Budget 2022 Initiative Summary – Main Budget Process

Funding further decarbonisation of industry and heat and implementing supporting policies

Section 1: Overview

Section 1A: Basic Initiative Information

Lead Minister	Minister of Energy and Resources					
Department	Ministry of Business, Innovation and Employment					
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	This initiative provides funding to reduce business energy emissions and resource the implementation of new supporting measures. With this funding, businesses will improve energy productivity, bring forward fuel-switching projects, and reduce exposure to carbon price risk. This represents an attractive investment for government in domestic emission reductions and accelerates action to meet climate targets. It will increase the Government Investment in Decarbonising Industry Fund, and provide funding for smaller businesses, commercial heating decarbonisation, and energy efficient equipment. It will also resource the implementation of an energy and emissions reporting scheme, national direction on industrial emissions and a plan for decarbonising industry.					
Is this a Cross-Vote initiative?	***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
		88.575	157.823	207.563	224.026	**677.986**

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
		0.570									**0.570**

Note: $349.987m amount in outyears to 28/29 due to Component A funding extending to 28/29. Note Component A funding is time limited. Total funding sought to 28/29 is $1008m.

Section 1C: Initiative Classifications

Is this initiative seeking funding from the Climate Emergency Response Fund (CERF)?	***Y***	This initiative meets criteria 1-3. It is estimated to reduce emissions by Constitutional .
Is this initiative climate-related, but not seeking funding from the CERF?	***N***	
Does this initiative align with the Crown's	***Strong***	Confidential advice to Government

obligations under the Treaty of Waitangi?		
Specify if this initiative will help reduce child poverty and describe the impact	***No impact***	This initiative supports intergenerational equity and wellbeing by taking significant and direct action to decarbonise the economy.
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?	***Y***	Funding is sought for a data portal to manage information submitted from entities under the Energy End-use and Emissions Reporting Scheme (Component B).
Is this a regulatory or legislative initiative (according to the guidance provided)?	***Y***	Confidential advice to Government
	Implementing a mandatory energy end-use and GHG emissions reporting scheme for large energy users will benefit all departments that have regulatory stewardship or delivery roles for large energy users by enabling Government to have more information about energy use and emissions trends. This will inform evidence-based policy making, monitoring progress towards emissions reduction targets, and the development of future measures for emissions budgets 2 and 3.	
	Confidential advice to Government The required change is to introduce a mandatory energy end-use and GHG emissions reporting scheme for large energy users.	
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

Reducing business emissions from process heat and equipment use is essential to meet the Government's goal of a net zero carbon economy by 2050. In addition, there is strong public interest to minimise the purchase of international offsets by incentivising domestic action.

While the emissions trading scheme (ETS) will drive decarbonisation in the long-term, current carbon prices do not incentivise decarbonisation in alignment with the emissions budgets. Inaction on emissions reductions can be compounded by businesses having competing capital priorities or poor information on their options. Complementary measures are needed to address barriers and to create a tipping point for immediate action to bring forward emissions savings in line with the emissions budgets.

Progressing this initiative will reduce emissions by Constitutional It will also reduce the uncertainty considerably that New Zealand will meet BP1 should it eventuate that the impact of existing policy measures is at the lower end of the estimated range.[1]

This initiative reduces barriers and accelerates decarbonisation efforts in two areas:

1. Process heat is the most promising short term abatement opportunity in the energy sector (excluding transport). Process heat accounts for about 9% of total emissions and 27% of energy-related emissions.
2. Industrial energy intensity is also high relative to the technical and economic potential. There are commercially available energy technologies that can significantly improve industrial energy efficiency, but the rate of adoption is slow due a range of barriers. Accelerating replacement of old technologies with newer, efficient technologies will reduce electricity baseload and peak demand, thereby reducing emissions from electricity generation, freeing up renewable electricity to support electrification, and lowering system-wide costs.

Section 3B: He Ara Waiora

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

The funding we are seeking will enable us to uphold our Treaty obligations and involve iwi/Māori as we both scope and develop the plan of actions for decarbonising industry. Confidential advice to Government Ensuring a holistic approach to the decarbonisation of the energy system will be central to upholding tikanga, and ultimately benefiting iwi/Māori.

Manaakitanga- focus on improved wellbeing and enhanced mana for iwi and Māori, and for other affected communities and groups, demonstrating an ethic of care and mutual respect

As we decarbonise industry and heat, it will be important to ensure:

- Energy is accessible and affordable to support wellbeing of New Zealanders;
- Energy supply is secure, resilient, and reliable; and
- Energy systems support economic development aspirations and an equitable transition.

This initiative is seeking funding to enable Māori participation and partnership across a range of perspectives. Adequate resourcing will be required to ensure that a meaningful partnership approach is taken.

There will be a range of interests, priorities and aspirations for iwi/Māori in the energy and industry sectors, including but not limited to:

- tino rangatiratanga over Māori land, Māori-owned forests, energy resources and other resources;
- the impact of energy generation on natural resources;

