Consultation on EECA's 2022/23 levy funding proposal and related work programme



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Executive summary

Scope of consultation

This document outlines and seeks submissions on Te Tari Tiaki Pūngao Energy Efficiency and Conservation Authority's (**EECA**) levy funding proposal for our 2022/23 work programme from three energy levies:

- 1. Petroleum or Engine Fuel Monitoring (PEFM) levy
- 2. Electricity Industry (Electricity) levy
- 3. Gas Safety, Monitoring and Energy Efficiency (GSMEE) levy.

Submissions are sought on EECA's levy proposal by 5:00pm on Monday, 13 December 2021.

Total levy funding proposed in 2022/23

EECA's activities are funded by the Crown through appropriations of public money. Some of these activities are *partially* funded from levies on electricity, natural gas and engine fuels (i.e. petrol, diesel, ethanol and biodiesel).

Table 2 (on page 5) shows that for 2022/23, EECA's programmes with most direct relevance to the PEFM, Electricity and GSMEE levies will cost \$36.67 million. As shown in Table 1 (on page 5), we propose **\$17.30** million of funding in 2022/23 from the three energy levies be sourced to *partially* fund the listed programmes.

Changes from the 2021/22 proposal

1. Increase in resourcing for business programmes related to the levies:

The increase in resourcing for our Large Energy Users programme is due to a \$4.0 million funding boost from the Government as part of Budget 2021. Resource increases related to other levy-related business programmes represents the need for additional resources due to the criticality around energy use and their related emissions generated from the use of non-renewable sources of energy in the business sector.

2. Increase in PEFM levy funding request:

The \$3.0 million increase in the PEFM levy funding request (from \$7.5 million 2021/22 to \$10.5 million in 2022/23) is made up of a \$260,000 increase to fund the Low Emissions Transport Behaviour Change Programme and a \$2.74 million increase to match the Government's \$2.74 million increase in contribution to the Low Emission Transport Fund for 2022/23.¹

The Labour Party's 2020 Election Manifesto² stated, if elected, they will:

"progressively increase funding [for the Low Emission Transport Fund, formerly the Low Emission Vehicles Contestable Fund] to a total of \$25 million per year, evenly shared by Government contributions and sector levies to fund more electric vehicle chargers and support the purchase of more low emission vehicles. Labour will match the sector's investment and widen the scheme to include both demonstration projects and wider diffusion of low emissions technologies in the transport sector."

The Government's intention is that this increase to the Low Emission Transport Fund be matched by an increase in funding from the PEFM levy as opposed to fully from general appropriations. We are consulting on the \$3.0 million amount being funded by the PEFM levy (and we expect to increase our

¹ This programme was formerly the Low Emission Vehicles Contestable Fund.

² Labour Party 2020 Election Manifesto – Clean Energy (2020):

	2021/22 \$000	2022/23 \$000	2023/24 \$000	2024/25 and outyears \$000
Proposed PEFM funding for Low Emissions Transport Behaviour C	hange Programme 740	1,000	1,000	1,000
Proposed PEFM funding for Low Emissions Transport Fund	6,760	9,500	12,500	12,500
Total proposed PEFM levy-funded contribution	7,500	10,500	13,500	13,500
EECA Funding for Low Emissions Transport Fund	6,760	9,500	12,500	12,500
Total	14,260	20,000	26,000	26,000

PEFM levy request related to the Low Emission Transport Fund each year as the Government's contribution continues to increase, as shown in the table below).

3. Decrease in Electricity levy funding request and increase in GSMEE levy funding request

It is proposed the Electricity levy funding request be decreased by \$0.2 million (from \$5.5 million in 2021/22 to \$5.3 million in 2022/23) and the GSMEE levy funding request be increased by \$0.2 million (from \$1.3 million in 2021/22 to \$1.5 million in 2022/23). This change is due to the underspend in Electricity levy-related activities and overspend in GSMEE levy-related activities in 2020/21. The underspend of \$492,216 has been repaid.

