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COMPLETE

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Page 1: Introduction

Q1 Name (first and last name)

Nick Meeten

Q2 Email

nick@appliedenergy.co.nz

Q3 Is this an individual submission, or is it on behalf of a group or organisation? **On behalf of a group or organisation**

Q4 Which group do you most identify with, or are representing? **Consultant, financial services etc**

Q5 Business name or organisation (if applicable)

Applied Energy

Q6 Position title (if applicable)

Director

Q7 Important information about your submission (important to read)The information provided in submissions will be used to inform the Ministry of Business, Innovation and Employment's (MBIE's) work on Accelerating renewable energy and energy efficiency.We will upload the submissions we receive and publish them on our website. If your submission contains any sensitive information that you do not want published, please indicate this in your submission.The Privacy Act 1993 applies to submissions. Any personal information you supply to MBIE in the course of making a submission will only be known by the team working on the Accelerating renewable energy and energy efficiency.Submissions may be requested under the Official Information Act 1982. Submissions provided in confidence can usually be withheld. MBIE will consult with submitters when responding to requests under the Official Information Act 1982.We intend to upload submissions to our website at www.mbie.govt.nz. Can we include your submission on the website?

Yes

Q8 Can we include your name?

Yes

Q9 Can we include your organisation (if submitting on behalf of an organisation)?

Yes

Q10 All other personal information will not be proactively released, although it may need to be released if required under the Official Information Act. Please indicate if there is any other information you would like withheld.

Respondent skipped this question

Page 2

Q11 Where are you located?

Respondent skipped this question

Q12 In what region or regions does your organisation mostly operate?

All of New Zealand

Page 3: Areas you wish to provide feedback on

Q13 Part A relates to process heat.Please indicate which sections, if any, you would like to provide feedback on.

Section 1: Addressing information failures,
Section 3: Innovating and building capability,
Section 4: Phasing out fossil fuels in process heat,
Section 5: Boosting investment in renewable energy and energy efficiency technologies
 ,
Section 6: Cost recovery mechanisms

Q14 Part B relates to renewable electricity generation. Please indicate which sections, if any, you would like to provide feedback on.

Respondent skipped this question

Page 4: Section 1: Addressing information failures

Q15 Option 1.1 would require large energy users to report their emissions and energy use annually, publish Corporate Energy Transitions Plans and conduct energy audits every four years. Do you support this option?

Yes - I fully support this option

Q16 Please explain your answer

This is essential to promote transparency and allow improvements to be monitored.

Q17 Which parts (set out in Table 3) do you support?

Target group - companies with an annual energy spend of greater than \$2 million per annum

,

Public reporting,

Government reporting,

Energy auditing,

Compliance

Q18 Please explain your answer

Respondent skipped this question

Q19 What public reporting requirements (listed in Table 3) should be disclosed?

Annual corporate-level energy use and emissions, split out by a range of sources including coal, gas, electricity and transport

,

Energy efficiency actions taken that year,

Plans to reduce emissions to 2030

Q20 In your view, should businesses be expected to include transport energy and emissions in these reporting requirements?

No,
Please explain your answer:
Some energy intensive businesses may have relatively few vehicles, whilst other businesses which are not classified as 'High Energy Users' may have many vehicles, but are not captured under this reporting regime. We believe transportation energy should be kept separate from process & production energy.

Q21 For manufacturers: what will be the impact on your business to comply with the requirements?

Respondent skipped this question

Q22 Option 1.1. Suggests that requirements to publish Corporate Energy Transition Plans should apply to large energy users, and proposes defining large energy users as those with an annual energy spend (purchased) of greater than \$2 million per annum. Do you agree with this definition? **No**

Q23 If you selected no, please describe what in your view would be an appropriate threshold to define 'large energy users'.

\$1 million per annum with transport energy excluded.

Q24 Is there any potential for unnecessary duplication under these proposals and the disclosures proposed in the MBIE-Ministry for the Environment discussion document Climate-related Financial Disclosures – Understanding your business risks and opportunities related to climate change, October 2019? **No**

Page 5: Section 1 - Option 1.2: Electrification information package and feasibility studies

Q25 Do you support the proposal to develop an electrification information package? **Yes**

Q26 Would an electrification information package be of use to your business? **Yes**

Q27 Do you support customised low-emission heating feasibility studies? **Yes**

Q28 In your view, which of the components should be scaled up and/or prioritised?

providing information about ways to increase reliability and resilience of electrically-supplied plant and systems **Scaled up**

co-funding low-emission heating feasibility studies for EECA's business partners **Scaled up, Prioritised**

Q29 Would a customised low-emission heating feasibility study be of use to your business? **No**

Q30 Please describe any components other than those identified that could be included in an information package.