Constitutional conventions

	• economic and investment opportunities for Māori and Māori businesses, and skilled employment opportunities; • the impact of transition on iwi/Māori communities, energy users and businesses. For example, there are many Māori workers in the meat industry, owners of Māori geothermal assets, and Māori forestry owners and workers that are or have the potential to be suppliers of bioenergy. We acknowledge that there may be potential conflicts for Māori in working across this range of interests. We also recognise that there is no one Māori worldview and perspectives may be different for each iwi, hapū, marae and whanau.
Section 3C: Outputs – The good or service the initiative purchases	
Outputs (Component A) – government to industry funding to reduce energy emissions	**Description** Component A.1 addresses in part the Climate Change Commission recommendation 21.3 "Accelerating industry switching to low-emissions fuels for process heat and uptake of energy efficiency measures…. A high NZ ETS price signal is central to delivering this, along ***with policies that reduce barriers related to access to capital, behaviour change and infrastructure access***"
A.1 Extension and expansion of the Government Investment in Decarbonising Industry (GIDI) fund	Scale up and evolution of the existing GIDI fund, with some key design changes to better support the Government's climate change objectives, ERP, optimised and equtible transition, and complement the RMA national direction on industrial GHG emissions. The new GIDI fund will be more flexible with different types of funding rounds to reach market segments and achieve system-wide benefits. This will include: • **Nationally-available contestable funding**: Funding individual, high impact decarbonisation projects with adapted criteria to fund larger and longer projects. This is the current model but government expects to use this less over time as funding is prioritised towards system-wide, strategic and synergistic opportunities, as outlined below. • **Regional energy transition planning and investment**: Targeted funding at a regional level, to fund projects that optimise low emission fuel use in a particular region. The purpose is to develop plans and investment strategies for decarbonising businesses at a regional level, taking into account the opportunities and barriers specific to the area (such as type of fuel supply, grid requirements and current energy use). The need for this has been identified through EECA's business programme planning, direct engagement with large energy users, and EECA commissioned research such as the Mafic report. Government will work with regional stakeholders including biomass suppliers and electricity sector participants to identify optimal energy and decarbonisation solutions for the region. EECA currently has funding to pilot the RETP's in 1-2 regions, and the additional funding sought would be to complete plans for the remaining regions. The intention is then that EECA can also systematically co-fund a pipeline projects based on the RETPs through future GIDI rounds, in addition to the current individualised funding rounds. Regional plans will inform opportunities to aggregate demand for renewable fuels and technologies and improve the efficiency and cost effectiveness of infrastructure investments across multiple parties. • **Electricity infrastructure upgrades that electrify heat**: the expanded GIDI will ringfence funding for electricity transmission and distribution infrastructure upgrades that unlock and/or accelerate fuel-switching for multiple fossil fuel heat users. This would provide a cost-sharing mechanism, in combination with any other measures that are introduced to overcome the 'first mover' disadvantage for transmission or distribution investment affecting electrification of heat load.[2] • **Technology diffusion**: supporting early adopters to procure commercially available, under-utilised energy technologies with high decarbonisation and replication potential that are significantly more expensive than other equivalent incumbent technologies. At scale, accelerated adoption of new low-emissions technologies can reduce costs for later adopters. • **Hard-to-abate industries**: Agencies will work collaboratively to identify opportunities for GIDI funding to support targeted hard-to-abate sectors, based on MBIE's strategy to decarbonise these sectors.

Confidential advice to Government

A.2 Commercial heating decarbonisation	A grant scheme for commercial buildings to replace fossil fuel boilers for space/water heating with low-emission alternatives (primarily electricity/heat pumps). This funding will be an incentive to support early action in preparation of the Government's Building for Climate Change work programme. Confidential advice to Government early adopters will generate replicable examples and learnings, building industry capability and capacity prior to regulation, as well as bringing forward emissions savings gains. Component A.2 addresses in part the Climate Change Commission recommendation 22, "Upgrading existing buildings and constructing new buildings that are low emissions".
A.3 Energy efficient equipment grant scheme	Funding for rebates for all businesses, including smaller businesses, farms and factories. Businesses procuring and installing approved high efficiency electrical equipment used for industrial processes specified by EECA, including specifically electric motors and electric heat pumps, will be able to claim a rebate. Note heat energy use is excluded as this covered by other components of the bid (GIDI and commercial heating). This would accelerate the uptake of energy efficient equipment, and encourage installation and use of the highest efficiency equipment, rather than the default replacement option, or minimum compliant specification. Component A.3 addresses in part the Climate Change Commission's report recommendation 20 (2), 'Scaling up investment in energy efficiency to reduce the amount of energy produced and improve energy affordability'
Outputs (Component B) – energy and emissions reporting scheme implementation	**Description** Component B would require large energy users to report their energy use and greenhouse gas emissions to government and the public. The scheme will provide information to businesses, the Government and the public to monitor energy sector progress towards emissions targets. The information could be used to develop opportunities for emissions reductions, and to design meaningful and evidence-based policy interventions for ongoing emissions reductions.
Data function within MBIE	Confidential advice to Government
Confidential advice to	
Output (Component C) – implementation of supporting policies	**Description** Component C addresses remaining aspects of the Climate Change Commission recommendation 21 notably outlining a plan of active for decarbonising industry Confidential advice to a collaboration approach with industrial stakeholders.
Implementation of National Direction on GHG emissions	• National Direction policy implementation (2022-2024) and review (2025-2026) • Government funding contribution to support and develop the professional pipeline of Suitably Qualified Persons to support the implementation of National Direction on GHG emissions
Plan of actions for decarbonising industry	Scoping and development of a plan of actions to decarbonise industry. In its final advice, the Commission recommended that the Government outline a plan for actions required to decarbonise the industrial sector (recommendation 21). The ERP discussion document sought feedback on the next steps for drawing work programmes together, and whether there were any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider that have not been covered. Information from submissions will be considered in more detail to determine the best approach for drawing together work programmes relating to industrial decarbonisation and what further work is required. Confidential advice to Government

	• Confidential advice to Government
A timetable for phase out of fossil fuel boilers	The ERP discussion document notes that the Government will consider setting a timetable for fossil fuel boilers once the first ERP is in place. The scope includes all commercial and industrial boilers. This could be included in the plan for decarbonising industry but is a discrete piece of policy work (and could proceed without it). Confident
A monitoring framework with indicators to track progress aligned with ERP indicators and governance and monitoring arrangements	There is currently no overall monitoring framework on industrial decarbonisation policies and measures. In order to track progress on the ERP and in meeting emissions budgets, government will need to develop such a framework, and establish an effective suite of indicators, to feed into cross-agency governance and monitoring arrangements. This framework would be established in 2022, and would be operational within the first BP. Confidenti

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

Direct Emissions Reductions from fuel switching for industrial and commercial process heat, and from reduced demand for thermal electricity generation	**Description of the impact**	Direct emission reductions will arise from Component A through: • Industrial process heat fuel switching and energy efficiency projects supported by the GIDI • fuel switching of heating equipment (primarily gas to electricity) in commercial buildings, supported by commercial heating decarbonisation programme. • Electricity efficiency projects that reduce fossil energy demand on the electricity grid These will result in a distribution of emissions reductions across businesses and sectors which will target both large energy users and smaller organisations (non-large energy users). The sector support will focus on mobilising sectors that can contribute large emission reductions, and the regional approach will target some rounds of funding to achieving what each specific region collectively agrees is an optimal system outcome.
	Quantification	Lifetime emissions reductions of 64.58Mt. See attached CBA and CIPA. Emissions reductions by Budget periods: • Constitutional
	Supporting Evidence	The primary data and information inputs are: • EECA's publicly available Energy End Use Database, which provides economy-wide data on energy use, and project-level data gained from EECA's programmes (particularly the GIDI Fund). • Input data is also used from EECA's TIMES-NZ energy systems model (also publicly available). • Through current engagements with businesses and energy service providers, EECA is capturing information about future emission reduction opportunities and fuel switching intentions. Using previous data from funded projects and other assumptions, EECA has estimated direct emission reductions from potential budget funding. • Experience with previous GIDI projects. GIDI has completed two rounds of funding allocation, with the third currently being assessed (and remaining funding over-subscribed by $18.5m). Across the first two rounds of GIDI, the Government committed over $56m worth of funding to 39 decarbonisation projects. This has been matched by $85m in applicant funding. These two rounds will deliver lifetime emissions reductions of 6.6 million tonnes.