We expect this trend of increased GSMEE levy-related activities and decreased Electricity levy-related activities to continue. Therefore, we expect to continue to increase our GSMEE levy request and (all things being equal) decrease our Electricity levy request accordingly in future years to focus on where we can deliver the best benefits.

4. Pooling of Electricity levy and GSMEE and levy funding:

It is now apparent the use of multiple fuels (i.e. electricity and gas) by many businesses is driving the need to give EECA greater operational flexibility and avoid the complexity and administrative complication costs of making strict judgements about which levy can be used when a programme cuts across multiple fuel types. Consequently, we are now proposing to pool the funding from the Electricity and GSMEE levies to cover relevant programmes in 2022/23 and beyond to which this funding will be applied.

Electricity levies will continue to pay the majority share due to the regulatory related programmes having a predominant focus on electricity products and appliances. This approach is permitted by changes made to the Energy (Fuels, Levies, and References) Act 1989³ which allow for the creation of a pool of levy funding available for EECA to use towards any activities within its statutory function. Further information is available on page 17.

³ Refer to the Energy Innovation (Electric Vehicles and Other Matters) Amendment Act 2017.

Summary of our 2022/23 levy funding proposal

Table 1 – Summary of EECA's levy funding proposal for 2022/23						
Description	2021/22 (\$ million)	2022/23 (\$ million)	Difference (\$ million)			
Total cost of EECA's levy-related programmes (see Table 2 below)	19.87	36.67	16.8			
EECA funding for levy-related programmes	5.57	19.37	13.8			
PEFM levy funding proposal	7.50	10.50	3.0			
Electricity levy funding proposal	5.50	5.30	(0.2)			
GSMEE levy funding proposal	1.30	1.50	0.2			
Total levy funding proposal	14.30	17.30	3.0			
Percentage of the cost of total levy-related programmes	72%	47%	(25%)			

Table 2 – Total cost of EECA's levy-related programmes for 2022/23						
		2021/22 cost (\$ million)		2022/23 cost (\$ million)		
Strategic focus area	EECA levy-related programme	Related to PEFM Levy	Related to Electricity and GSMEE Levies	Related to PEFM Levy	Related to Electricity and GSMEE Levies	Difference (\$ million)
Efficient and	Low Emission Transport Fund ⁴	7.73	-	19.68	-	11.95
low-emissions transport	Low Emissions Transport Behaviour Change Programme	0.84	-	1.64	-	0.80
Energy efficient homes	Equipment Energy Efficiency Programme – Residential	-	1.94	-	1.80	(0.14)
	Equipment Energy Efficiency Programme – Business	-	1.93	-	1.80	(0.13)
	Large Energy Users – Direct Programme (now inclusive of ETA)	-	1.35	-	5.39	4.04
	Technology Demonstration Programme	-	1.88	-	2.69	0.81
Productive and	Sector Decarbonisation Programme (newly established in 2021/22)	-	-	-	2.10	2.10
low-emissions	Industry Development Programme	-	0.63	-	0.60	(0.03)
business	NABERSNZ Programme	-	0.43	-	0.34	(0.09)
	Energy Transition Accelerator (ETA) Programme (now included in the Large Energy Users – Direct Programme)	-	1.40	-	-	(1.40)
	Large Energy Users – Indirect Programme <i>(discontinued)</i>	-	0.98	-	-	(0.98)
Government	Local Authorities Programme	-	0.76	-	0.63	(0.13)
leadership						
Subtotal		8.57	11.30	21.32	15.35	12.75 4.05
Total cost of levy-related programmes		19.	87	36	.67	16.8

 $^{^{\}rm 4}$ This programme was formerly the Low Emission Vehicles Contestable Fund.

PEFM levy

In 2022/23, EECA's PEFM levy-relevant programmes will cost \$21.32 million. We propose **\$10.5 million of funding from the PEFM levy** in 2022/23, which is 49% of the total relevant programme cost.