Current EECA funding rules are limited to energy demands or energy consumers only. We request that EECA funding can also be provided for studies which will show where waste heat energy supplies are available, so these 'free' energy supplies can be identified and promoted to potential consumers. Thereby helping to match waste heat supplies & demands. Currently the EECA rules look only at the demand side.

Page 6: Section 1 - Option 1.3: Provide benchmarking information for food processing industries

Q31 Do you support benchmarking in the food processing sector? **Yes**

Q32 Would benchmarking be suited to, and useful for, other industries, such as wood processing? **Yes (please specify):**
Education buildings, central & local government office buildings, aquatic centres

Q33 Do you believe government should have a role in facilitating this or should it entirely be led by industry? **Government should have a role**

Q34 Please explain your answer

Benchmarking needs to be independently assessed, which will incur a cost to do this. This cost should be initially funded by government to get the system established, and subsequent updates funded by industry.

Page 7: Section 2: Developing markets for bioenergy and direct geothermal use

Q35 Do you agree that some councils have regional air quality rules that are barriers to wood energy? **Respondent skipped this question**

Q36 Please provide examples of regional air quality rules that you see as barriers to wood energy. Please also note which council's plan you are referring to. **Respondent skipped this question**

Q37 Do you agree that a National Environmental Standards for Air Quality (NESAQ) users' guide on the development and operation of the wood energy facilities will help to reduce regulatory barriers to the use of wood energy for process heat? **Respondent skipped this question**

Q38 What do you consider a NESAQ users' guide should cover? Please provide an explanation if possible. **Respondent skipped this question**

Q39 Please describe any other options that you consider would be more effective at reducing regulatory barriers to the use of wood energy for process heat. **Respondent skipped this question**

Q40 In your opinion, what technical rules relating to wood energy would be better addressed through the NESAQ than through the proposed users' guide (option 2.1)? **Respondent skipped this question**

Page 8: Section 2 - continued: Developing markets for bioenergy and direct geothermal use

Q41 In your view, could the Industry Transformation Plans stimulate sufficient supply and demand for bioenergy to achieve desired outcomes?

Respondent skipped this question

Q42 What other options are worth considering?

Respondent skipped this question

Q43 Is Government best placed to provide market facilitation in bioenergy markets?

Respondent skipped this question

Q44 How could Government best facilitate bioenergy markets? Please be as specific as possible, giving examples.

Respondent skipped this question

Q45 In your view, how can government best support direct use of geothermal heat?

Respondent skipped this question

Q46 What other options are worth considering?

Respondent skipped this question

Page 9: Section 3: Innovating and building capability

Q47 Do you agree that de-risking commercially viable low-emission technology should be a focus of government support on process heat?

Strongly agree,
Please explain your answer:
Implementing new technologies or processes inherently carry risk. Early adopters should be incentivized by providing some protection from this risk.

Q48 Do you agree that diffusing commercially viable low-emission technology should be a focus of government support on process heat?

Agree,
Please explain your answer:
Once new technology is proven by early adopters, it is then easier to achieve subsequent diffusion of the technology.

Q49 Is Energy Efficiency and Conservation Authority (EECA) grant funding to support technology diffusion the best vehicle for this?

Yes

Q50 For manufacturers and energy service experts: would peer learning and lead to reducing perceived technology risks?

Yes

Q51 For manufacturers and energy service experts: would on-site technology demonstration visits lead to reducing perceived technology risks?

No

Q52 Is there a role for the Government in facilitating this?

Yes,

Please expand on your answer:

Facilitate industry specific seminars, road shows and free webinars.

Page 10: Section 3 (continued): Innovating and building capability

Q53 For emissions-intensive and highly integrated (EIHI) stakeholders: What are your views on our proposal to collaborate to develop low-carbon roadmaps?

Industries want access to expertise which is focused on their particular site. Overseas technology is often viewed as risky until there is local support available and NZ demonstrations of the technology.

Q54 Would low-carbon roadmaps assist in identifying feasible technological pathways for decarbonisation?

No

Q55 What are the most important issues that would benefit from a partnership and co-design approach?

Providing industry with 'free' advice and expertise in the form of real people talking about their actual site, but trying to guide the industry down the path of making changes/improvements to meet the targets set by Government.

Q56 What, in your view, is the scale of resourcing required to make this initiative successful?