		• The Mafic study noted that businesses reported that the ETS was not sufficient to drive low emissions investment.
	Gaps in Evidence	Estimating accurately the various drivers of low emission investment can be challenging as these vary from firm to firm and are a result of external/market factors, corporate responsibility goals and targets, internal return on investment criteria, access to capital and the extent to which businesses factor in climate risk and the long-term price of carbon in investment decisions. In general smaller organisations are likely to have less capability to adopt low emission technology and have less incentive as energy cost is a smaller proportion of overall operating cost, even when factoring in ETS costs. Larger industrial process heat users are more responsive, but are likely to wait until long-lived equipment is deteriorating and for higher emissions prices. Many large firms also face capital constraints or prioritise investment towards core business and production expansion.
	Assumptions	The net present value is calculated using The Treasury's shadow carbon prices (the central price path). Assumed intervention life varies based on the type of equipment being installed and varies from 10 years to 20 years. Emissions reductions will start in the year following actual expenditure. Emissions factors for electricity are drawn from CCC final advice, Current policy reference scenario. See attached CIPA for a table of electricity emissions factors by year between 2022 and 2050. There is ongoing work among agencies to better quantify the emission reductions from changes in demand in electricity use. The estimates assume emissions reduction impact is additional to reductions attributable to ETS, as each component aims to help businesses overcome nonprice barriers / address abatement potential not sensitive to rising ETS prices. In reality, there may be potential overlaps with the ETS and regulatory interventions such as the RMA national Direction. However, these are likely to be modest in BP1 because: • Of known non-price barriers: A 2021 Mafic report commissioned by EECA summarised these barriers as: access to capital; electricity and biomass supply challenges; lack of industry-wide collaboration; low carbon process heat alternatives viewed as uneconomic; technical challenges. (See the link to the report in Supporting Evidence section below) • ETS prices out to 2025 (and beyond) may still not be high enough to accelerate investments in industrial process heat • the ETS is expected to still be a weak signal for smaller organisations until after 2030 • national direction regulation will have incremental site-by-site effect as soon as it is in place, and a material effect only after 2030 • of programme additionality criteria. For example, GIDI project assessments discount emission savings from future years where it is expected that this investment would occur as a result of higher ETS prices, national direction and/or equipment end-of-life.
	Implications	Capacity of the sector to scope and deliver projects is important. Projects require specific technical and manufacturing expertise that is limited in the market, so projects need to be strategically staggered. Phasing of the GIDI funding over a number of years will be important to space out projects so there is enough capacity in the sector for them to be scoped and delivered. There are different approaches to estimating the emission reductions attributable to reductions in demand of electricity. At some point the remaining fossil generation in the system (other than cogen) will mainly be firming hydro and intermittent renewables, and this residual firming role for fossil fuels will eventually be displaced by alternative flexibility sources. The implication is that it is not clear of the extent to which a marginal change in demand will affect the timing of this, and therefore the emissions impact (and over what time period) of marginal increases or decreases of future electricity demand.
Impact 2 **Reducing financial and informational barriers for**	**Description of the impact**	Component A provides both financial and informational support to businesses, including smaller organisations, to help overcome barriers to decarbonisation, and transition to low emissions and energy efficient technologies. The key barriers to business decarbonisation are current or competing capital costs, lack of capacity and capability to implement complex projects, and lack of information (such as on optimal fuel choice or technologies available). Addressing these barriers would enable accelerated decarbonisation of industry and business.

business decarbonisation		Component A addresses these barriers by: • Providing direct capital for projects through co-funding • Providing decarbonisation plans for sectors / regions, to give certainty on options and the future ability to decarbonise, and to support more efficient and equitable socialisation of costs for electricity infrastructure upgrades among multiple stakeholders • Giving robust, actionable information on the most suitable technologies for businesses' energy needs
	Quantification	**High** Based on experience with the GIDI fund and stakeholder feedback received to date. Pre-existing EECA information business support programmes provide a package of external expertise, information which complement capital funding and address all major barriers to addressable emissions.
	Supporting Evidence	EECA recently commissioned a report to see why the ETS alone was not motivating businesses to decarbonise, analyse the other barriers identified and recommend potential solutions which focused on industry barriers to decarbonisation, which highlights some of the key financial and informational barriers this bid is looking to solve. This report can be found here: https://www.eeca.govt.nz/insights/eeca-insights/accelerating-the-decarbonisation-of-process-heat/ This builds on the 2018 report EECA commissioned from PwC into business decision-making and barriers to investing in energy efficiency: https://www.eeca.govt.nz/insights/eeca-insights/pwc-large-process-heat-users-and-energy-efficiency-in-new-zealand/
	Gaps in Evidence	*N/A*
	Assumptions	*N/A*
	Implications	*N/A*
Impact 3 Optimised energy use	**Description of the impact**	The Regional Energy Transition Plans will ensure investments in clean energy supply and infrastructure are allocated toward their highest value or "best use". Experience in administering GIDI has shown that while applications are assessed individually, businesses' fuel switching intentions are affected by anticipated fuel switching of geographically proximate businesses. Investments will be more efficient and lower the cost of fuel switching among multiple users when taking a regional strategic approach This will be achieved through collaboration and coordination with Electricity Distribution Businesses. Enabling other users to access the electricity network and reduce overall network expansion costs, supporting broader electrification. Component A.3 will reduced electricity demand, lessening the challenge of managing dry year security by reducing the rate of drawdown on stored hydro resources.
	Quantification	In terms of grid impacts, at fully funded levels, the GIDI component of the bid results in an increase in electricity demand of 3343 GWh per year. The efficient equipment component offsets this with a reduction in demand of 3,355 GWh, which provides confidence that the level of electrification proposed in the GIDI component is achievable. Conversely, without an integrated approach to optimisation, the energy transition is likely to be slower and more expensive as the best options may be unavailable.
	Supporting Evidence	2019 Energy Efficiency First report: https://www.eeca.govt.nz/assets/EECA-Resources/Research-papers-guides/EECA-Energy-Efficiency-First-Overview.pdf
	Gaps in Evidence	As for Impact 1
	Assumptions	As for Impact 1
	Implications	As for Impact 1
Impact 4 Improved energy efficiency and modernised practices	**Description of the impact**	Improved energy efficiency and modernised practices will be achieved through increased uptake of low emissions and efficient technology and equipment. Increasing energy productivity would improve the competitiveness of NZ manufactures and their exports by reducing the impact of higher energy costs, driven by rising ETS costs or the increased energy costs of many low emission fuels.
	Quantification	

