to support New Zealand's economic wellbeing through the active promotion of the sustainable development and use of energy, domestically and globally. With that goal in mind, BEC is shaping the debate through leadership, influence and advocacy.

BusinessNZ is New Zealand's largest business advocacy body, representing:

- Regional business groups EMA, Business Central, Canterbury Employers' Chamber of Commerce, and Employers Otago Southland
- Major Companies Group of New Zealand's largest businesses
- Gold Group of medium sized businesses
- Affiliated Industries Group of national industry associations
- ExportNZ representing New Zealand exporting enterprises
- ManufacturingNZ representing New Zealand manufacturing enterprises
- Sustainable Business Council of enterprises leading sustainable business practice
- Buy NZ Made representing producers, retailers and consumers of New Zealand-made goods

BusinessNZ is able to tap into the views of over 76,000 employers and businesses, ranging from the smallest to the largest and reflecting the make-up of the New Zealand economy.

In addition to advocacy and services for enterprise, BusinessNZ contributes to Government, tripartite working parties and international bodies including the International Labour Organisation (ILO), the International Organisation of Employers (IOE) and the Business and Industry Advisory Council (BIAC) to the Organisation for Economic Cooperation and Development (OECD).


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