The resourcing made available needs to be linked to the scale of carbon usage of the industry/site.

Page 11: Section 4: Phasing out fossil fuels in process heat

Q57 Do you agree with the proposal to ban new coal-fired boilers for low and medium temperature requirements?

Strongly agree

Q58 Do you agree with the proposal to require existing coal-fired process heat equipment for end-use temperature requirements below 100 degrees Celsius to be phased out by 2030?

Strongly agree

Q59 Referring to Question 56 - is this ambitious or is it not doing enough?

Not doing enough,

Please explain your answer:

We believe the proposal is striking the right balance between being ambitious and not doing enough.

Q60 For manufacturers: what would be the likely impacts or compliance costs on your business of a ban on new coal-fired process heat equipment?

Respondent skipped this question

Q61 For manufacturers: what would be the likely impacts or compliance costs on your business of requiring existing coal-fired process heat equipment supplying end-use temperature requirements below 100°C to be phased out by 2030.

Respondent skipped this question

Q62 Could the Corporate Energy Transition Plans (Option 1.1) help to design a more informed phase out of fossil fuels in process heat?

No,
Please explain your answer:
To force change, specific rules with specific time scales need to be set in place.

Q63 Would a timetabled phase out of fossil fuels in process heat be necessary alongside the Corporate Energy Transition Plans?

Yes

Q64 In your view, could national direction under the Resource Management Act (RMA) be an effective tool to support clean and low greenhouse gas-emitting methods of industrial production?

Yes

Q65 If yes, how?

The RMA is a system which is well established and understood.

Q66 In your view, could adoption of best available technologies be introduced via a mechanism other than the RMA?

Yes,
Please explain your answer:
By using the ETS.

Page 12: Section 5: Boosting investment in energy efficiency and renewable energy technologies

Q67 Do you agree that complementary measures to the New Zealand Emissions Trading Scheme (NZ-ETS) should be considered to accelerate the uptake of cost-effective clean energy projects?

Strongly agree

Q68 Would you favour regulation, financial incentives or both?

both,
Please explain your answer:
The carrot & stick approach is best, with early adopters provided with financial incentives and protection from innovation risk.

Q69 In your view what is a bigger barrier to investment in clean energy technologies, internal competition for capital or access to capital?

internal competition for capital

Q70 If you favour financial support, what sort of incentives could be considered?

Free or subsidised access to expertise for feasibility studies. Scaled capital support for implementation of clean energy technologies based on amount of carbon savings predicted with ongoing tax credits for a time based on savings actually achieved.

Q71 What are the benefits of these incentives?

It will help 'get the wheels turning' on transitioning away from business as usual to a low carbon economy.

Q72 What are the risks of these incentives?

There are financial risks associated with any funding offers, however it is also well established that there are huge risks associated with 'doing nothing'.

Q73 What are the costs of these incentives?

Respondent skipped this question

Q74 What measures other than those identified above could be effective at accelerating investment in clean energy technologies?

Setting up an anonymous information line to allow tip-offs to be made where employees, suppliers or designers see poor decision making occurring in government projects which will have environmental consequences for a considerable time into the future.

Page 13: Section 6: Cost recovery mechanisms

Q75 What is your view on whether cost recovery mechanisms should be adopted to fund policy proposals in Part A of the Accelerating renewable energy and energy efficiency discussion document?

We believe the ETS will provide this, and another system is unnecessary duplication.

Q76 What are the advantages of introducing a levy on consumers of coal to fund process heat activities?

Respondent skipped this question

Q77 What are the disadvantages of introducing a levy on consumers of coal to fund process heat activities?

Respondent skipped this question

Page 14: Section 7: Enabling development of renewable energy under the Resource Management Act 1991

Q78 Do you agree that the current NPSREG gives sufficient weight and direction to the importance of renewable energy?

Respondent skipped this question

Q79 What changes to the NPSREG would facilitate future development of renewable energy?

Respondent skipped this question

Q80 What policies could be introduced or amended to provide sufficient direction to councils regarding the matters listed in points a-i mentioned on pages 60-61 of the discussion document?

Respondent skipped this question

Q81 How should the NPSREG address the balancing of local environmental effects and the national benefits of renewable energy development in RMA decisions?