The amount of \$10.5 million requested from the PEFM levy is a \$3.0 million increase from 2021/22 (\$7.5 million) and represents 60% of our total proposed levy funding across the three levies (\$17.3 million).

The following programmes would be *partially* funded by the proposed levy funding:

- The Low Emission Transport Fund to co-invest in the demonstration and adoption of low-emission transport technology, innovation and infrastructure to accelerate the decarbonisation of the New Zealand transport sector.
- **Low Emissions Transport Behaviour Change Programme** to promote and encourage people to use electric vehicles or other low-emissions transport instead of higher-emitting alternatives.

Electricity and GSMEE levies

In 2022/23, EECA's Electricity levy and GSMEE levy-relevant programmes will cost \$15.35 million. We propose **\$5.3 million of funding from the Electricity levy** and **\$1.5 million of funding from the GSMEE levy** in 2022/23, which is \$6.8 million total and represents 44% of the total relevant programme cost.

The amount of \$5.3 million requested from the Electricity levy is a \$0.2 million decrease from 2021/22 (\$5.5 million) and 31% of our total proposed levy funding across the three levies (\$17.3 million). Furthermore, \$5.3 million is 78% of the total proposed combined Electricity and GSMEE levies request of \$6.8 million.

The amount of \$1.5 million requested from the GSMEE levy is a \$0.2 million increase from 2021/22 (\$1.3 million) and 31% of our total proposed levy funding across the three levies (\$17.3 million). Furthermore, \$1.5 million is 22% of the total proposed combined Electricity and GSMEE levies request of \$6.8 million.

The following programmes would be *partially* funded by the Electricity and GSMEE levies:

- **The Equipment Energy Efficiency (E3) Programme** for developing energy efficiency standards and regulations for energy using products used in business and residential settings.
- **Technology Demonstration Programme** to support demonstration projects for proven but underutilised energy efficient and low-emissions technologies and processes.
- **Large Energy Users Programme** to help businesses become more energy efficient and low-emissions to accelerate the transition to a low-emissions future.
- NABERSNZ Programme to improve the energy performance of commercial buildings.
- **Industry Development Programme** to develop the capability and competence of industry groups, sectors and associations that are aligned or work in connection with EECA's purpose and objectives.
- **Sector Decarbonisation Programme** to create decarbonisation roadmaps for industry sectors and sub-sectors that are using high levels of non-renewable energy so are higher carbon emitters from their energy use.
- **Local Authorities Programme** to provide advice and co-funding for local authorities to reduce their energy use and accelerate their move to renewable forms of energy.

What you need to know to make a submission

What this consultation paper is about

This consultation document provides the opportunity to make submissions on EECA's levy proposal and draft levy-funded work programme for 2022/23, which covers the period 1 July 2022 to 30 June 2023.

Consultation on EECA's levy funding proposal from the three energy levies is required under section 129A of the Electricity Industry Act 2010 for the Electricity levy, and section 14A of the Energy (Fuels, Levies, and References) Act 1989 for the GSMEE levy and the PEFM levy.

The legal context for this consultation is outlined in Appendix 4 (see page 33).

How to make a submission

Email: You may provide your submission in electronic form, which can be emailed to levyconsultation@eeca.govt.nz with "EECA 2022/23 levy consultation submission" in the subject line.

Post: Alternatively, you may wish to **post a physical copy of your submission** to EECA's address: EECA PO Box 388 Wellington 6140

All received submissions will be acknowledged upon receipt (by email). We will also provide written responses to each submission by 31 March 2022.

We will publish all submissions we receive on our website. If required, please indicate any information you wish to provide on a confidential basis and do not want published.

EECA is subject to the Official Information Act 1982 and this means we may be required to release information, unless there is a good reason to withhold it. If you indicate there is a part of your submission that should not be published, we will consult with you before deciding to release or publish that information.

Submission deadline

The consultation period commences on Monday, 8 November 2021, and all submissions must be received by **5:00pm on Monday**, **13 December 2021**.

