Budget 2022 Initiative Summary – Main Budget Process

Electricity market measures to support the transition to a highly renewable electricity system

Section 1: Overview

Section 1A: Basic Initiative Information

Lead Minister	Minister of Energy and Resources					
Department	MBIE					
What type of initiative is this?	Critical cost pressure initiative		Manifesto commitment initiative		Health and Disability System Reform initiative	
	Climate Emergency Response Fund initiative	***X***	Savings initiative		Non-Spending initiative	
Initiative description [max 800 Characters]	This initiative will develop and implement electricity market measures that support reliable and affordable electricity supply while accelerating the transition to a highly or fully renewable electricity system. It also includes funding to facilitate public sector procurement of renewable electricity via long term power purchase agreements. Confidential advice to Government					
Is this a Cross-Vote initiative?	**Y/N**	N				
Department contact	Privacy of natural persons					
Treasury contact	Privacy of natural					

Section 1B: Total Funding Sought

Operating funding sought ($m)	2021/22	2022/23	2023/24	2024/25	2025/26 & outyears	Total
Total		Confidential advice to Government				

Capital funding sought ($m)	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	Total
Capital costs	-	Confidential advice to Government									

Section 1C: Initiative Classifications

Is this initiative seeking funding from the Climate Emergency Response Fund (CERF)?	***Y***	• The initiative will be included in the Emissions Reduction Plan • The initiative's primary objective is to support and accelerate emissions reductions
Is this initiative climate-related, but not seeking funding from the CERF?	***N***	Initiative is seeking funding from the CERF
Does this initiative align with the Crown's obligations under the Treaty of Waitangi?	***Y***	The funding sought will enable MBIE to uphold Treaty obligations and involve iwi/Māori as we electricity market measures are developed and implemented.

Specify if this initiative will help reduce child poverty and describe the impact	***N***								
Does this initiative align with the Child and Youth Wellbeing Strategy?	***N***								
Does the initiative include funding to procure from NGOs?	***N***								
Does the initiative include funding to support digital and data related investments?	***N***								
Is this a regulatory or legislative initiative (according to the guidance provided)?	***Y***	The initiative addresses a significant risk in the electricity regulatory system, while still supporting a rapid transition, and may result in the government considering a new regulatory approach to ensuring reliable supply in the transition to a highly renewable electricity system.							
	Some electricity market measures developed via this initiative could require changes to legislation governing the electricity industry. New regulatory measures could impose obligations and/or cost recovery on electricity industry participants, and potentially the gas sector.								
	Cabinet policy approval will be sought for any measures developed via this initiative.								
Is this a significant investment initiative per the definition at section 4.8 of the Budget 2022 guidance?	***N***								
		Data / Digital / ICT		Physical Infrastructure		Organisational Transformation		Specialised Equipment	

Section 3: Value

Section 3A: Opportunity/Problem

Opportunity/Problem

Problem: uncertain rate of renewable generation development

The Emissions Trading Scheme is expected to reduce fossil fuelled generation over time, especially when the unit operating cost of coal and gas fuelled generation plant (inclusive of emissions costs) exceeds the levelized capital and operating unit cost of new renewable generation. However, the rate at which new renewable generation will displace fossil fuelled generation is uncertain and may be slower than the Government's desired rate of transition to a fully renewable system. Confidential advice to Government

Problem: risk of disorderly transition

Investment in new renewable generation at a rate exceeding the rate of demand growth will displace existing fossil fuelled generation and reduce associated emissions. Under existing market arrangements, a reduction in generation from fossil fuelled plant will generally result in reduced revenues ultimately triggering plant closure when revenues are no longer sufficient to cover fixed and variable operating costs. There is also an ever-present risk of prolonged plant failure of some aging fossil fuelled plant, and/or unexpected loss of gas supply capacity as occurred in 2020 and 2021.

Any sudden closure of fossil fuelled plant or unforeseen reduction in gas production capacity could significantly elevate the risk of electricity shortage, especially in a period of low hydro inflows ('dry year') and increase wholesale electricity prices. This could also result in greater utilisation of coal-fired plant, which perversely could increase emissions. This scenario has already played out in 2020-21 and could easily repeat.

