Contact Energy Submission

MBIE Discussion Document

Accelerating renewable energy and energy efficiency

28 February 2020

Summary

1. Contact Energy welcomes the opportunity to submit on MBIE's discussion document, *Accelerating Renewable Energy and Energy Efficiency.*

2. Contact supports the government's renewable electricity and climate change goals. We agree that New Zealand's energy system is a key component of the future economy that is productive, sustainable and inclusive. And Contact has made, and will continue to make a material contribution to that goal as an innovative, safe and efficient generator working with business customers, partners and suppliers to decarbonize New Zealand's energy sector.

3. There has been material progress across the sector to decarbonize our economy. Contact is continuing to invest in building a renewable, flexible and reliable generation portfolio which has helped us to reduce our greenhouse gas emissions by 59% since 2012. Contact is also working with its customers on opportunities to reduce emissions, and enhance energy efficiency.

4. We also recognize that collectively more must be done if New Zealand is to meet its climate targets, and Contact has a key role to play in this transition.

5. Concurrent with this consultation, the Ministry for the Environment is consulting on the Emissions Trading Scheme to limit total emissions and set market mechanisms to determine carbon pricing, consistent with the Climate Change Response (Emissions Trading Reform) Amendment Bill. In our view, an effective ETS will be the single most efficient mechanism to accelerate renewables and achieve the government's renewable electricity and climate change goals.

6. However, it is recognized that the proposed ETS settings and exemptions mean that the ETS alone will not deliver the desired pace of accelerated change required, such as the electrification of process heat and transport. As the paper identifies, the carbon price would need to be higher than the proposed cap to make the transition of process heat and transport away from fossil fuels a reality, without further compulsion or incentives. Contact recognizes the complexity and risk of economic shocks that a disorderly transition would cause. In particular, the risk to New Zealand's international competitiveness for HITE (High Intensity, Trade Exposed) businesses.

7. Market-based competition is the best mechanism to deliver decarbonisation in the long term. However, Contact also recognizes the role of government to provide complementary measures in the medium term to ensure New Zealand meets its climate change commitments. Key proposals that Contact supports include:

    - the proposed ban on new fossil fuel boilers for low and medium temperature heat, and the phase-down of existing fossil fuel boilers within a reasonable time. We believe there is merit in extending the options to include all fossil fuels not just coal as proposed, but a timeframe for phase down needs to reflect the practicalities of connecting to transmission and distribution networks; and

- the review of the Resource Management Act 1991 to support renewable electricity generation. Contact believes that the most effective way to help apply the correct balance is to change Part 2 of the Act to include the use and development of renewable energy as a "Matter of National Importance" in section 6. We have a range of other specific recommendations in this area which are discussed further under Section 7.

8. Contact has identified additional opportunities not covered in the consultation that we consider are consistent with the government's objectives and merit further consideration. These include:

- **creating a new structure ("ReserveCo") to manage dry year risk**. This proposal would eliminate coal fired generation from normal market conditions and ensure that security of supply will not be compromised by keeping reserve generation available for extreme dry conditions. This outcome could be achieved in two ways:
    i. By transferring the Huntly Rankine units to a new publicly or privately owned ReserveCo who would own, operate and manage the fuel supply. This would eliminate coal fired generation from normal market conditions. The cost of purchasing and operating the Huntly Rankine Units would then be recovered through a levy on the industry, and appropriate rules about when it can operate put in place This structure would be very similar to the previous Whirinaki Reserve Energy Scheme.
    ii. Alternatively, under a ReserveCo model, Transpower could periodically run a contestable auction to procure energy reserves. In the short term and based on current market conditions, it is likely that the outcome would be the same – with the Huntly Rankine units providing ReserveCo capacity. In the longer term as further renewable generation becomes available, this may move to gas-fired generation sitting within the ReserveCo. Further details are provided in response to Option 8.6;

- **facilitating grid investment by significantly lowering the default discount rate** that applies to major transmission grid investments. The default discount rate of 7% that applies to Transpower's major capital expenditure projects should be reduced to no more than Transpower's WACC of 4.57% and ideally at the government's social rate of time preference of 3%. Using a figure of 3% for all of Transpower's costs should also be considered. These changes will reduce the cost of using the national grid and would help accelerate the conversion of fossil fuel based demand to electricity;

- **finalising the review of Transmission Pricing Methodology (TPM)**. There is currently too much uncertainty about what both new and existing customers will have to pay to connect to the national grid. This uncertainty is impeding decarbonisation. This is a risk that the Electricity Authority's proposals to amend the TPM may also make decarbonisation more difficult in some circumstances. A case in point would be for a dairy factory looking to switch to electricity from fossil fuels. Under the existing TPM, transmission charges for a North Island dairy factory would be relatively low as their contribution to peak demand is low. Under the Authority's current proposals, transmission charges for the dairy factory would rise materially;

- **reinvesting revenues from the ETS** into initiatives to decarbonize the economy. The ETS revenues could be made available as a contestable investment fund. This fund would be available for projects that would facilitate or accelerate decarbonisation. Investments in electricity transmission and distribution networks should be treated as priority areas which should include, as a priority, accelerating network connections;

- **using demand response instead of peaking generation**. The electricity code should be amended to treat demand side response on the same basis as generation. Demand side response is the best way to meet forecast peak demand growth resulting from decarbonisation. It is cheaper, cleaner and faster than traditional gas fired peakers; and

- **unconstraining the HVDC to get more South Island renewable generation into the North Island.** Introducing new North Island reserves into the market would enable the HVDC to operate at its nameplate capacity of 1,200 MW. Currently, the HVDC is constrained to a maximum effective level of approximately 900 MW due to reserve constraints in the North Island. Freeing up this additional 300 MW of latent transmission capacity would enable more South Island hydro generation to reach North Island demand, reduce the need for North Island thermal generation and reduce hydro spill. Various barriers exist to the market providing more North Island reserves, including the regulatory arrangements for interruptible load.