	A.1 GIDI	A.2 Heating in commercial building	A.3 Energy Efficiency	**Combined**
Net Present Value $m	2592.05	95.03	2617.45	**5304.52**
Benefit-cost ratio	2.0	3.4	9.8	**7.2**
MAC $/t CO_2-e	78.94	33.01	-894.39	**11.42**

See CBA Spreadsheet attached.

	Implications	*N/A*
Impact 5 **Improved data and evidence for policy and decision making in Budget periods 2 & 3**	**Description**	A key barrier to decarbonising industry, reducing energy emissions and achieving a just transition to a low emissions economy is the lack of accurate information available to the public, investors and the government on the emissions performance of firms and/or products. Lack of accurate data also limits an individual or business' ability to minimise their own environmental impact and the government's ability to develop, assess and meaningfully consult on appropriate policy responses to meet our climate change and economic targets. A mandatory energy and emissions reporting scheme will help to improve data and evidence for policy and decision making in Budget periods 2 & 3, and support better monitoring and tracking of emissions reductions. This goal relates to the Environment and Knowledge and Skills wellbeing domains
	Quantification	Confidential advice to Government
	Evidence and Assumptions	In June 2019, a cost benefit analysis was carried out for an energy and emissions reporting and auditing scheme by Sapere consulting. The greatest uncertainty in the cost benefit analysis was driven by assumptions around the indirect impact that reporting could have on investment in energy efficiency and renewable energy. The following assumptions of the future exacerbate this uncertainty: • Assumption that large energy users do not already record energy use. • Energy baselines and energy savings assumptions. • Energy and carbon cost increases over time. • Investment costs. Some of the evidence in the cost benefit analysis was based on experience from the implementation of a mandatory reporting scheme in the UK. The use of international data could increase error in the estimated costs used in the analysis, but New Zealand average salaries were applied in the calculation to reduce error. We are assuming large energy users that meet the threshold will self-identify as meeting the threshold.
	Implications	The assumption that large energy users will self-identify may risk the effectiveness of the scheme if a proportion of users do not self-identify, though this will be mitigated by education and compliance activities.

Section 3E: Goals – What this initiative aims to achieve

Goal 1 **Accelerate business decarbonisation to support the Government's emission reduction goals**	**Description**	One of the main goals of this initiative is to accelerate decarbonisation to support the Government's targets for emission reduction, by overcoming barriers that businesses face to doing so themselves. This would contribute to the future wealth of Aotearoa by improving the natural environment and physical capital. It relates directly to the Environment wellbeing domain, and also knowledge and skills for businesses.
	Quantification	Constitutional conventions

		• We also expect this initiative would contribute to enabling emissions reductions beyond 2035 for the residual gas users and the hard-to-abate heavy industrials.
	Timeframes	2022 to 2050
	Evidence and Assumptions	As above
	Implications	Labour market tightness in energy and industry expertise may require project and portfolio staging of projects.
Goal 2 **Energy use in New Zealand's businesses is optimised, reducing the cost of the transition and improving productivity**	**Description**	Optimising energy use helps to balance decarbonisation with other arms of the 'energy trilemma' – energy security and energy affordability. This approach will lower the overall cost of transition and maximise system-wide benefits. Components of this initiative that increase efficiency provide a shared benefit to other energy users, by reducing competition for any energy sources that have a limited supply, such as clean electricity or processed biomass. This has the effect of improving energy affordability for all, relative to the counterfactual.
	Quantification	In terms of grid impacts, at fully funded levels, the GIDI component of the bid results in an increase in electricity demand of 3343 GWh per year. The Efficient equipment component offsets this with a reduction in demand of 3,355 GWh, which enables confidence that the level of electrification proposed in the GIDI component is achievable. Conversely, without an integrated approach to optimisation, the energy transition is likely to be slower and more expensive as the best options may be unavailable.
	Timeframes	2022 to 2050
	Evidence and Assumptions	EECA (2019) Energy Efficiency First report: https://www.eeca.govt.nz/assets/EECA-Resources/Research-papers-guides/EECA-Energy-Efficiency-First-Overview.pdf
	Implications	As above
Goal 3 **Energy transition costs, and government support in decarbonisation are spread equitably and efficiently**	**Description**	Decarbonisation of businesses is of benefit for all of New Zealand. Some businesses may not be able to absorb all the costs of transition and smaller organisations need greater support in decarbonisation. However the GIDI funding to date has been targeted at larger energy users that tend to provide greater value for money. Funding is being expanded to allow greater access for smaller organisations that tend to have a greater need, and result in a more equitable distribution of decarbonisation costs. This goal relates to the environment wellbeing domain and the income and consumption domain. The activities proposed to be funded under this bid will employ skilled and highly skilled workers across many regions and sectors of the economy.
	Quantification	As outlined in the impact section
	Timeframes	2022 to 2050
	Evidence and Assumptions	2019 Energy Efficiency First report: https://www.eeca.govt.nz/assets/EECA-Resources/Research-papers-guides/EECA-Energy-Efficiency-First-Overview.pdf The funding has been staged over eight years to allow for clean energy services to achieve the economic/technical potential. Greater government support for relevant training and skills development could accelerate the capacity of the market to deliver the emission reduction projects in scope.
	Implications	Attracting relevant expertise, and focusing on training and skills to deliver emission reduction projects in scope will create employment and transition-aligned growth opportunities for an equitable transition.

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	Indirect positive impacts on regions undergoing significant fuel switching projects due to increased investment and demand for highly skilled jobs in those regions, such as Southland and Taranaki.					