Therefore, unless supported by carefully designed market measures, accelerated investment in renewable generation risks reducing electricity reliability, increasing prices and increasing emissions – at least until low-cost sources of flexible electricity supply are developed, such as large scale pumped hydro generation and other options under investigation in the NZ Battery Project.

Opportunities

Electricity market measures may be warranted to ensure transition risks are well-managed, without compromising a timely transition to a highly or fully renewable electricity system. In particular, measures may be needed to incentivise:

- investment in renewable generation to more quickly displace fossil fuelled generation (thereby reducing emissions), and
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A specific opportunity to accelerate new renewable generation investment is to support public sector entities to procure electricity via long term power purchase agreements (PPAs) with renewable generation developers. Such renewable PPAs are increasingly common in other jurisdictions and some NZ-based corporates are currently exploring them.

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Section 3B: He Ara Waiora

Tikanga- decisions are made by the right decision-makers, following a tikanga process, according to tikanga values

The funding sought will enable MBIE to uphold Treaty obligations and involve iwi/Māori as we develop and implement electricity market measures to enable an affordable transition. The funding aims to ensure that iwi/Māori interests are comprehensively captured and addressed as measures are assessed and implemented.

The initiative will progress alongside and aligned with the development of an energy strategy, in collaboration with relevant government agencies and in consultation with electricity system stakeholders. It will also be closely aligned with options and any decisions made in the NZ Battery project. Confidential advice to Government

Manaakitanga- focus on improved wellbeing and

As we transition to a highly or fully renewable electricity system it will be important to ensure:

enhanced mana for iwi and Māori, and for other affected communities and groups, demonstrating an ethic of care and mutual respect	• electricity is accessible and affordable to support the wellbeing of all New Zealanders; • electricity supply is secure, resilient, and reliable; and • electricity supply supports economic development aspirations and an equitable transition. There will be a range of interests, priorities and aspirations for iwi/Māori, including but not limited to: • tino rangatiratanga over Māori land and other resources used for renewable generation; • the impact of renewable energy generation on natural resources; • economic and investment opportunities for Māori, and skilled employment opportunities; and • the impact of transition on iwi/Māori and communities as electricity consumers, i.e. energy hardship, iwi community resilience/self-sufficiency. There may be potential conflicts for Māori in working across this range of interests. We recognise that there is no one Māori worldview and perspectives may be different for each iwi, hapū, marae and whānau.

Section 3C: Outputs – The good or service the initiative purchases

Output	Description
Detailed design of preferred electricity market measures (for Cabinet approval, subject to RIA and CIPA)	The first phase will complete the detailed design of a package of electricity market measures for Cabinet decisions following consultation on high level options Confidential Specific measures are yet to be developed and assessed, but they could include one or more of the following indicative options (non-exhaustive): • Confidential advice to Government • [redacted] • [redacted] • [redacted]
Implementation of agreed electricity market measures (subject to Cabinet decisions)	The second phase potentially includes the development of enabling legislation, [redacted], necessary for implementation of the agreed package of measures. This phase is contingent on any Cabinet decisions to implement market measures. Confidential advice to Government
Public sector procurement of electricity from new renewable generation via long term renewable PPAs	A project manager and technical expert would be engaged to develop, promote, and facilitate the procurement of one or more renewable PPAs by one or more public sector agencies. Any PPAs procured would support investment in new renewable projects and would offset the cost of electricity purchased by the buyers. The project would initially focus on public sector entities not required to comply with the All-of-Government mandate for electricity procurement but would work with MBIE's NZ Government Procurement branch to explore opportunities for alignment.
Confidential advice to	Confidential advice to Government [redacted]

Section 3D: Impacts – The direct effect of the initiative

1. Stronger incentives for renewable electricity generation developers to bring forward (accelerate) new investment

2. Support revenues for at least some existing fossil fuelled generation operators to ensure transitional maintenance of adequate firm generation capacity and gas supply

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4. Build capacity and capability for public sector entities to procure electricity via long term PPAs with new renewable generation developers