Respondent skipped this question

Q82 What are your views on the interaction and relative priority of the NPSREG with other existing or pending national direction instruments? **Respondent skipped this question**

Q83 Do you have any suggestions for how changes to the NPSREG could help achieve the right balance between renewable energy development and environmental outcomes? **Respondent skipped this question**

Q84 What objectives or policies could be included in the NPSREG regarding councils' role in locating and planning strategically for renewable energy resources? **Respondent skipped this question**

Q85 Can you identify any particular consenting barriers to development of other types of renewable energy than REG, such as green hydrogen, bioenergy and waste-to-energy facilities? **Respondent skipped this question**

Q86 Can any specific policies be included in a national policy statement to address these barriers? **Respondent skipped this question**

Q87 What specific policies could be included in the NPSREG for small-scale renewable energy projects? **Respondent skipped this question**

Q88 The NPSREG currently does not provide any definition or threshold for "small and community-scale renewable electricity generation activities". Do you have any view on the definition or threshold for these activities? **Respondent skipped this question**

Q89 What specific policies could be included to facilitate re-consenting consented but unbuilt wind farms, where consent variations are needed to allow the use of the latest technology? **Respondent skipped this question**

Q90 Are there any downsides or risks to amending the NPSREG? **Respondent skipped this question**

Page 15: Section 7 - continued

Q91 Do you agree that National Environmental Standards (NES) would be an effective and appropriate tool to accelerate the development of new renewables and streamline re-consenting? **Respondent skipped this question**

Q92 What are the pros of using National Environmental Standards as a tool to accelerate the development of new renewables and streamline re-consenting? **Respondent skipped this question**

Q93 What are the cons of using National Environmental Standards as a tool to accelerate the development of new renewables and streamline re-consenting? **Respondent skipped this question**

Q94 What do you see as the relative merits and priorities of changes to the NPSREG compared with work on NES? **Respondent skipped this question**

Q95 What are the downsides and risks to developing NES? **Respondent skipped this question**

Q96 What renewables activities (including both REG activities and other types of renewable energy) would best be suited to NES? **Respondent skipped this question**

Q97 What technical issues could best be dealt with under a standardised national approach? **Respondent skipped this question**

Q98 Would it be practical for NES to set different types of activity status for activities with certain effects, for consenting or re-consenting? **Respondent skipped this question**

Q99 Are there any aspects of renewable activities that would have low environmental effects and would be suitable for having the status of permitted or controlled activities under the RMA? Please provide details. **Respondent skipped this question**

Q100 Do you have any suggestions for what rules or standards could be included in NES or National Planning Standards to help achieve the right balance between renewable energy development and environmental outcomes? **Respondent skipped this question**

Q101 Compared to the NPSREG or National Environment Standards, would National Planning Standards or any other RMA tools be more suitable for providing councils with national direction on renewables? **Respondent skipped this question**

Q102 Please explain your answer **Respondent skipped this question**

Page 16: Section 7 - continued

Q103 Are there opportunities for non-statutory spatial planning techniques to help identify suitable areas for renewables development (or no go areas)? **Respondent skipped this question**

Q104 Do you have any comments on potential options for pre-approval of renewable developments? **Respondent skipped this question**

Q105 Are the current National Policy Statement on Electricity Transmission (NPSET) and National Environmental Standards for Electricity Transmission Activities (NESETA) fit-for-purpose to enable accelerated development of renewable energy? **Respondent skipped this question**

Q106 What changes (if any) would you suggest for the NPSET and NESETA to accelerate the development of renewable energy? **Respondent skipped this question**

Q107 Can you suggest any other options (statutory or non-statutory) that would help accelerate the future development of renewable energy? **Respondent skipped this question**

Page 17: Section 8: Supporting renewable electricity generation investment

Q108 Do you agree there is a role for government to provide information, facilitate match-making and/or assume some financial risk for PPAs? **Respondent skipped this question**

Q109 Would support for PPAs effectively encourage electrification? **Respondent skipped this question**

Q110 Would support for PPAs effectively encourage new renewable generation investment? **Respondent skipped this question**

Q111 How could any potential mismatch between generation and demand profiles be managed by the Platform and/or counterparties? **Respondent skipped this question**

Q112 Please rank the following variations on PPA Platforms in order of preference. 1 = most preferred, 4 = least preferred. **Respondent skipped this question**

Q113 What are your views on Contract Matching Services? **Respondent skipped this question**

Q114 What are your views on State sector-led PPAs? **Respondent skipped this question**

Q115 What are your views on Government guaranteed contracts? **Respondent skipped this question**

Q116 What are your views on a Clearing house for PPAs? **Respondent skipped this question**

Q117 For manufacturers: what delivered electricity price do you require to electrify some or all of your process heat requirements?