Question 5: What region is this initiative expected to impact?	*X*	*All of New Zealand*		*Gisborne*		*Northland*		*Tasman*
		Areas outside regions		*Hawke's Bay*		*Offshore*		*Waikato*
		Auckland		*Manawatu-Whanganui*		*Otago*		*Wellington*
		Bay of Plenty		*Marlborough*		*Southland*		*West Coast*
		Canterbury		*Nelson*		*Taranaki*		

Section 4: Alignment

Section 4A: Strategic Alignment

How does this initiative link with your strategic intentions/statement of intent?	MBIE plays an important role in ensuring Aotearoa New Zealand's successful transition to a low-carbon economy while managing the impact on the future of work and workers. This initiative aligns with MBIE strategic intention, and specifically on the four collective focus areas to reset the post COVID-19 economy to a high value and low emissions society by supporting further decarbonisation of industry and heat. The energy and emissions reporting scheme (Component B) strongly aligns with MBIE's focus area of Regulatory Stewardship – delivering a robust, agile and fair regulatory environment that supports New Zealand's economic recovery. It also links to MBIE's five strategic outcomes, with the strongest links to: • Outcome Three: Informed consumers and businesses interacting with confidence, particularly work closely with businesses, including small to medium sized businesses, to ensure the challenges they face are considered in the development of regulation, and to deliver the tools and services they need to thrive. • Outcome Four: Value is sustainably derived from the natural environment. We are responsible for seeing the businesses and residents have access to secure, affordable and environmentally responsible energy.
Does this initiative link with other sectoral or whole-of-government strategies (e.g. the Pacific Wellbeing Outcomes Frameworks)?	It links to other proposed budget 22 initiatives – *Readying the Energy System to Transition to a Low Emission Economy*, and the *Bioeconomy Strategy* [initiative 13952 refers] and other government work priorities and programmes such as Just Transitions partnerships and regional economic development objectives delivered through Kanoa. It would play a key role in the Emissions Reduction Plan and would support the Economic Plan and the Industry Transformation Plans by improving the energy productivity of New Zealand businesses.
Does this initiative impact other agencies directly or indirectly? If so, how?	This initiative supports the climate change portfolio by helping New Zealand to reach its Nationally Determined Contribution and the net-zero target. This initiative will require working alongside MfE to measure progress aligned with ERP and emissions budgets indicators. EECA will be the primary delivery agency for Component A, Confidential advice to Government

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 contributes to the Government's goal of addressing the key issue of climate change response. Funding further decarbonisation of industry and heat and supporting policies will accelerate domestic carbon abatement and ensure the Government has sufficient data and resourcing to implement and monitor supporting/enabling emissions reduction policies. It would also support the second goal – accelerating the recovery and rebuild from the impacts of COVID-19 by supporting economic activity in business and industry. The existing GIDI fund has already contributed to this goal.

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)	This initiative aligns to the Just Transition wellbeing objective. Funding further decarbonisation of industry and heat and supporting policies will accelerate domestic carbon abatement and ensure the Government has sufficient data and resourcing to implement and monitor supporting/enabling emissions reduction policies. It also contributes to the Future of Work objectives by accelerating the adoption of modern and innovative technologies and increasing the absorptive capacity of businesses and energy service providers to further diffuse and deploy these technologies in other applications.

Section 5: Delivery

Section 5A: Fit with existing activity

How does the initiative link with existing initiatives with similar objectives?	The initiative expands on EECA's existing business programmes, which have some similar objectives relating to decarbonisation and overcoming informational barriers for businesses, specifically: • Government Investment to Decarbonise Industry Fund • Business energy programmes, including Energy Transition Accelerator, Technology Demonstration Fund, partnerships with large energy users, Sector Decarbonisation Roadmap pilot. EECA also administers labelling and standards currently for business equipment: • Equipment Energy Efficiency (E3) regulation programme, which includes regulation of industrial and commercial equipment. The regulations for Minimum Energy Performance Standards of equipment have a similar impact on new and replacement equipment but have no opportunity to bring forward replacement of in-situ equipment, much of which will likely remain in service for 10-20 years. It also complements some wider system settings – accelerating decarbonisation in addition to the effect of the Emissions Trading Scheme, contributing to the Emissions Reduction Plan, and complementing the phase out of fossil fuels in industrial processes through the RMA National Direction that is scheduled to come into force in April 2022.	
Is the initiative an expansion or a cost pressure for an existing initiative?	*Y*	The initiative expands the current GIDI fund.

Provide an overview of existing funding levels for this initiative, and/or initiatives with similar objectives, in the two tables below.

	Operating Funding profile ($m)					
	2021/22	**2022/23**	**2023/24**	**2024/25**	**2025/26 & outyears**	**Total**
Existing funding for this/similar initiatives (current GIDI + tech demo)	37.600	53.600	10.800	10.800	10.800	**123.600**
Total funding sought for this initiative (A.1 GIDI expansion)		19.875	68.625	124.875	150.825	**604.835**
% change between existing funding and funding sought		**-62%**	**535%**	**1056%**	**1296%**	**389%**
Comments (optional)	EECA currently has some funding for GIDI for 2021/22 that will all be committed in early 2022. Other funding for EECA's business programmes which have some overlapping objectives for decarbonisation is ongoing. Does not include M&E costs. Funding sought extends to 28/29 – total reflects total funding sought to 28/29. With the current GIDI funding, funding has been committed relatively rapidly but is paid out over time at project milestones. The same principle will apply, where we may commit to funding projects in 22/23, but the majority will be paid out (expended) in future years. Hence the amount sought and paid out in 22/23 from budget, compared to what will be being paid out from previously committed GIDI projects is low.					

	Capital Funding profile ($m)										
	21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**Total**
Existing funding for this/similar initiatives											
Total funding sought for this initiative		0.006									**0.006**
% change between existing funding and funding sought											
Comments (optional)	There is currently no capital funding allocated to GIDI										

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	Assumes MYA and funding EECA can expend rather than commit. Assumes funding spent over 3 years (with Y1 the year of commitment) based on the following; 25% of committed funding expended in same year as committed (Y1); 40% expended in the financial year immediately after year of commitment (Y2); 30% expended in second financial year after year of commitment (Y3). Assumes evaluation of Component B in 25/26 is a one-off, not outyears funding.