Description of the impacts	All of the intended impacts are expected to increase the likelihood of achieving a highly or fully renewable electricity system in an acceptable timeframe and in a manner that preserves reliable and affordable electricity supply during the transition. (The Government has an aspirational goal to have a fully renewable electricity system by 2030 – to be reviewed before the end of the first emissions budget period.) In short, the intended impacts will promote environmental, social and economic wellbeing for all New Zealanders. Confidential advice to Government Any measures implemented under this initiative could also have negative impacts, although they would be designed to minimise such impacts. Potential negative impacts include undermining electricity industry investor confidence, increasing government administration costs, increasing regulatory compliance costs for industry, procuring too much generation capacity Confidential advice – any and all of which could raise costs for electricity consumers, reduce choice, or reduce reliability.
Quantification	Impacts have not been quantified, but for illustrative purpose: • Annual electricity generation emissions averaged circa 4 megatonnes CO_2-e during the last five years • Renewable electricity generation in 2020 comprised circa 81% of the total • Moving from 80% to 90% renewable electricity generation could reduce annual emissions by circa 2 megatonnes. • a 5% increase in the average wholesale price of electricity ($100/MWh) could represent an increased annual cost to all consumers (40 TWh per year) of circa $200 million. C
Supporting Evidence	Electricity system scenario modelling undertaken by the Climate Change Commission, Interim Climate Change Commission, MBIE, BEC and Transpower all point to the expectation that some fossil fuelled generation capacity and fuel supply must remain available during the transition to a highly renewable system in order to provide affordable firming of intermittent generation (wind and solar) and to ensure supply security in a dry year. However these scenarios do not fully consider the revenues or other incentives required by fossil fuelled generators to maintain their operating availability.
Gaps in Evidence	A key uncertainty is the period of time over which the transition to a highly or fully renewable electricity will occur, because: • Fossil fuelled generation cannot be fully retired until there is an affordable alternative to provide the same dry year reliability and other flexible supply (e.g. large scale pumped hydro scheme or similar) • Too much or too rapid investment in new renewable generation capacity risks depressing wholesale electricity prices (especially in wet years) cannibalising the market revenues of all generation plant, which may chill further market-based generation investment (including refurbishment or expansion of existing renewables).
Assumptions	It is assumed that rising carbon prices under the ETS will make fossil fuelled generation increasingly uneconomic and will incentivise its progressive displacement by new renewable generation (but not fully within the next decade). It is assumed the initiative will provide for an accelerated, but more predictable and orderly, displacement of fossil fuel generation by intermittent renewable generation (compared to the counterfactual).
Implications	The uncertainties and assumptions above will be thoroughly evaluated during the development of preferred electricity market measures, including through public consultation. The development of preferred market measures will need to consider options and any decisions from the NZ Battery Project, given the implications for the timeframe over which a transition to a highly or fully renewable system may occur.

Section 3E: Goals – What this initiative aims to achieve		
Ensuring affordable and reliable electricity supply during the transition to a highly renewable electricity system	**Description**	The goal is ensuring reliable and affordable electricity supply during the transition to a highly or fully renewable electricity system
	Quantification	The aspirational goal is 100 per cent renewable electricity by 2030
	Timeframes	Confidential advice to Government
	Evidence and Assumptions	Refer impacts in section 3D
	Implications	The first phase will include a regulatory impact assessment and climate change impact assessment of options before a preferred option is submitted to Cabinet.

Section 3F: Distributional Analysis							
Question 1: Does the initiative have the following types of distributional impacts for Māori?	A	Direct		Indirect		No Impact	***X***
	B	Targeted and tailored for Māori		Disproportionate positive impact		Other *(explain)*	
Question 2: Does the initiative have the following types of distributional impacts for Pacific Peoples?	A	Direct		Indirect		No Impact	***X***
	B	Targeted and tailored for Pacific Peoples		Disproportionate positive impact		Other *(explain)*	
Question 3: Does the initiative have the following types of distributional impacts for children?	A	Direct		Indirect		No Impact	***X***
	B	Targeted and tailored for children		Disproportionate positive impact		Other *(explain)*	
Question 4: Does the initiative have direct impacts on any other population groups?	N						
Question 5: What region is this initiative expected to impact?	*X*	*All of New Zealand*	Confidential advice to Government				
	Confidential advice to Government						