Respondent skipped this question

Q118 For manufacturers: is a long-term electricity contract an attractive proposition if it delivers more affordable electricity?

Respondent skipped this question

Q119 For investors / developers: what contract length and price do you require to make a return on an investment in new renewable electricity generation capacity?

Respondent skipped this question

Q120 For investors / developers: is a long-term electricity contract an attractive proposition if it delivers a predictable stream of revenues and a reasonable return on investment?

Respondent skipped this question

Page 18: Section 8 - continued

Q121 Do you consider the development of the demand response (DR) market to be a priority for the energy sector?

Respondent skipped this question

Q122 Do you think that demand response (DR) could help to manage existing or potential electricity sector issues?

Respondent skipped this question

Q123 What are the key features of demand response markets?

Respondent skipped this question

Q124 Which features of a demand response market would enable load reduction or asset use optimisation across the energy system?

Respondent skipped this question

Q125 Which features of a demand response market would enable the uptake of distributed energy resources?

Respondent skipped this question

Q126 What types of demand response services should be enabled as a priority?

Respondent skipped this question

Q127 Which services make sense for New Zealand?

Respondent skipped this question

Page 19: Section 8 - continued

Q128 Would energy efficiency obligations effectively deliver increased investment in energy efficient technologies across the economy?

Respondent skipped this question

Q129 Is there an alternative policy option that could deliver on this aim more effectively?

Respondent skipped this question

Q130 If progressed, what types of energy efficiency measures and technologies should be considered in order to meet retailer/distributor obligations?

Respondent skipped this question

Q131 Should these be targeted at certain consumer groups?

Respondent skipped this question

Q132 Do you support the proposal to require electricity retailers and/or distributors to meet energy efficiency targets?

Respondent skipped this question

Q133 Which entities would most effectively achieve energy savings?

Respondent skipped this question

Q134 What are the likely compliance costs of this policy?

Respondent skipped this question

Page 20: Section 8 - continued

Q135 Do you agree that the development of an offshore wind market should be a priority for the energy sector?

Respondent skipped this question

Q136 What do you perceive to be the major benefits to developing offshore wind assets in New Zealand?

Respondent skipped this question

Q137 What do you perceive to be the major costs to developing offshore wind assets in New Zealand?

Respondent skipped this question

Q138 What do you perceive to be the major risks to developing offshore wind assets in New Zealand?

Respondent skipped this question

Page 21: Section 8 - continued

Q139 This policy option involves a high level of intervention and risk. Would another policy option better achieve our goals to encourage renewable energy generation investment?

Respondent skipped this question

Q140 Could the proposed policy option be re-designed to better achieve our goals? **Respondent skipped this question**

Q141 Should the Government introduce Renewable Portfolio Standards (RPS) requirements? **Respondent skipped this question**

Q142 At what level should a RPS quota be set to incentivise additional renewable electricity generation investment? **Respondent skipped this question**

Q143 Should RPS requirements apply to all electricity retailers? **Respondent skipped this question**

Q144 Should RPS requirements apply to all major electricity users? **Respondent skipped this question**

Q145 What would be an appropriate threshold for the inclusion of major electricity users (i.e. annual consumption above a certain GWh threshold)? **Respondent skipped this question**

Q146 Would a government backed certification scheme support your corporate strategy and export credentials? **Respondent skipped this question**

Q147 What types of renewable projects should be eligible for renewable electricity certificates? **Respondent skipped this question**

Q148 If this policy option is progressed, should electricity retailers be permitted to invest in energy efficient technology investments to meet their renewable portfolio standards? (See option 8.3 on energy efficiency obligations). **Respondent skipped this question**

Q149 If this policy option is progressed, should major electricity users be permitted to invest in energy efficient technology investments to meet their renewable portfolio standards? (See option 8.3 on energy efficiency obligations). **Respondent skipped this question**

Q150 What are the likely administrative and compliance costs of this policy for your organisation? **Respondent skipped this question**

Page 22: Section 8 - continued

Q151 This policy option involves a high level of intervention and risk. Would another policy option better achieve our goals to encourage renewable energy generation investment? **Respondent skipped this question**

Q152 Could this policy option be re-designed to better achieve our goals? **Respondent skipped this question**

Q153 Do you support the managed phase down of baseload thermal electricity generation? **Respondent skipped this question**

Q154 Would a strategic reserve mechanism adequately address supply security, and reduce emissions affordably, during a transition to higher levels of renewable electricity generation? **Respondent skipped this question**

Q155 Under what market conditions should thermal baseload held in a strategic reserve be used? **Respondent skipped this question**