9. We are happy to discuss and provide further information on any of the matters raised in this submission.

Yours sincerely

James Kilty
Chief Generation & Development Officer

Addressing information failures

10. The government plays an important role making information available to reduce information-related barriers to migration to renewable energy. However, the government's role should complement, and not replace, existing reporting and the strong incentives that exist on a commercial basis.

11. Consumers are increasingly interested in the social responsibility of companies from which they purchase goods and services. And companies are increasingly focused on demonstrating their social licence to operate. As a result, companies are continuing to improve the information and transparency they make publically available. As a publicly listed company and a generator, Contact provides significant reporting on its progress toward a renewable future.

12. Contact is focused on leading New Zealand's low carbon transition and contributing to global action on climate change. Since 2012 Contact has reduced its emissions from power generation (Scope 1) by almost 60% through closing thermal gas-fired plants, and building new renewable low-carbon generation. Contact is currently drilling appraisal wells on the Tauhara geothermal field as we build towards an investment decision for a new geothermal power station in 2020. Contact's targets reducing its Scope 1 and 2 emissions 34% by 2026, and its Scope 3 emissions from use of sold products 30% by 2026, from a base year of 2018.

13. Contact has set and reports on ambitious emissions target reductions, which are independently verified by the Science Based Targets initiative (SBTi). These science-based targets are emissions reductions in line with what the latest climate science says is needed to meet the goals of the Paris Agreement – to limit global warming to well below 2˚c above pre-industrial levels.

14. More recently, Contact has taken a four-year sustainability linked loan facility from Westpac, where Contact Energy will receive a discounted interest rate on the sustainability-linked loan if it meets ambitious targets linked to its Environmental, Social and Governance (ESG) rating determined by the independent ratings agency RobecoSAM.

Q 1.1	Require large energy users to publish Corporate Energy Transition Plans (including reporting emissions) and conduct energy audits

15. A combination of the ETS settings reflecting the costs of carbon, together with increasing interest and expectations from consumers, will provide strong incentives for businesses to transition to more efficient and sustainable energy over time.

16. Contact supports the concept of Energy Transition plans in principle. However we are unclear that this initiative is necessary in light of the significant amount of public reporting that is already undertaken. MBIE estimate that 200 businesses would fall within the scope of the proposed target group who spend in excess of $2m per year on purchased energy. If the government did progress mandatory Corporate Energy Transition Plans, significant work will be required to ensure that the information proposed does not duplicate information

that large businesses already publish for other purposes such as sustainability reporting in annual reports.

17. As the discussion document notes, the government is making changes to make the NZ-ETS18 more transparent, and MfE are proposing the introduction of a mandatory reporting (comply-or-explain) disclosure regime for NZX listed issuers, banks, general insurers, asset managers and asset owners.

18. The cost to implement the scheme is likely to be significant, and it is essential that Corporate Energy Transition Plans are not simply another regulatory impost that increase compliance costs without the commensurate benefits of accelerating energy migration.

Q 1.2	Develop an electrification package for businesses looking to electrify process heat, and offer EECA's business partners co-funded low-emission heating feasibility studies.

19. Contact supports the proposal for the government to develop an electrification information package, and provide customized low-emission heating feasibility studies. This will reduce information barriers for businesses, and is consistent with EECA's strategic purpose to mobilise New Zealand businesses to be world leaders in clean and clever energy use.

Developing markets for bioenergy and direct geothermal use

20. Contact Energy is New Zealand's largest geothermal operator, and we are focused on developing adjacent opportunities through our geothermal generation to support the direct use of geothermal heat. As a member of the New Zealand Geothermal Association, we have worked closely in the development of the Geoheat strategy, and opportunities to diversify the direct use of geothermal heat to create new businesses, support regional economic development using New Zealand's geothermal assets.

21. Contact aims to establish long-term partnerships with energy-intensive customers in the Taupō area, in order to supply them with renewable, geothermal heat direct to their site. This is part of our commitment to support businesses to reduce their emissions as we transition towards a net zero carbon New Zealand.

22. Contact Energy has worked with wood industry customers who operate near our Wairakei geothermal plant in Taupō. Contact has worked with Tenon since 2007, supplying direct geothermal heat for their manufacturing operations and kiln drying timber.

23. In 2019, Contact partnered with Nature's Flame to produce a carbon neutral wood pellet fuel alternative to coal. Wood fibre from sawmill operations in the central North Island is dried, resized and then compacted to form a durable, low moisture, low ash, energy dense fuel which burns efficiently and cleanly.