Input – Operating	**Funding profile ($m)**								**Total**
	2022/23	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30 & outyears**	
Total of all components	89.070	157.823	207.563	224.026	191.476	112.380	26.405		**1008.743**
Total to 2025/26				**677.986**					
Input Information									
Component A: Funding for further decarbonisation of heat and industry									
A.1 GIDI 2.0 grant funding	Confidential advice to Government								
A.1 Other opex									
A.2 Commercial heating grants/ rebates									
A.2 Other opex									
A.3 Energy efficiency equipment grants/ rebates									
A.3 Other opex									
Monitoring and evaluation									
Total Component A	**82.059**	**150.671**	**200.454**	**216.554**	**191.476**	**112.380**	**26.405**	**0.000**	**980.002**
Total to 2025/26 for Component A				**649.738**					

	Component B: Implementation of the Energy and Emissions Reporting Scheme					
Input – Operating	**Funding profile ($m)**					**Total**
	2021/22	**2022/23**	**2023/24**	**2024/25**	**2025/26 & outyears**	
Input Information						

Confidential advice						
Component B		0.201	0.253	0.257	0.592	**1.306**

Component C: Implementation of supporting policies						
	Funding profile ($m)					
Input – Operating	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26 & outyears**	**Total**
Input Information						
Confidential advice to						
Constitutional conventions						
Component C		**0.195**	**0.160**	**0.049**	**0.013**	**0.416**

FTE-specific Input Information (if applicable)						
Component A: Funding for further decarbonisation						
New FTE funding EECA	0	Con				
New FTE funding MBIE	0	Con				
Confidential advice to Government						
New FTE funding MBIE	0	Con				
Component C: Implementation of supporting policies						
New FTE funding MBIE	0	Con				
Total all components		**5.957**	**6.578**	**6.641**	**6.706**	**25.882**
# of FTE's EECA	0	C				Note EECA FTE
# of FTE's MBIE	0	Co				Confid in 28/29
What's the % increase in FTE compared to baseline FTE numbers						

	Funding profile ($m)										**Total**
Input – Capital	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	
Total		Con									Con

Appropriations	This bid will increase/extend the following appropriations • Energy and Resources: Information Services • Energy and Resources: Policy Advice and Related Services to Ministers - Energy and Resource • Energy and Resources: Accelerating Energy Efficiency and Fuel Switching in Industry 2020-2025 MYA expiring 2025 (and a new MYA for 2026 and beyond as below) • Energy and Resources: Energy Efficiency and Conservation

Section 5C: Options analysis

Options analysis	Reprioritisation within baselines is not a viable option for grant funding of this scale.

	Confidential advice to Government
Counter-factual question	Increasing ETS prices and national direction will go some way to drive low emission investments but these will happen more slowly, and the cost may be felt disproportionately on some sectors, in some instances with a loss of competitiveness. Non-price barriers will also not be overcome so even projects that are commercially viable with rising prices may not be taken up. Not progressing the funding and wrap-around services: • Is a lost opportunity to (a) to strengthen sector capacity and capability for decarbonisation projects and enable smaller and larger projects across a more diverse range of industries and regions to be supported. Confidential advice to Government . Not progressing Component B will exacerbate the information asymmetries and the restricted ability of government to monitor progress and adapt policy settings to meet budgets. Confidential advice to Government It isn't possible to reallocate funding from within Vote Energy and Resources to support these components given the pressures on the portfolio.

Section 5D: Scaled option

Option overview	Components B and C remain as above. For Component A: • A.1 GIDI: the funding amount would be scaled down to what we can deliver under the current GIDI model – this is grant funding for fuel switching for process heat decarbonisation without the strategic and smaller organisations elements to it as proposed in the preferred option. • A.2 Heating in commercial buildings: The preferred option is the minimum viable option. There is more economic potential to spend in this sector. Confidential advice to Government • A.3 Energy Efficient Equipment: The preferred option captures multiple types of equipment for use in industry and commercial sectors. The scaled option would be focused only on replacing inefficient motors which provides a large efficiency opportunity. The scaled option is concentrated mostly in the industrial sector, so commercial businesses would likely not benefit. This would require less funding and have less of an impact on emissions.

Provide a breakdown of what the minimum viable option would purchase.											
Formula and Assumptions	Only the EEE rebates are administered across six years to 27/28. The MVO includes Components B and C as above.										
Input - Operating	**Operating Funding profile ($m)**										**Total**
	2022/23	**2023/24**	**2024/25**	**2025/2026**	**2026/2027**	**2027/2028**	**2028/2029 & outyears**				
A1. GIDI 2.0	59.460	59.460	59.460	0.830	0.330						179.525
A.2 Commercial Space and water Heating	6.100	5.200	15.250	15.250	5.400						47.200
A.3 Energy Efficient Equipment	16.080	25.300	16.930	16.930	16.930	8.240					100.410
FTE Requirements											
A1. GIDI 2.0	Con										
A.2 Commercial Space and water Heating	Con										
A.3 Energy Efficient Equipment	Con										
Total A	**84.603**	**93.773**	**95.516**	**36.951**	**25.964**	**9.117**					**345.924**
Total B (as above)											**6.182**
Total C (as above)											**4.030**
Total opex	**86.351**	**106.313**	**97.900**	**29.781**	**25.964**	**9.117**					**356.181**
Totals to 2025/26 for all components				**320.345**							
Input - Capital	**Capital Funding profile ($m)**										**Total**
	21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	
Total		0.570									**0.570**
Appropriations	This bid will increase the following appropriations • Energy and Resources: Information Services • Energy and Resources: Accelerating Energy Efficiency and Fuel Switching in Industry 2020-2025 MYA • Energy and Resources: Energy Efficiency and Conservation										

Section 5E: Monitoring and Evaluation

EECA regularly reports on its programmes, for example quarterly reports to the Minister of Energy and Resources, and EECA's Board, and fortnightly reports on programme spending and project updates to the Minister. EECA has Monitoring and Evaluation plans for a number of its programmes, including the current GIDI fund which captures data from funded projects and will also include an overall evaluation of programme effectiveness. This can be built on and expanded to accommodate for the new GIDI model. Monitoring and Evaluation plans will be developed for the other bid components. Funding is being sought for programme evaluations of all three sub-components.

In addition, MBIE would undertake overall programme and outcomes evaluation of Components A, B and C. This is part of the accountability framework coming together to ensure that policies and programmes 'add up' to expected emissions reductions under the emissions reduction plan. MBIE already works closely with EECA on evaluation of programmes to ensure that policy design incorporates the lessons from evaluation. MBIE expects that independent experts be commissioned to verify emissions reductions from significant projects (this could be mandated as part of co-funding agreements).