Q156 Would you support requiring thermal baseload assets to operate as peaking plants or during dry winters? **Respondent skipped this question**

Q157 What is the best way to meet resource adequacy needs as we transition away from fossil-fuelled electricity generation and towards a system dominated by renewables? **Respondent skipped this question**

Page 23: Section 8 - continued

Q158 Do you have any views regarding the options to encourage renewable electricity generation investment that we considered, but are not proposing to investigate further? (See pages 90 - 92 of the Accelerating renewable energy and energy efficiency discussion document). **Respondent skipped this question**

Page 24: Section 9: Facilitating local and community engagement in renewable energy and energy efficiency

Q159 Should New Zealand be encouraging greater development of community energy projects? **Respondent skipped this question**

Q160 What types of community energy project are most relevant in the New Zealand context? **Respondent skipped this question**

Q161 What are the key benefits of a focus on community energy? **Respondent skipped this question**

Q162 What are the key downsides or risks of a focus on community energy? **Respondent skipped this question**

Q163 Have we accurately identified the barriers to community energy proposals?

Respondent skipped this question

Q164 Which barriers do you consider most significant? You may select more than one answer.

Respondent skipped this question

Q165 Are the barriers noted above in relation to electricity market arrangements adequately covered by the scope of existing work across the Electricity Authority and electricity distributors?

Respondent skipped this question

Q166 What do you see as the pros of a clear government position on community energy?

Respondent skipped this question

Q167 What do you see as the cons of a clear government position on community energy?

Respondent skipped this question

Q168 What do you see as the pros of government support for pilot community energy projects?

Respondent skipped this question

Q169 What do you see as the cons of government support for pilot community energy projects?

Respondent skipped this question

Q170 Are there any other options you can suggest that would support further development of community energy initiatives?

Respondent skipped this question

Page 25: Section 10: Connecting to the national grid

Q171 Please select the option or combination of options, if any, that would be most likely to address the first mover disadvantage.

Respondent skipped this question

Q172 What do you see as the disadvantages or risks of Option 10.1?

Respondent skipped this question

Q173 What do you see as the disadvantages or risks of Option 10.2?

Respondent skipped this question

Q174 What do you see as the disadvantages or risks of Option 10.3.1?

Respondent skipped this question

Q175 What do you see as the disadvantages or risks of Option 10.3.2?

Respondent skipped this question

Q176 Would introducing a requirement, or new charge, for subsequent customers to contribute to costs already incurred by the first mover create any perverse incentives? **Respondent skipped this question**

Q177 Are there any additional options that should be considered? **Respondent skipped this question**

Page 26: Section 10 (continued): Connecting to the national grid

Q178 Do you think that there is a role for government to provide more independent public data? **Respondent skipped this question**

Q179 Is there a role for Government to provide independent geospatial data (e.g. wind speeds for sites) to assist with information gaps? **Respondent skipped this question**

Q180 Should MBIE's Electricity Demand and Generation Scenarios (EDGS) be updated more frequently? **Respondent skipped this question**

Q181 If you said yes, how frequently should they be updated? **Respondent skipped this question**

Q182 Should MBIE's EDGS provide more detail, for example, information at a regional level? **Respondent skipped this question**

Q183 Should the costs to the Crown of preparing EDGS be recovered from Transpower, and therefore all electricity consumers (rather than tax-payers)? **Respondent skipped this question**

Q184 Would you find a users' guide (on current regulation and approval process for getting an upgraded or new connection) helpful? **Respondent skipped this question**

Q185 What information would you like to see in such a guide? **Respondent skipped this question**

Q186 Who would be best placed to produce a guide? **Respondent skipped this question**

Page 27: Section 10 (continued): Connecting to the national grid

Q187 Do you think that there is a role for government in improving information sharing between parties to enable more coordinated investment? **Respondent skipped this question**

Q188 Is there value in the provision of a database (and/or map) of potential renewable generation and new demand, including location and potential size?

Respondent skipped this question

Q189 If so, who would be best to develop and maintain this?

Respondent skipped this question

Q190 How should it be funded?

Respondent skipped this question

Q191 Should measures be introduced to enable coordination regarding the placement of new wind farms?

Respondent skipped this question

Q192 Are there other information sharing options that could help address investment coordination issues? What are they?

Respondent skipped this question

Page 28: Section 11: Local network connections and trading arrangements

Q193 Have you experienced, or are you aware of, significant barriers to connecting to the local networks? Please describe them.