24. Direct geothermal heat energy will help Nature's Flame to increase their production and revenues. Nature's Flame currently operates at 45% capacity and have had to burn some of their own product to provide the heat needed for wood drying. The conversion to geothermal energy will allow Nature's Flame to operate at full capacity - creating new jobs in Taupō and alleviating the need to burn their own product as part of their production process. The extra capacity has also enabled Nature's Flame to enter the Korean and Japanese markets, where the pellets will be used to provide a sustainable alternative to burning fossil fuels. Contact has also enabled Nature's Flame to increase its productivity with no additional CO2 emissions released, as well as displacing particulate matter emissions from the use of the existing biomass boiler.

25. Nature's Flame is the latest to join Contact's cluster of geothermal direct use customers which also includes the Huka Prawn Park aquaculture and tourism business, the Rogue Bore brewery, Wairakei Resort Hotel, Wairakei Terraces geothermal bathing experience, as well as Tenon Sawmill.

26. Contact is continuing to explore further commercial opportunities to further leverage our geothermal resources.

Opportunities for the government to further support direct geothermal use

Q 2.9	In your view, how can government best support direct use of geothermal heat? What other options are worth considering?

27. While Contact will continue to explore commercial partnerships, there are ways that the government can further support geothermal direct use:

    i. Investigate ways of reducing costs associated with transporting raw materials and finished products to and from Taupo;
    ii. expand the NPS REG to cover renewable energy use, or create a new NPS promoting renewable energy use;
    iii. clarify electricity regulations about directly connecting industry to geothermal power stations for electricity and if this reduces system costs; the transmission savings can be used to entice industries to make the switch to geothermal energy;
    iv. provide funding for the NZ Geothermal Association Geoheat activities, including a Business Development Lead to promote geothermal opportunities to international investors ;
    v. increase central government advocacy role in promoting / facilitating geothermal direct use; and
    vi. provide funding for feasibility studies.

28. The locations where geothermal energy is available in New Zealand are also areas where freshwater is fully allocated, such as the Waikato catchment and the Bay of Plenty. This can be a barrier to industries using geothermal energy which also require water such as the dairy industry. To address this, Contact recommends that Regional Council water allocation plans prioritise water use associated with renewable energy use.

Phasing out fossil fuels in process heat

29. Contact Energy recognizes the significant decarbonisation opportunity of phasing out fossil fuels in existing process heat. Contact is focused on working with our customers to explore commercial opportunities to decarbonise process heat across New Zealand.

30. In February 2020, Open Country Dairy, New Zealand's largest independent manufacturer of dairy ingredients, announced that it would install NZ's largest (13 MW) electric boiler in New Zealand at its Awarua, Southland plant later this year. Contact partnered with Open Country to supply electricity and innovation through our demand flexibility platform.

31. Compared with an equivalent coal-fired boiler, the electric boiler will reduce Open Country's demand for energy by 6.7 GWh a year and reduce emissions by 5.12 million kilograms.

32. With an ethos of "*taking the right path over the easy path*", Open Country was determined to avoid coal, and investigated a range of options before deciding to install an electric boiler. A key part of Contact's involvement was establishing how to make a large amount of electricity economically viable, providing long term price certainty, and continuing to collaborate to introduce technologies that create further efficiencies to managing power usage, especially around peak consumption times.

Option 4.1	Introducing a ban on new coal-fired boilers for low and medium temperature requirements

33. Contact supports the proposal to ban new fossil fuel fired boilers for low and medium temperature requirements. An exemption process may be necessary where a case can be made that fossil fuels are the only viable option.

34. Ideally the ETS would deliver the same outcome without the need for a government intervention. The ETS is likely to be the most efficient means to abate carbon as it uses price to drive consumer choices and investment decisions. However, we also recognise that current ETS settings may be insufficent.

35. The recent proposal to increase the ETS fixed price option has removed some of this uncertainty but it is insufficient in the near term to lead to a large drop in emissions. If investors had certainty that ETS prices would rise to a level that would render future coal-fired boilers uneconomic, then the introduction of such a ban would be redundant.

36. While policy certainty around the outlook for ETS prices is the "first-best" option, Contact accepts that there is always likely to be a measure of uncertainty. There are a range of trade-offs that governments need to balance – meeting international climate change commitments, distributional impacts, concerns around carbon leakage, and the absence of viable alternatives in some sectors.

37. In order to avoid future investment in long-lived coal-fired assets with a high emissions footprint and where commercially viable low-emissions alternatives currently exist, Contact agrees that the introduction of a ban on new coal-fired boilers for low and medium temperature requirements is appropriate. It is unclear to Contact why this ban should be limited to only one source of fossil fuel. We consider it should ultimately apply to all fossil fuels.

38. There is a risk this option could result in the perverse outcome of prolonging the life of existing coal-fired boilers as they seek to delay the capital costs of moving to a new source of process heat. For this option to be effective, it would need to be combined with a strong price signal through the ETS and a requirement to phase down existing co-fired process heat supply end-use requirements below 100^0C (Option 4.2).

39. We also recognise that there may be a limited number of locations and situations where coal fired boilers will remain the only option, or the best environmental outcome. If an exemption process was necessary, new fossil fuel fired boilers should be made a Non Complying Activity under the Resource Management Act, where consent would be possible, but strong grounds for such an exception would be required.