Section 4: Alignment

Section 4A: Strategic Alignment	
How does this initiative link with your strategic intentions/statement of intent?	Enabling affordable, reliable and renewable electricity supply is well aligned with two of MBIE's focus areas: • Transition Pathways - Reset the post-COVID-19 economy towards a high value, high employment and low emission society • Regulatory Stewardship - Deliver a robust, agile and fair regulatory environment, that supports New Zealand's economic recovery
Does this initiative link with other sectoral or whole-of-government strategies (e.g. the Pacific Wellbeing Outcomes Frameworks)?	The initiative will align with the Government's Emissions Reduction Plan.
Does this initiative impact other agencies directly or indirectly? If so, how?	The initiative is expected to affect the Electricity Authority's statutory functions relating to regulation of the electricity industry. Its statutory objective is to promote competition in, reliable supply by, and the efficient operation of, the New Zealand electricity industry for the long-term benefit of consumers. The Electricity Authority may need to design, implement, monitor or enforce some or all market measures resulting from this initiative. Maintaining strong competition in the generation market will be a key consideration.

Section 4B: Alignment to Government's goals

The Government's goals for this term are:

1) Continuing to keep New Zealand safe from COVID-19

2) Accelerating the recovery and rebuild from the impacts of COIVD-19

3) Laying the foundations for the future, including addressing key issues such as our climate change response, housing affordability and child poverty

Alignment to Government goals	This initiative aligns with Government's goal for this term to lay foundations for future climate change response, because reliable, affordable and low emissions electricity supply is critical to achieving net zero emissions by 2050.

Section 4C: Contribution to the Government's Wellbeing Objectives

The Government's five wellbeing Objectives are:

- **Just Transition:** supporting the transition to a climate-resilient, sustainable, and low-emissions economy.
- **Future of Work:** enabling all New Zealanders and New Zealand businesses to benefit from new technologies and lift productivity and wages through innovation
- **Physical and Mental Wellbeing:** supporting improved health outcomes for all New Zealanders, including protecting New Zealanders from the impacts of COVID-19.
- **Māori and Pacific:** lifting Māori and Pacific incomes, skills, and opportunities, including through access to affordable, safe, and stable housing
- **Child Wellbeing:** reducing child poverty and improving child wellbeing, including through access to affordable, safe, and stable housing.

Please note: these objectives have been agreed by Cabinet subject to wider consultation. The final versions of the objectives will be published in the Budget Policy Statement in December 2021.

Contribution to Wellbeing Objective(s)	The initiative contributes directly to a Just Transition, because reliable and affordable electricity supplied from renewable generation is critical for a resilient, sustainable, and low-emissions economy. The initiative will provide for an accelerated, but more predictable and orderly displacement of fossil fuel generation by intermittent renewable generation (compared to the counterfactual). Given the risks surrounding the transition to a highly renewable electricity system, electricity market measures may be warranted to ensure those transition risks are well-managed.

Section 5: Delivery

Section 5A: Fit with existing activity		
How does the initiative link with existing initiatives with similar objectives?	The initiative is closely linked to the NZ Battery Project, which is investigating the feasibility of different technology options (e.g. pumped hydro) to enable affordable and reliable electricity supply from a fully renewable electricity generation. By comparison, this initiative will develop and implement market measures to ensure affordable and reliable electricity supply while accelerating the transition to a fully renewable system. It will therefore complement the NZ Battery Project. The initiative is also closely linked to the Electricity Authority's statutory objective to promote competitive in, reliable supply by, and the efficient operation of, the electricity industry for the long term benefit of consumers.	
Is the initiative an expansion or a cost pressure for an existing initiative?	*N*	

Section 5B: Funding sought by input

Provide a breakdown of what the requested funding will purchase. Briefly explain the formula used, or key assumptions made, to calculate the cost of each output.