Respondent skipped this question

Q194 Are there any barriers that will not be addressed by current work programmes outlined on pages 118 - 122 of the discussion document?

Respondent skipped this question

Q195 Should the option to produce a users' guide (see Option 10.6 on page 110) also include the process for getting an upgraded or new distribution line?

Respondent skipped this question

Q196 Are there other Section 10 information options that could be extended to include information about local networks and distributed generation?

Respondent skipped this question

Q197 Do the work programmes outlined on pages 118 - 122 cover all issues to ensure the settings for connecting to and trading on the local network are fit for purpose into the future?

Respondent skipped this question

Q198 Are there things that should be prioritised, or sped up?

Respondent skipped this question

Q199 What changes, if any, to the current arrangements would ensure distribution networks are fit for purpose into the future?

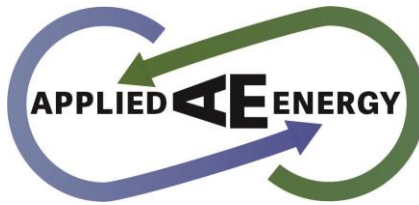
Respondent skipped this question

Page 29: Additional comments

Q200 Do you have any additional feedback?

We believe clear direction must be provided to all participants of Government projects which have an energy component, on what needs to be considered in their decision making process. Things like time horizons for life cycle analysis. Carbon prices to be used. Making it clear to department managers that it is OK to have a reasonable price premium for a low carbon solution.

Q201 You may upload additional feedback as a file. File size limit is 16MB. We accept PDF or DOC/DOCX. **Respondent skipped this question**



6 January 2020

Supporting information in relation to our submission on ‘Accelerating renewable energy and energy efficiency’ discussion paper.

Approximately 30% of all the energy consumed by NZ houses is used to generate heat in hot water systems¹ (Figure 1). We estimate that at a city scale, this plus the energy used in commercial & industrial buildings to generate hot water typically equates to approximately 10% - 20% of the total energy used in buildings, being discharged as waste heat every day into the wastewater network (Figure 2). Thus, the wastewater network(s) in every town and city of New Zealand are an enormous collector of waste heat.

Residential Building Energy Footprint

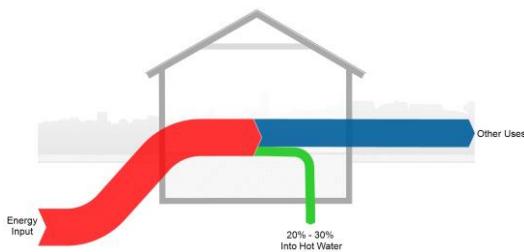


Figure 1

City Buildings Energy Footprint

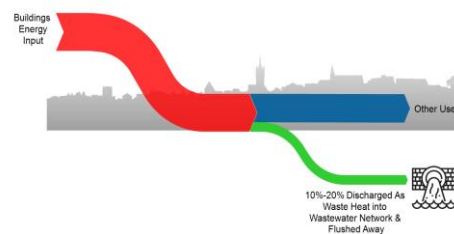
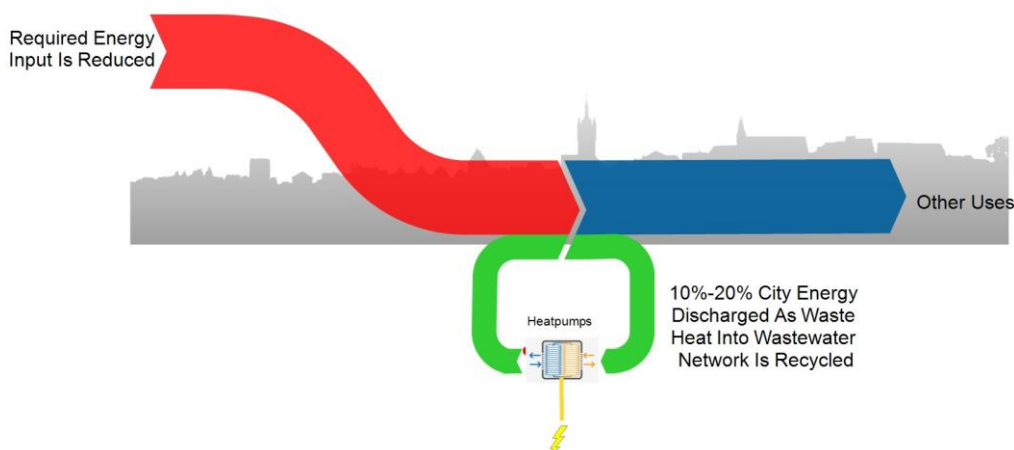


Figure 2

In Christchurch, we have calculated that there is sufficient waste heat available within wastewater to heat 10,000 homes. In Auckland alone, this energy has a monetary value of approximately \$1 million/day (\$360 million/annum). Currently this waste heat is typically ignored and simply discharged into our rivers & oceans. However, for a low carbon future, wastewater should be identified as large and untapped supply of waste heat available in every town and city in NZ, available for use by capturing and recycling this thermal energy.