Option 4.2	Require existing coal-fired process heat equipment supplying end-use temperature requirements below 100˚c to be phased out by 2030.

40. Contact agrees with this option. However, the full implications of this proposal are unclear and therefore we recommend a flexible approach to its implementation. From our own experience with commercial and industrial customers, it can take considerable time to convert from coal to electricity. For example, connecting to transmission and distribution networks to electrify their processes can take considerable time.

41. A complete phase-out by 2030 is an ambitious target. There is a risk that there is insufficient resource capacity for the transition if existing coal-fired, or fossil-fuel fired, boiler users continue to run their existing boilers as long as possible. There is also risk that electricity network companies are not prepared for such an outcome, and that there are resulting capacity constraints on the network.

42. Timeframes that reflect planning requirements and lead-times should dictate the rate of phase out.

43. There are also separate issues around transmission and distribution pricing that will need to be resolved for market participants to be able to assess the relative economics of biomass and electricity as appropriate alternatives.

44. As with Option 4.1, it is unclear why this proposed option is specific to coal and silent on gas. As the proposal stands, industry could invest into gas-fired boilers, rather than biogas or electricity, and reduce the potential environmental benefits from the switchover. We recommend that MBIE assess whether gas for low-temperature process heat requirements should similarly be phased out.

Enabling Renewables uptake under the Resource Management Act 1991

45. There is a significant opportunity to ensure that resource management protections better support the development of renewable energy across New Zealand, as recognized in the Productivity Commission's *Low Emissions Economy* report. Contact is engaged in the comprehensive review of the RMA, the essential freshwater package, and the proposed National Policy Statement for Indigenous Biodiversity.

46. It is well understood that New Zealand needs to build a significant amount of new renewable generation to meet future electricity demand and to accelerate the economy-wide transition away from fossil fuels. Of equal importance is the need to maintain and enhance the output and capacity of the country's existing portfolio of renewable generation during re-consenting and other RMA planning processes. The RMA stands in a position to encourage or constrain these outcomes because virtually all existing and new electricity generation is affected by and requires approval under it.

47. The difficulty is that the RMA, through the list of considerations in Part 2 of the Act and the growing suite of National Policy Statements, requires Councils to weigh up a very large number of competing, sometimes inconsistent considerations when making decisions about renewable energy activities. For instance, tradeoffs are needed between existing hydro generation and competing freshwater allocation and water quality demands, and between potential geothermal or wind farm developments affecting areas of indigenous biodiversity. At a consenting level, the Council must reconcile many national and lower order plan and policy directions with the tangible local environmental impacts of renewable energy generation on people and the environment.

48. The National Policy Statement for Renewable Energy Generation 2011 (NPS REG) was intended to provide firm direction to Councils about how to prioritise the national benefits of renewable electricity generation and greenhouse gas reduction. However, Contact has not observed useful benefits in cost reductions, activity status, certainty, RMA workload, and speed of decision-making arising from it.

49. Part of the challenge is that the language of the NPS REG is too passive to be effective when weighed up against obvious local environmental effects or newer and more directive instruments such as the NPS on Fresh Water and draft NPS on Indigenous Biodiversity. Section 7 of the Act itself, "Other Matters", only requires Councils to 'have particular regard' to the benefits of renewable energy, amongst other matters. As a result the weight and urgency intended to be given to increasing renewable energy has been submerged.

50. Contact believes that the most effective way to help apply the correct balance is to change Part 2 of the Act to include the use and development of renewable energy as a "Matter of National Importance" in section 6. This would require it to be 'recognised and provided for', a much stronger direction than section 7, and one which would cover consenting decisions, as well as plans and policy statements. The government has an opportunity to achieve this through the Resource Management Act Review process that has recently commenced.

51. At the same time, the NPS REG should be amended and strengthened along the lines described in the Productivity Commission's Report and the 2016 MfE and MBIE paper, *Report on the Outcome of the NPSREG*. There is useful background information and submissions that provide constructive ideas about how this could be done. However, the first step is for the government to acknowledge those issues and begin a process to review, revise and consult upon it. It is also important to make sure that the various Freshwater, Indigenous Biodiversity and other National Policies are properly integrated and taken into account at the same time to ensure consistency and balance across the board.

52. Another weakness of the NPSREG is in relation to water allocation. The NPS REG 'does not apply to the allocation and prioritisation of freshwater'. This materially undermines its effectiveness for hydro schemes. Without reasonably firm, long term rights to take and use water, the benefits of hydro schemes are subject to ongoing risk of diminishment. In our experience, the decision by Councils to balance the allocation of water (and geothermal) resources between REG activities and competing uses is normally the most important consenting issue for hydro and geothermal REGs. The competing demands and claims to these resources are intensifying, and ongoing access to water and geothermal energy is a significant long term risk for Contact. We recommend that the NPS is amended to directly address this issue and provide much clearer positive guidance.