The key performance measures for the initiative will be: projected emissions reductions (annual and lifetime, measured in tonnes of CO2e), Marginal Abatement Cost of projects (cost effectiveness of project funding), amount of funding paid out, amount of projects committed to, amount

of support provided to smaller organisations (non-large energy users)/new clients reached, number of projects funded on the basis of sector and regional decarbonisation roadmaps.

Section 5F: Implementation readiness

Workforce: Are additional FTEs or contractors required?	***Y***	MBIE and EECA have undertaken detailed costings of the extra FTE requirements to implement the different components, including the different positions required. Existing resource is fully deployed and there is no capacity to move from other work programmes. The numbers of FTEs vary over each year, depending on level of spending and resource required, however broadly include the following: Confidential advice to Government Free and frank opinions

Workforce: Resourcing considerations	EECA has existing resources so the additional resources required for this bid will be integrated alongside EECA's existing in-house capability and capacity.
Timeframes	The first three sub-components of Component A will have different delivery timeframes: • GIDI 2.0: In the first year, EECA will run another funding round of the existing GIDI model, for which it has current capacity and is aware of projects to fund from previous rounds, and at least one regional round based on the first regional plans. Spending will then be ramped up in the following years, with different funding rounds being made available, for the next regions, specific sectors and technologies. • Commercial Space and Water Heating: In year one work will need to be done designing the delivery mechanism and undertaking stakeholder engagement. Once the programme is set up it will run evenly over its lifetime. • Energy Efficient Equipment: Preparatory work to set up the rebate scheme will all be undertaken in year one, including designing the list of equipment and delivery mechanism. Once set up, the programme will run evenly over its lifetime. Confidential advice to Government
Delivery Risks	GIDI 2.0: Delivering an expanded GIDI fund will require significant extra resources, including administration and business development, which are taken into account in the costing. Commercial space and water heating: EECA has previously worked with this sector, but currently has limited in-house expertise. Initial work will include engaging with stakeholders to ensure effective programme design. Energy Efficient Equipment: There could be limited availability of installers for equipment, and also supply constraints on the equipment themselves. During the design phase work will be done on engaging with partners to undertake service delivery, as we already do for other EECA programmes (such as Warmer Kiwi Homes).
Market capacity	GIDI 2.0: Capacity of the consultancy sector for these projects may be a constraint, as there are limited energy and carbon project services available which are needed to support project design and implementation. EECA currently works closely with a number of these consultancy services so can look to plan for future projects. Work is currently underway in this sector to meet future workforce demand.
Previous delivery experience	EECA currently delivers the GIDI fund which will be expanded on for part of Component A. All funding rounds have been over-subscribed by applicants. The majority of committed projects are underway and on track, with money being paid out at milestones in the contract. Some projects are experiencing delays, largely due to the impacts of COVID-19, however there are no significant risks with current projects. These are managed closely with clients by EECA account managers. EECA has extensive experience delivering business energy efficiency initiatives and has existing in-house capability. EECA also delivers Warmer Kiwi Homes, where we work in partnership with service providers to install insulation and heat pumps in homes, which we subsidise. This model works well, and is one delivery model that we are exploring for both the commercial space and water heating and Energy Efficient Equipment programme, which will be simple from a client perspective, and well delivered with good service provider relationships. MBIE has extensive experience in collecting, analysing energy sector data. MBIE also has extensive experience in sharing this data both with the public and with other government agencies. This data collection and analysis will be expanded through Component B.

Climate Implications of Policy Assessment: Disclosure Sheet

This disclosure sheet provides the responsible department's best estimate of the greenhouse gas emissions impacts for New Zealand that would arise from the implementation of the policy proposal or option described below. It has been prepared to help inform Cabinet decisions about this policy. It is broken down by periods that align with New Zealand's future emissions budgets.

Section 1: General information

General information	
Name/title of policy proposal or policy option:	***Funding further decarbonisation of process heat and implementing supporting policies***
Agency responsible for the Cabinet paper:	Ministry of Business, Innovation and Employment / Energy Efficiency and Conservation Authority (Budget Bid)
Date CIPA finalised:	*7/12/2021*
Short description of the policy proposal:	This initiative provides funding to reduce business energy emissions and resource the implementation of new supporting measures. With this funding, businesses will improve energy productivity, bring forward fuel-switching projects, and reduce exposure to carbon price risk. This represents an attractive investment for government in domestic emission reductions and accelerates action to meet climate targets. It will increase the Government Investment in Decarbonising Industry Fund, and provide funding for smaller businesses, commercial heating decarbonisation, and energy efficient equipment. It will also resource the implementation of an energy and emissions reporting scheme, national direction on industrial emissions and a plan for decarbonising industry.

Section 2: Greenhouse gas emission impacts

Sector & source	Changes in greenhouse gas emissions in tonnes of carbon dioxide equivalent (CO_2-e)						
Option: Max	**2022–25**	**2026–30**	**2031–35**	**2036–40**	**2041–45**	**2046–50**	**Cumulative impact**
Electricity	Const						
Transport							
Industry	Constitu						
Waste							
Agriculture							
Land use, land use change and forestry							
Total	Constitu						

Sector & source	Changes in greenhouse gas emissions in tonnes of carbon dioxide equivalent (CO_2-e)						
Option: MVO	**2022–25**	**2026–30**	**2031–35**	**2036–40**	**2041–45**	**2046–50**	**Cumulative impact**
Electricity	Con						
Transport							
Industry	Constit						
Waste							
Agriculture							
Land use, land use change and forestry							
Total	Constit						

Section 3: Additional information

Additional information

Assumptions changed from the CIPA tool:

- Emissions factors for electricity are drawn from CCC final advice, Current policy reference scenario. These were used to provide a more realistic estimate of the emissions impact of changes in electricity demand over time, based on discussion with MBIE and MfE.

Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
Electricity emissions factor (ktCO2e/GWh)	0.106	0.092	0.079	0.040	0.043	0.046	0.049	0.051	0.054	0.056	0.056	0.055	0.055	0.055	

Year	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Electricity emissions factor (ktCO2e/GWh)	0.054	0.054	0.054	0.053	0.052	0.051	0.047	0.047	0.048	0.048	0.047	0.047	0.046	0.045	0.042

Assumed intervention life varies based on the type of equipment being installed and varies from 10 years to 20 years.