City Energy Footprint



¹ BRANZ Household Energy End-use Study (HEEP) (Issacs et al 2010)

Applied Energy are global experts in this subject and we have undertaken projects in recent years for both Dunedin City and Christchurch City, to produce 'Energy Maps' of their respective wastewater networks (Figure 3). These wastewater heat maps provide easy visual information for Council staff and the public alike, showing where and how much free waste heat is available **as a heat supply** for reuse.

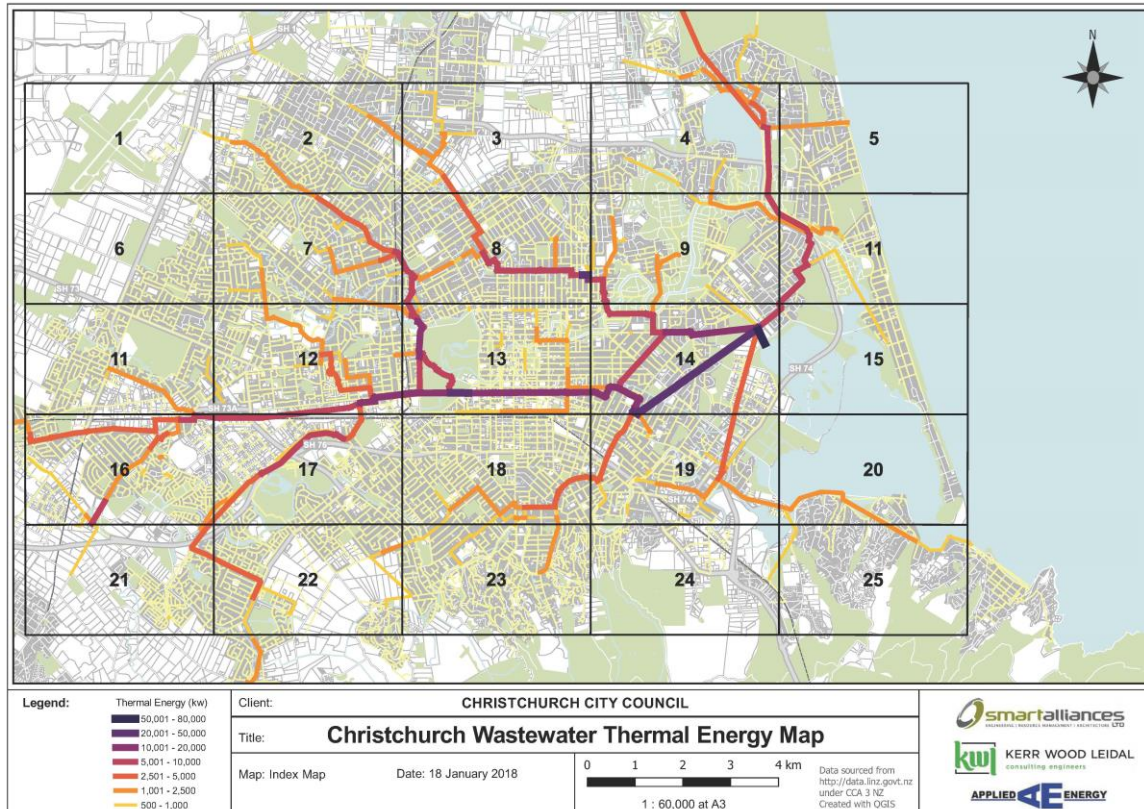


Figure 3

In both of these projects, EECA funding support was not available for these studies because the studies relate to waste heat energy **supply** and are not associated with any particular building/site or energy **consumer**. EECA funding support was not available because EECA funding rules currently demand that things like feasibility studies must be linked to a specific building/site as a consumer.

We submit to the 'Accelerating renewable energy and energy efficiency' discussion paper, that EECA funding support rules should be changed to also allow funding support to be provided for studies such as this, which identify **supplies** of waste heat available, but are not linked to any particular building.

Yours faithfully



Nick Meeten
 Director
 For and on behalf of Applied Energy Ltd