Next steps

We will consider all submissions before presenting our levy funding request for our 2022/23 work programme to the Minister of Energy and Resources (**Minister**) in early 2022.

The approved appropriations will be announced by the Government in their 2022 Budget, which is usually in May. This information will be included in EECA's 2022/23 Statement of Performance Expectations which will be published by 30 June 2022.

Questions?

If you have any questions regarding the contents of this consultation document or the submission process, please email us at **levyconsultation@eeca.govt.nz**.

Introduction

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Our story

About EECA

EECA is a Crown entity established under the Energy Efficiency and Conservation Act 2000 (**EECA Act**), to encourage, promote and support energy efficiency, energy conservation and the use of renewable sources of energy.

Our purpose is to mobilise New Zealanders to be world leaders in clean and clever energy use.

Our desired outcome

We want New Zealand to have a sustainable energy system that supports the prosperity and wellbeing of *current and future generations*. To achieve this, we must focus on energy efficiency and the use of renewable energy sources. Put simply, we want all of New Zealand to recognise that clean and clever energy use will be an asset to our collective future in a myriad of ways (see page 10 for further detail).

Our three levers

We work to create positive change across systems, using a combination of three important levers. We choose the most effective combination of the three depending on factors like existing barriers and market maturity:

- 1. **Co-investing**: We co-invest in energy-efficient technologies and energy systems using renewable sources of energy. Where there are financial barriers, we help to overcome these and appropriately share the financial risk to incentivise energy users to accelerate investment in technologies and the use of renewable sources of energy that can make a real difference.
- **2. Motivating people**: We motivate people to make clean and clever energy choices. We develop and communicate credible information that will help targeted audiences to make informed choices, and to take action.
- **3. Regulating**: We regulate proven technologies and processes. We help prevent inefficient products and appliances from being sold in New Zealand. We support the development of energy-related policies that create the enabling environment energy users need to transition to a low-emissions economy.

Our investment approach

We have five strategic focus areas, as shown in our Strategy over the page. The programmes we design and implement within these focus areas are guided by our strategic principles and align with:

- The New Zealand Energy Efficiency and Conservation Strategy (2017-2022).⁵
- The commitments New Zealand has made as a party to the Paris Agreement on Climate Change.
- The ambitions of the Government in respect of the supply of renewable energy for the electricity sector.
- The transition to a net-zero emissions economy by 2050.

These challenges are significant and EECA is committed to playing its part. We work with a wide range of stakeholders, clients and New Zealanders as we transition to a low-carbon and sustainable energy system that supports the prosperity, and the wellbeing, of current and future generations.

⁵ Unlocking our energy productivity and renewable potential – the New Zealand Energy Efficiency and Conservation Strategy 2017 – 2022 (NZEECS): mbie.govt.nz/assets/346278aab2/nzeecs-2017-2022.pdf.

EECA's strategy

Our purpose

Mobilise New Zealanders to be world leaders in clean and clever energy use.





Our desired outcome

A sustainable energy system that supports the prosperity and wellbeing of current and future generations.

Emerging government policies and initiatives

Our proposed 2022/23 work programme is aligned to the Government's priorities and the more recent policy initiatives being driven by its response its response to the COVID-19 pandemic and its broader climate change agenda.

Those most relevant to our work include:

- The forthcoming Emissions Reduction Plan, in which the Government will adopt emissions budgets for the next 14 years and lay out its plan to deliver these in response to advice from the He Pou a Rangi Climate Change Commission.
- A growing suite of energy and transport decarbonisation initiatives, including the Clean Car Package, Resource Management Act national direction on industrial greenhouse gas emissions, and proposals to reform EECA's energy efficient product and services regulatory regime.
- The Government's ongoing COVID-19 economic recovery plan which has seen additional funding provided to EECA.