53. One area where an amended NPS REG could have a significant impact is how existing REG activities (hydro, geothermal and wind in particular) are treated during the reconsenting process. The RMA must explicitly recognise the strategic importance of New Zealand's existing dam and geothermal power station portfolio, their sunk costs, their ongoing reliance on access to hydro and geothermal 'fuel', and the reality that sometimes significant and irreversible historic environmental effects have already occurred through their development. We recommend that there is a presumption that new consents for the same or similar REG activity will be granted, unless there are very compelling environmental reasons not to. For reconsenting, the focus should shift from 'whether' to 'how' the output and capacity of these activities can be increased while encouraging improved environmental outcomes, including through mitigation, offset and compensation pathways. This is tantamount to a 'controlled' activity status.

54. The idea of "standardis[ing] the process for reconsenting and repowering (upgrading) existing renewable energy generation facilities" is considered in the consultation, but in the context of a potential National Environmental Standard. This approach could have a significant positive impact in terms of certainty, cost, and security of renewables and could be achieved in the context of the NPS REG review. We urge the government to consider it as part of that package.

55. Contact is less confident about the ability of National Environmental Standards or National Planning Standards to make a big difference. We agree that for the time being amendments to the NPS REG should be prioritised. This is due to the highly variable, almost unique and stand-alone nature of nationally significant renewable energy developments. Wind farms, geothermal power stations, and hydro schemes have very little in common from an RMA effects perspective. Their particular environmental effects and resource needs are also highly location and project specific. It is difficult to see how an effective nationally

consistent framework for new hydro and geothermal renewables (such as 'pre-approvals' discussed on page 65) can be achieved without undermining important project-specific RMA checks and balances. For wind farms, this approach might be more appropriate.

Proposal 7.1	Amend the National Policy Statement for Renewable Electricity Generation, including potential expansion of its scope to cover a broad range of renewable energy activities.

56. Contact supports expanding the scope of the NPS REG to cover a range of renewable energy activities. This may assist with, for example, further geothermal direct use projects.

57. However as discussed above, we are concerned about the wider effectiveness of the National Policy Statement framework under the RMA, which will require further work to increase the effectiveness in facilitating further renewable electricity generation.

Supporting renewable electricity generation investment

58. Contact is strongly supportive of helping decarbonize the New Zealand economy through the electrification of the process heat and transportation sectors. We do not see any specific need for government intervention to support renewable electricity generation as renewable generation options are already the lowest cost form of electricity and the market is responding accordingly. Recent announcements to committed, or under active consideration, new renewable electricity generation include:

- Mercury's Turitea wind farm, with a capacity of 222 MW and projected production of 840 GWh per year;
- Tilt Renewables 133 MW Waipipi wind farm, projected to produce 490 GWh annually;
- Top Energy's 32 MW Ngawha geothermal development;
- Genesis Energy's "advanced talks" to build a 300 MW solar farm in the northern Waikato that would produce 550 GWh annually; and
- Mainpower commencing pre-construction site works for a 93 MW wind farm at Mt Cass.

Option 8.1	Introduce a Power Purchase Agreement (PPA) Platform

59. This option seeks to accelerate investment in renewable electricity generation by matching additional supply to new sources of demand from process heat electrification.

60. The discussion document argues that the volatility of wholesale spot electricity prices creates risks and inhibits investment both on the demand side (spot prices are too high (on average) to justify an investment to change processes, and on the supply side (no certainty that high spot prices will be sustained into the future). PPAs are a way to de-risk investment projects for investors on both the demand-side and the supply-side.

61. We question the premise that wholesale electricity price volatility is causing a constraint to investment in renewable electricity generation. As noted in the introduction to this section, there have been several very significant renewable electricity generation projects committed to or in advanced consideration.

62. We also note that hedging risk between buyers and sellers is a key feature of the market. . A recent example of a PPA helping to de-risk a renewable electricity generation development is the 20 year PPA signed between Genesis and Tilt Renewables in May 2019 to build the 133-MW Waipipi wind park in South Taranaki, formerly known as the Waverley project. Parties that fail to hedge are likely taking on too much risk and/or seeking to free ride on the hedging activity of others.

63. Contact considers that as hedge products, of which PPAs are one, are already such a key feature of the market there is no need for government intervention in this area.

64. In order to help de-risk projects, having a longer term view of forward electricity prices would be helpful. This could be achieved by adding more years to the ASX futures price.

Option 8.2	Encourage greater demand-side participation to develop the demand response market

65. Demand side response is the best way to meet forecast peak demand growth resulting from decarbonisation. It is cheaper, cleaner and faster than traditional gas fired peakers. Contact believes the further development of demand response markets will be important part of a sustainable, resilient and cost-effective energy sector for consumers.

66. Contact has had experience over the past few years working with a wide range of customers on demand response. In our view the key features of demand response markets include:

- **Standardisation**. Contact has focused on the reserves and Transpower demand response markets because they are national, well developed markets which include a defined process and technology/systems for managing the offer, dispatch and verification process, and a well-developed contractual framework. Standardisation reduces participation costs and barriers to entry, and will enable more DR providers to develop and compete.

- **Open Access**. Markets should be developed to enable customers or their agents/aggregators to freely participate, like the reserves and Transpower demand response markets. As an example, distribution networks utilising regulated capex to develop large and small scale storage to solve network peak demand issues is a missed opportunity to develop competitive markets.

  Similarly, where distribution networks contract demand response, we support an approach like Transpower where "MW" are contracted, which enables all customers and technologies to compete freely, rather than participation being restricted to, for example, ripple controlled hot water. This approach will ensure that customers and markets are responsible for which technologies come to the forefront, rather than distributors picking technologies on behalf of customers.