Formula and assumptions underlying costings

The proposed funding assumes:

- CFTEs employed by MBIE (project management and policy advisors, senior and principal level) for policy development Confidentia
- Consultant support for policy development and evaluation
- Consultant support for public sector PPA procurement
- Confidential advice to Government

	Funding profile ($m)					Total
Input – Operating	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26 & outyears**	**Number values only**
Input Information						
Confidential advice to						

Appropriations

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All other components of the initiative would increase the existing appropriation "Policy Advice and Related Services to Ministers - Energy and Resources" with effect from 1 July 2022

Section 5C: Options analysis

Options analysis	The main alternative is to undertake the initiative as BAU energy policy advice, noting that initial work is already underway as BAU by MBIE. However, BAU is not sustainable without significant reprioritisation within baselines, given the competing demands on energy policy advice to support development of the government's emissions reduction plan, national guidance for renewable electricity and industrial coal use in the resource management system, biofuels mandate, circular bioeconomy, energy efficiency regulatory system review, and oil security and fuel stockholding, among other things. Confidential advice to Government
Counter-factual question	If funding for this initiative is not approved, MBIE will endeavour to deliver the same outputs within existing baselines, which is likely to result in a longer time to achieve the outcomes. The risks from this approach include: 1. Deferral of material reductions in electricity emissions would make it harder for the Government to achieve its aspirational 100% renewable electricity target by 2030, future emissions budgets and the 2050 net zero target 2. Sudden closure of one or more gas-fuelled generation plant, and/or reduction in reliability or deliverability of gas to meet 'dry-year' electricity generation needs, could result in sustained high wholesale electricity prices (which may be passed on to retail consumers), increased coal-fired generation and associated emissions, and potential electricity supply interruptions. 3. Potential renewable generation developments could remain stalled in regions with insufficient network connection capacity 4. Public sector entities may not take up opportunities to reduce their electricity purchase costs and to support renewable electricity generation development and the decarbonisation of the economy

Section 5D: Scaled option

Option overview	A scaled option is to complete the policy development and implementation of electricity market measures, Confident

Provide a breakdown of what the minimum viable option would purchase. If the formula used or key assumptions made differ from those used for the primary option, briefly explain these.

Formula and Assumptions	Same assumptions as primary initiative					
	Operating Funding profile ($m)					
Input - Operating	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26 & outyears**	**Total**
Total	Confidential advice to Government					

	Capital Funding profile ($m)										
Input - Capital	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**Total**
Total	Confidential advice to Government										
Appropriations	Same as primary initiative, Confidential advice to Government										

Section 5E: Monitoring and Evaluation

The primary outputs are policy deliverables, for which MBIE has existing performance measures. Any market measures agreed and implemented as a result of this initiative will be monitored and evaluated by MBIE and the Electricity Authority, as part of BAU functions and are not expected to require additional funding.

MBIE routinely monitors and reports quarterly on electricity system performance in terms of renewable and non-renewable generation capacity and output, emissions, and average prices. The Electricity Authority and Transpower routinely monitor and report on a wide range of electricity industry performance metrics relating to competition and reliability, including planned investment in generation and transmission capacity. Depending on the specific measures implemented as a result of this initiative, MBIE and/or the Electricity Authority will be able to monitor and report on new generation investment and plant closures, and their implications for meeting the goals of this initiative.

Electricity emissions trends will be monitored, evaluated and reported on as part of emissions budget period reporting and periodic review of the emissions reduction plan under the Climate Change Response Act.

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Section 5F: Implementation readiness

The answer to each question must not exceed 1-2 paragraphs.

Workforce: Are additional FTEs or contractors required?	**Y**	Policy analysts, project managers, electricity market advisors, legal advisors
	Required skill set is available although in demand. Additional contractors may be required if suitable staff cannot be recruited.	
Workforce: Resourcing considerations		
Timeframes	All elements of the initiative are expected to be completed by end of FY 23/24. Confidential advice to Government	
Delivery Risks	There are interdependencies with other pieces of work, including the NZ Battery project, which will need to be managed to ensure timely delivery. This can be achieved through careful liaison with the policy team responsible for that project.	
Market capacity	We think that there is enough policy expertise in New Zealand to deliver this initiative. We have factored in specialist skills through consultancy costs, where we think there will be a market constraint.	
Previous delivery experience	MBIE has delivered similar policy projects, including major electricity market reviews in 2018/19 and 2009/10. Standard project management and governance structures and processes will be used, as for similar policy projects.	

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