Positive impacts from clean and clever energy

Environmental

Using energy more efficiently and switching to renewable energy solutions reduces emissions that have a harmful impact on the environment. Nearly 42%⁶ of New Zealand's gross greenhouse gas emissions come from energy use, primarily through using fossil fuels. There are significant opportunities for New Zealand to reduce its emissions associated with energy use and, in doing so, helping meet our Paris Agreement target.⁷

While more than 80%⁸ of New Zealand's electricity generation comes from renewable resources, emissions from electricity generation still account for 5% of our total energy-related emissions, meaning that using our electricity more efficiently will reduce energy-related emissions.⁹

At times, such as during very cold weather or low inflow periods, a significant portion of New Zealand's peak demand is met by thermally generated electricity, meaning that reducing peak demand is another important step to achieving the Government's goal of a 100% renewable electricity system.

Transport fuels and process heat systems are large producers of energy-related emissions. New Zealand's growing transport energy needs are almost exclusively met by petroleum-derived fossil fuels, with emissions from transport accounting for nearly 51% of New Zealand's energy-related emissions.¹⁰ Furthermore, around 55% of our industrial and commercial heat needs are met by fossil fuels.¹¹

⁶ Greenhouse Gas Inventory 1990-2019, Ministry for the Environment (2021); Light vehicles and Other transport estimates are based on data from the Ministry of Business, Innovation & Employment (**MBIE**) 2019 energy balances and MBIE Energy in New Zealand (2020).

⁷ Paris Agreement target: New Zealand's net emissions will be 30 per cent below 2005 (or 11 per cent below 1990) gross emissions for the period

¹ January 2021 to 31 December 2030.

⁸ mbie.govt.nz/dmsdocument/11679-energy-in-new-zealand-2020.

⁹ environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-1990-2019-snapshot.

¹⁰ Greenhouse Gas Inventory 1990-2019, Ministry for the Environment (2021); Light vehicles and Other transport estimates are based on data from the MBIE 2019 energy balances and MBIE Energy in New Zealand (2020).

 $[&]quot;\ mbie.govt.nz/assets/8c89799b73/process-heat-current-state-fact-sheet.pdf.$

Economic

Improving energy efficiency saves money across the economy. New Zealand spends approximately \$18.6 billion on energy each year and EECA estimates that around 15 to 20% of energy use could be saved through improved energy efficiency by 2030.¹²

Lower energy prices: In an efficient and competitive market, less energy will be used. This produces a mix of economic benefits and wealth transfers in the form of lower energy prices for energy users. Price reductions tend to be larger in markets with convex supply curves (such as electricity), where the cost of more production tends to increase steeply as demand increases.

Increased energy productivity: Energy efficiency can be achieved by using less energy to deliver the same services or using the same amount of energy to deliver a greater level of service. Improved energy efficiency increases energy productivity, which supports New Zealand businesses and exporters to become more competitive and profitable.

Reduced/delayed investment: Electricity efficiency can help to reduce peak demand, delivering system-wide benefits to New Zealanders in the form of reduced or delayed investment in grid and distribution infrastructure, and less volatile wholesale prices.¹³ Our research indicates that electricity efficiency measures can be deployed at a lower equivalent cost than new renewable generation, and that implementing these measures would make it easier to meet new demand arising from electrification.¹⁴

Resilience and security: Switching to renewable energy solutions where possible also reduces our dependence on fossil fuels, increases our energy security and makes us more resilient to fluctuating commodity prices. Electric vehicles can be more expensive to purchase than fossil-fuelled vehicles, especially brand new. But as they cost far less to run, they can be cost-competitive over time.

Social

Disposable income: ensuring that poor performing, and inefficient appliances are not available for sale in New Zealand saves households and businesses money on their energy bills for the lifetime of those appliances.

Improved health and wellbeing: there are proven health benefits from reducing pollution associated with the use of fossil fuels for heat and transport.

¹² EECA's analysis using the Ministry of Business, Innovation and Employment's Energy Balance 2020 and Energy Prices 2020.

¹³ Concept Consulting Group Limited, *What is the case for electricity efficiency initiatives*? June 2017.

¹⁴ Energy Efficiency First, EECA (2019): eeca.govt.nz/insights/eeca-insights/energy-efficiency-first.