  Careful thought also needs to be given to the current approach which allows regulated assets like hot water ripple control to participate in other non-distribution competitive markets (including both the reserves market and the Transpower demand response program), which distorts market outcomes.

- **Maximise value of demand response**. The aggregator/optimiser role (using demand response to participate in multiple markets) must not be able to be provided by a network. If a gentailer or independent aggregator contracts for control of a customer device, and does a poor job monetising that device and rewarding the customer, the customer can switch to another provider. If a network contracts for control of a customer device and makes demand response payments (or lower network charges) conditional on the customer handing over control of the device to the network (the

approach with hot water ripple control), and the network does a poor job monetising the device for a customer (again using ripple control as an example, by not participating in the reserves market, or participating but keeping all the proceeds for the network), the customer has no ability to switch demand response provider/aggregator without losing the network value stream.

- **Locational**. Demand response markets should focus on areas where the network/grid needs genuine support. An approach like Transpower's demand response programme enables this, as demand response can be contracted where needed. Controlled load tariffs are generally network-wide, resulting in a reduction in network charges for many consumers in areas where there is no network benefit, which flows through to higher distribution charges for other consumers.

67. In our view the biggest demand response value opportunity for New Zealand is in the distribution sector and clarifying the property rights associated with interruptible load. Whilst there have been a number of RFP processes (for example, Aurora's Upper Clutha RFP), in general distribution demand markets are not developing. MBIE's discussion paper discusses the concept of a centralised distribution system operator (DSO), and in line with our comments above with regards to standardisation, we support this concept being evaluated. There is also considerable complexity in managing the interface between a Transmission System Operator (TSO) and the DSO, and in a market of New Zealand's size a combined TSO-DSO may warrant evaluation as well.

Option 8.3	Deploy energy efficiency resources via retailer/distributor obligations

68. This option would place an obligation on electricity retailers and/or distributors to deploy energy-efficient technologies across their customer and/or asset base. For instance, a retailer might provide low-cost insulation for consumers to reduce winter demand.

69. The Electricity Pricing Review highlighted that there is no single policy intervention to address energy hardship, and the different recommendations recognized that the causes of energy hardship are complex, and achieving meaningful change will require leadership and action from government, regulators and the industry.

70. The option proposed in this paper would aim to accelerate the replacement of inefficient products with new products that may go beyond existing Minimum Energy Performance Standards. It would also assist consumers with the higher upfront cost of efficient equipment where it costs less than energy supply or defers infrastructure investment.

71. Contact recognizes the importance of energy efficiency and actively support our customers through education and advice. However we do not support placing obligations on retailers for the following reasons:

- Retailers and distributors do not typically have the expertise to advise customers on the optimal energy efficiency intervention.

- EECA is the right vehicle for this information. It is more appropriate for the government to take responsibility for initiatives of this nature, rather than passing on the risks and costs to market participants. The government can do this transparently through the budget process by providing additional grants to EECA or it could impose more stringent building standards so that efficiency is locked in from the outset.

72. Contact and the industry will continue to play a central role in education. In 2019, Electricity Retailers Association (ERANZ) together with lines companies, community organisations and the government ran a pilot EnergyMate programme to support vulnerable families. EnergyMate is a free in-home coaching service helping families at highest risk of energy hardship to reduce electricity costs and live in a warmer home.

73. EnergyMate coaches works with people in hardship to help cut bills and increase warmth by ensuring the best electricity plan, heating their home in the cheapest way possible, provide simple tips to make their home more energy efficient, and connecting them with other services such as insulation or budgeting support. This programme is continuing in 2020.

Option 8.5	Renewable electricity certificates and portfolio standards (not under active consideration)

74. This proposal would require retailers and/or large electricity users to procure a given quota of renewable electricity, with the quota increasing annually to drive investment in new renewable projects.

75. Contact strongly agrees with the risks of this proposal identified in the discussion document and does not support this proposal. These risks include:

- significant set up costs, as well as ongoing administrative and compliance costs for government and market participants.
- the risk of government crowding out existing businesses that provide certification services.
- negative interactions between renewable certificates and the ETS if the quota is set too low or too high.

76. Contact does not believe that further measures aimed at increasing the proportion of renewable electricity generation are necessary where the market is already delivering increasing levels of renewable generation. In our view, the priority of government should be focused on initiatives designed to decarbonise other sectors of the economy, with process heat and transport being the primary targets. This is consistent with findings from the Interim Climate Change Committee and the Productivity Commission.

Option 8.6	Phase down baseload thermal generation and place a strategic reserve

77. This option would see the creation of a strategic reserve mechanism for all baseload thermal generation. This reserve would be ring-fenced and only used in emergencies where there is a risk of energy shortages. The strategic reserve would be decommissioned when more renewable generation is constructed, with a transition period of five years cited as an example.