The estimates assume emissions reduction impact is additional to reductions attributable to ETS, as each component aims to help businesses overcome nonprice barriers / address abatement potential not sensitive to rising ETS prices. A 2021 Mafic report commissioned by EECA summarised these barriers as: access to capital; electricity and biomass supply challenges; lack of industry-wide collaboration; low carbon process heat alternatives viewed as uneconomic; technical challenges. See the report on EECA's website here: https://www.eeca.govt.nz/insights/eeca-insights/accelerating-the-decarbonisation-of-process-heat/

In reality, there may be potential overlaps with the ETS and regulatory interventions such as the RMA national Direction. However, these are likely to be modest in BP1 because:

- Of known non-price barriers: A 2021 Mafic report commissioned by EECA summarised these barriers as: access to capital; electricity and biomass supply challenges; lack of industry-wide collaboration; low carbon process heat alternatives viewed as uneconomic; technical challenges. (See the link to the report in Supporting Evidence section below)
- ETS prices out to 2025 (and beyond) may still not be high enough to accelerate investments in industrial process heat
- the ETS is expected to still be a weak signal for smaller businesses until after 2030
- national direction regulation will have incremental site-by-site effect as soon as it is in place, and a material effect only after 2030
- of programme additionality criteria. For example, GIDI project assessments discount emission savings from future years where it is expected that this investment would occur as a result of higher ETS prices, national direction and/or equipment end-of-life.

The overlap of pricing and regulatory interventions would be expected to occur later in the lifetime of the initiative, e.g. from around 2027 onwards as ETS prices rise and regulations are increasingly having an effect. Agencies will continue to work through the overlap methodologies and assumptions and have these informed by programme design and project outcomes.

The largest emissions impact component of the bid is the GIDI extension. Estimates for this component are extrapolated from successful projects in the first investment rounds of the $69M GIDI fund.

Additional information
For subcomponent A.1, the impact assumes funding is expended over 3 years from date of commitment: 25% in Y1, 40% in Y2, 35% in Y3. For subcomponent A.2 and A.3, the impact assumes no lag i.e. 100% of funding is expended in same years as commitment.

Section 4: Quality assurance

Quality assurance
The Climate Implications of Policy Assessment (CIPA) team has been consulted and confirms that the CIPA requirements apply to this proposal given that a primary objective of the proposal is to reduce emission and the threshold for significance is met. This proposal is expected to contribute substantively to meeting emissions budgets through emissions reductions of up to Constitutional across the first three budgets respectively. These measures target decarbonisation of heating and process heat, as well as improving energy efficiency, they will do this by helping remove barriers to relatively low cost abatement opportunities in these areas. The Climate Change Commission modelled early action in these areas as part of their demonstration path and this proposal aligns closely with the Commission's recommendations. While full quality assurance of the emissions analysis was not completed due to a lack of time, the quantification provided is considered to be reasonable given the high levels of uncertainty involved. The estimates may require refinement at a later point given the potential of overlap with other emissions reduction measures like the emissions trading scheme.

Cost Benefit Analysis Summary – proposed option

	Combined	GIDI	Commercial Heating	Energy Efficiency
Cash Flow $ million	*PV $ million*	*PV $ million*	*PV $ million*	*PV $ million*
Capex Third Party	*-1384.01*	*-897.34*	*-54.49*	*-432.18*
Capex EECA	*-829.20*	*-504.75*	*-36.32*	*-288.12*
EECA Costs	*-27.26*	*-14.87*	*-2.53*	*-9.86*
Fuel Costs	*1848.52*	*-1183.45*	*59.88*	*2972.10*
Emissions Reduction	*5696.47*	*5192.46*	*128.50*	*375.51*
Net Cash Flow	*5304.52*	*2750.42*	*95.03*	*2617.45*
	PV $ million	*PV $ million*	*PV $ million*	*PV $ million*
Initiative Costs	*-856.46*	*-519.62*	*-38.86*	*-297.98*
Government Impacts	*5696.47*	*5192.46*	*128.50*	*375.51*
Wider Societal Impacts	*464.52*	*-2080.79*	*5.39*	*2539.92*
Net Present Value	*5304.52*	*2592.05*	*95.03*	*2617.45*
BCR	*7.2*	*2.0*	*3.4*	*9.8*
ROI Societal	*7.2*	*6.0*	*3.4*	*9.8*
ROI Government	*6.7*	*10.0*	*3.3*	*1.3*
MAC $/tonne CO2e	*11.42*	*78.94*	*33.01*	*-894.39*

Emissions Reduction kilotonnes CO2	
Period Ending	2025
	2030
	2035
	2060
Cumulative	Up to 2035
	Lifetime

Constitutional conventions

Cost Benefit Analysis Summary – scaled option

	Combined	GIDI	Commercial Heating	Energy Efficiency
Cash Flow $ million	*PV $ million*	*PV $ million*	*PV $ million*	*PV $ million*
Capex Third Party	*-447.35*	*-274.54*	*-54.49*	*-118.32*
Capex EECA	*-269.63*	*-154.43*	*-36.32*	*-78.88*
EECA Costs	*-25.04*	*-12.65*	*-2.53*	*-9.86*
Fuel Costs	*277.62*	*-659.66*	*59.88*	*877.40*
Emissions Reduction	*2219.46*	*1909.30*	*128.50*	*181.66*
Net Cash Flow	*1755.07*	*871.13*	*95.03*	*852.00*
	PV $ million	*PV $ million*	*PV $ million*	*PV $ million*
Initiative Costs	*-294.67*	*-167.07*	*-38.86*	*-88.74*
Government Impacts	*2219.46*	*1909.30*	*128.50*	*181.66*
Wider Societal Impacts	*-169.72*	*-934.19*	*5.39*	*759.08*
Net Present Value	*1755.07*	*808.03*	*95.03*	*852.00*
BCR	*4.8*	*1.7*	*3.4*	*10.6*
ROI Societal	*7.0*	*5.8*	*3.4*	*10.6*
ROI Government	*7.5*	*11.4*	*3.3*	*2.0*
MAC $/tonne CO2e	*33.76*	*88.43*	*33.01*	*-553.55*

Emissions Reduction kilotonnes CO2	
Period Ending	2025
	2030
	2035
	2060
Cumulative	Up to 2035
	Lifetime

Constitutional conventions