How we are funded

Our activities are funded by the Crown from general appropriations. Based on current appropriations, in 2022/23 we are receiving funding through four appropriations within Vote Business, Science and Innovation:

- 1. **Energy Efficiency and Conservation**: This appropriation is used to achieve improvements in energy efficiency, energy conservation and renewable energy. See below for more detail.
- 2. **Grant Scheme for Warm, Dry Homes**: This appropriation is used to achieve energy savings and health benefits for households through the Warmer Kiwi Homes scheme.
- 3. **Implementation of the Grant Scheme for Warm, Dry Homes**: This appropriation is used to achieve the implementation of the Warmer Kiwi Homes grants scheme
- 4. **Government Investment in Decarbonising Industry (GIDI)**: This appropriation is for grants to decarbonise industrial process heat through energy efficiency, technology innovation, and fuel switching where they directly reduce the use of fossil fuels.

Energy Efficiency and Conservation

This appropriation is limited to operational and policy outputs in accordance with our statutory functions under the EECA Act and the Government's energy strategies. There are eight components: Crown funded initiatives, State Sector Decarbonisation, Government Investment in Decarbonising Industry OPEX, Carbon Neutral Government Programme, Low Emission Transport Fund, Electricity levy funded initiatives, PEFM levy funded initiatives, and GSMEE levy funded initiatives.

The Government collects the energy levies and *partially* invests them in our work programmes. **This document consults on the level of levy sourced funding that will be used to** *partially* **fund EECA's 2022/23 work programme**. The proposed contributions to EECA's 2022/23 proposed budget and a comparison to our 2021/22 Statement of Performance Expectations (SPE) budget is shown below:

Funding source by appropriation	2021/22 SPE budget (\$000)	2022/23 proposal (\$000)
Non-departmental output expenses		
Energy Efficiency and Conservation		
Crown funded initiatives	18,284	20,284
State Sector Decarbonisation	3,980	4,800
Government Investment in Decarbonising Industry OPEX	200	100
Carbon Neutral Government Programme	8,246	11,182
Low Emission Transport Fund ¹⁵ appropriation	6,760	9,500
Electricity levy funded initiatives	5,500	5,300
PEFM levy funded initiatives	7,500	10,500
GSMEE levy funded initiatives	1,300	1,500
Non-departmental other expenses – multiyear appropriations		
Government Investment to Decarbonise Industry grants	19,600	34,800
Warmer Kiwi Homes – Implementation	5,272	5,070
Warmer Kiwi Homes – Grants	72,480	67,360
Infrastructure Reference Group shovel-ready projects grants scheme	24,011	0
Total operational appropriations	173,133	170,396
Other revenue	376	225
Total operational funding	173,509	170,621

¹⁵ This programme was formerly the Low Emission Vehicles Contestable Fund.

Who pays the energy levies?

Electricity Industry Levy

Section 128 of the Electricity Industry Act 2010 provides for a levy on electricity industry participants. The funds recovered by this levy meet many of the costs of the Electricity Authority.

The EECA portion of the levy is collected from electricity industry participants that purchase electricity from the wholesale market (i.e. typically electricity retailers).¹⁶ The final 2022/23 Electricity levy rate will be published in the New Zealand Gazette in May 2022.¹⁷

Petroleum or Engine Fuel Monitoring (PEFM) levy

Section 24 of the Energy (Fuels, Levies and References) Act 1989 (**EFLR Act**) provides for the collection of a levy on each litre of petroleum or engine fuel sold (petrol, diesel, ethanol, and biodiesel).

The PEFM levy is payable by fuel importers, who pass on the cost on to consumers. Imported petrol and diesel is levied by the Te Mana Ārai o Aotearoa New Zealand Customs Service at the port of import, whereas imported oil is levied at the refinery once processed into the finished product.