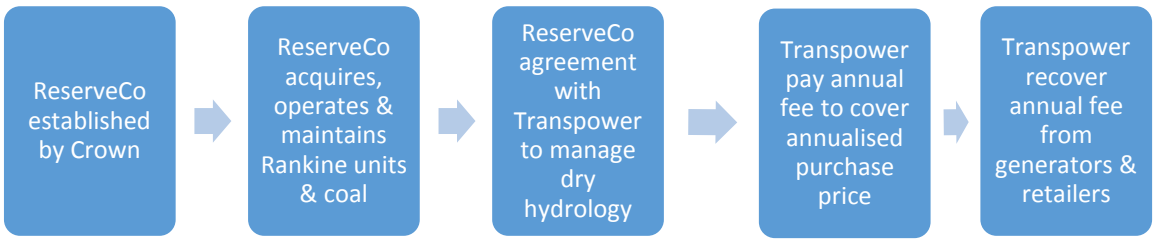
78. Contact acknowledges the issue raised in the discussion document but considers there is a better way to achieve the desired outcome. We do not think that either Taranaki Combined Cycle or E3P should be part of any strategic reserve in the medium term as current market demand requires the ongoing operation of each, while increasing cost pressures and the development of new generation will inevitably see the closure and/or phase down of operations of both in the short-medium term.

79. The biggest outstanding issue for the industry is how to manage the dry year risk. Today, the Huntly Rankine units are the cheapest and most reliable way to provide security of supply for this dry year risk but the Rankines are uneconomic during normal market conditions. At present, operating and maintenance costs are underwritten by two long-term swaption deals between Genesis and two of the country's largest generators. Both of these swaption deals have a common end date of 31 December 2022. The rest of the market essentially free rides on the back of these swaption deals and the security of supply that they provide. This is not sustainable.

80. If the Huntly Rankine units were to be decommissioned at the end of 2022, security of supply would be potentially compromised and the market would be forced to invest in a more expensive alternative (e.g. a large scale pumped hydro scheme such as Lake Onslow).

81. We set out below is an alternative proposal to address New Zealand's dry-year risk.

ReserveCo Concept



82. The government would establish a Crown entity "ReserveCo" which would be responsible of managing New Zealand's dry year risk.

- ReserveCo would purchase the three Rankine units and coal stockpile from Genesis Energy.
- ReserveCo would have an agreement with Transpower to manage dry hydrological conditions.
- ReserveCo would be responsible for the ongoing operation and maintenance of these units and the supply of fuel. It is assumed that the primary source of fuel will be coal.

- Transpower would pay ReserveCo an annual fee covering the fixed operating costs and the annualised purchase price.

- Transpower would recover this annual fee from all generators and retailers as a dry year levy, similar to the previous Whirinaki reserve energy scheme.

83. The scheme would be reviewed after [5] years to assess whether it remains a necessary part of the generational supply chain to ensure security of supply during dry hydrological periods.

Market process

- The Rankine units would only be offered into the market when [National/South Island] storage falls below the 10% Hydro Risk Curve.

- The offer price would be $[XXXX]/MWh.

- Any spot market revenue over and above the short run marginal cost would be used to offset the annual fee.

Benefits

84. The scheme would offer significant benefits over the status quo:

- **Carbon**: Emissions would reduce as coal would not be used during normal market conditions.

- **Security of supply**: this would remain unchanged and the scheme would create time to evaluate longer term solutions.

- **Cost allocation**: The cost of providing dry year reserves would be spread evenly across all parties without any "free-riding".

85. An alternative to our ReserveCo model suggested above would be for Transpower to periodically run a contestable auction to procure energy reserves. In the short term and based on current market conditions, it is likely that the outcome would be the same – with the Huntly Rankine units providing ReserveCo capacity. In the longer term as further renewable generation becomes available, this may move to gas-fired generation sitting within the ReserveCo.

Connecting to the national grid

86. Contact does not see any particular issues with new generation connecting to the grid but we agree with MBIE in the characterisation of constraints to demand-side connections. Of particular concern, is the inability of Transpower to oversize grid connections in the expectation of future electricity demand arising through the decarbonisation of other sectors of the economy.

Option 10.1	Encourage Transpower to include the economic benefits of climate change mitigation in applications for Commerce Commission approval of projects expected to cost over $20m. This would be through the inclusion of the (avoided) emissions price cost incurred by consumers calculated on a consistent basis. Guidance or direction about the emissions price and trajectory would be needed to support this option.

87. At present, grid investment tests for major capital projects include a range of quantified and unquantified benefits. Avoided emissions costs that are internal to the electricity market are typically unquantified. This option would see the quantification of these costs, as well as the avoided emissions costs of consequential emissions reductions elsewhere.

88. The effectiveness of this option will depend on the extent to which MBIE's EDGS's scenarios assume the electrification of other sectors (e.g. process heat and transport). Transpower is required to use MBIE's EDGS scenarios as part of its grid investment test. To the extent that the EDGS scenarios include assumptions around the electrification of other sectors, then the quantification of these avoided emissions costs would lift the benefits in a grid investment test. In principle, Contact supports this option but we are unclear as to how material it will be in practice. We suspect that in most cases it will have a marginal impact on the overall net benefits of a particular project.

89. We would welcome guidance on the emissions price and trajectory but are unclear whether the emissions price envisaged in this instance is the forward ETS price or the effective cost of carbon abatement when the range of complementary measures discussed in this discussion document are included.

90. In addition to the above, Contact considers that a more effective way to accelerate decarbonisation is to lower the default discount rate of 7%[1] for major capital expenditure projects. The Treasury uses a default discount rate for water and energy projects of 6%[2], while the weighted average cost of capital that applies to Transpower's independent price path from 1 April 2020 is 4.57%.

91. Contact considers that in the case of Transpower, which is a 100% State-owned natural monopoly, a strong case could be made to use a discount rate of 3% which reflects the

[1] Section D6(3)(a) of Transpower's Capital Expenditure Input Methodology Determination: https://comcom.govt.nz/__data/assets/pdf_file/0026/88280/Transpower-capital-expenditure-input-methodology-determination-consolidated-29-January-2020.pdf.
[2] https://treasury.govt.nz/information-and-services/state-sector-leadership/guidance/financial-reporting-policies-and-guidance/discount-rates.

government's social rate of time preference.[3] The premium derived from the inflated major capex discount rate amounts to a supernormal profit to Transpower for those projects that proceed or, conversely, may prevent some major investment projects that would otherwise pass the grid investment test.

Option 10.2	Puts in place additional mechanisms to support or encourage Transpower, first movers and subsequent customers to agree to alternative forms of cost sharing arrangements by contract.

92. Contact does not consider the first mover disadvantage to be material for new generation investments but we acknowledge that it may become an issue for demand-side connections. There is no way of oversizing the initial investment and subsequently socialising the costs of this investment.

93. We support an option that would require customers that subsequently connect to a contracted asset to contribute to the funding of that asset through a new levy, with a rebate paid to the first mover.

Option 10.3	Shift some of the cost and risk allocation for new and upgraded connections from the first mover through mechanisms within the Commerce Commission's regulatory scope, with the Crown accepting some of the financial risk.

94. We agree with the discussion document that for demand-side grid connections the existing arrangements may lead to suboptimal transmission investments and disincentivise investment in higher capacity connections by the initial developer.

95. There is merit in exploring further the option of providing Transpower with the ability to build larger capacity connection assets or a configuration that allows for growth, but only recover costs once the asset is fully utilised, with the Crown covering the risk of revenue shortfall.

96. Also, please refer to our responses to Options 10.1 and 10.2 with regard to the default discount rate that applies to major transmission investments.

Option 10.4	Provide independent geospatial data on potential generation and electrification sites (e.g wind speeds for sites, information on relative economics and feasibility of investment locations given available transmission capacity)

97. This option seeks to provide a further level of granularity to existing disclosures. It is unclear what the benefits of the provision further information will be. We note that a similar option was previously undertaken by EECA over a decade ago – the Regional Renewable Energy Assessments. The initiative was costly, and it is not clear that the data was used by market participants.

[3] Consistent with how the government assesses alternative field development options in section 8.3(3) of the Petroleum Programme: https://www.nzpam.govt.nz/assets/Uploads/our-industry/rules-regulations/petroleum-programme-2013.pdf.

98. We believe that this should be left to market participants as this is where the investment risks reside.

99. A key reason market participants do not use government produced data of this nature is that it is essential for any development to get independent verification. At a minimum, this option results in a duplication of resources and costs. It can also cause unnecessary concern (or raise false expectations for some landowners) in communities where areas identified by government as having high wind development potential are unlikely to be built.

Option 10.5	Extend the data and information provided in MBIE's EDGS and increase the frequency of publication, and potentially recover the cost through the existing levy on electricity industry participants.

100. Contact supports extending the data and information provided in EDGS. However we do not agree with recovering the cost through the existing levy on electricity industry participants. Funding for EDGS should continue to be funded through budget appropriation, specifically the Vote Business, Science and Innovation fund appropriated for Energy and Resources: Information Services. MBIE must have sufficient budget to ensure that the quality, quantity and timeliness of output is high.

Option 10.6	Produce a user's guide on the current regulations and approval processes relating to getting an upgraded or new connection to the grid

101. Contact sees considerable merit in this option and fully supports it. This information would be particularly useful for the industry, and large customers evaluating options to migrate process heat from coal and gas to electricity, for example.

Option 10.7	Provide a database of potential renewable generation and demand sources, location and potential size (e.g. wind, geothermal, milk plant

102. Contact sees limited benefits in extending the Electricity Authority's database of proposed new generation to include potential new sources of demand, and potentially available capacity on the national grid. This option would be costly to develop with the results unlikely to be used by market participants. The market is constantly changing – the location of demand is changing as well as the shape of demand. New types of businesses are starting to enter the market.

103. Market participants have strong incentives to gather, assess, and respond to this type of information and are best placed to manage the uncertainty and maximise the opportunities in this area. Any attempt to provide a granular centralised source of future electricity demand is likely to be challenging, and inherently inaccurate.

Option 10.8	Introduce measures to enable coordination with regard to the placement of wind farms to ensure they are more likely to be better distributed around the country.

104. It is unclear from the discussion document what exactly is being proposed. Contact does not support options that would impinge a generator's ability to choose its optimal development site.

105. There are reasons why it may be optimal to co-locate wind, even if it results in a large amount of correlated generation in one region. This happens when the other factors driving plant location have more value than the 'diversity' benefit of distributed wind farms. Developers have strong incentives to manage all the plant siting factors, not just wind generation spatial diversity.

106. Developers are currently investigating wind options from Southland to Northland. Contact does not consider there is a problem that requires government intervention at this time.