The indicative PEFM levy rate for 2022/23 is 0.59 cents/litre, including 0.09 cent/litre for the variable EECA cost, and 0.50 cents/litre for non-EECA activities. The final levy rate will be published in the New Zealand Gazette in May 2022.¹³

Gas Safety, Monitoring and Energy Efficiency (GSMEE) levy

Section 23 of the EFLR Act provides for the collection of a levy on piped natural gas, except for gas which is sold for used as a feedstock or for the generation of electricity or is liquefied petroleum gas. The GSMEE levy is payable by sellers of piped gas to gas retailers and gas retailers who sell piped gas.

The indicative GSMEE levy rate for 2022/23 is 3.7 cents/GJ, including 1.7 cents/GJ for the variable EECA cost, and 2.0 cents/GJ for non-EECA activities. The final levy rate will be published in the New Zealand Gazette in May 2022.¹³

¹⁶ gazette.govt.nz/notice/id/2021-gs2406.

¹⁷ gazette.govt.nz.

Our draft 2022/23 work programme and levy proposal

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Our approach to providing information on the proposed 2022/23 levy-funded programmes

Detailed information on proposed levy-funded programmes

Consistent with our normal approach, we have provided detailed information below on the programmes that will be funded from the three energy levies. This includes the need for each programme and the expected outputs and benefits they will deliver.

In addition, where it is appropriate or practicable, we have also outlined the link between the groups being levied and whether they benefit from, or cause a need for, a particular levy-funded programme. The provision of information of this type helps to ensure transparency in the use of levy funding for our programmes and helps us to consult with levy payers and other parties who are significantly affected by the levy.

Full work programme provided for context

We have provided information about our whole proposed programme portfolio to demonstrate the wider context for our work, and how our *partially* levy-funded programmes fit within this wider portfolio (see Appendix 1, page 30).

Changes from the 2021/22 levy consultation

1. Increase in resourcing for business programmes related to the levies:

The increase in resourcing for our Large Energy Users programme is due to a \$4.0 million funding boost from the Government as part of Budget 2021. Resource increases related to other levy-related business programmes represents the need for additional resources due to the criticality around energy use and their related emissions generated from the use of non-renewable sources of energy in the business sector.

2. Increase in PEFM levy funding request:

The \$3.0 million increase in the PEFM levy funding request (from \$7.5 million 2021/22 to \$10.5 million in 2022/23) is made up of a \$260,000 increase to fund the Low Emissions Transport Behaviour Change Programme and a \$2.74 million increase to match the Government's \$2.74 million increase in contribution to the Low Emission Transport Fund for 2022/23.¹⁸

The Labour Party's 2020 Election Manifesto¹⁹ stated, if elected, they will:

"progressively increase funding [for the Low Emission Transport Fund, formerly the Low Emission Vehicles Contestable Fund] to a total of \$25 million per year, evenly shared by Government contributions and sector levies to fund more electric vehicle chargers and support the purchase of more low emission vehicles. Labour will match the sector's investment and widen the scheme to include both demonstration projects and wider diffusion of low emissions technologies in the transport sector."

The Government's intention is that this increase to the Low Emission Transport Fund be matched by an increase in funding from the PEFM levy as opposed to fully from general appropriations. We are consulting on the \$3.0 million amount being funded by the PEFM levy (and we expect to increase our PEFM levy request related to the Low Emission Transport Fund each year as the Government's contribution continues to increase, as shown in the image below (over the page).

¹⁸ This programme was formerly the Low Emission Vehicles Contestable Fund.

¹⁹ Labour Party 2020 Election Manifesto - Clean Energy (2020):

	2021/22 \$000	2022/23 \$000	2023/24 \$000	2024/25 and outyears \$000
Proposed PEFM funding for Low Emissions Transport Behaviour Change Programme	740	1,000	1,000	1,000
Proposed PEFM funding for Low Emissions Transport Fund	6,760	9,500	12,500	12,500
Total proposed PEFM levy-funded contribution	7,500	10,500	13,500	13,500
EECA Funding for Low Emissions Transport Fund	6,760	9,500	12,500	12,500
Total	14,260	20,000	26,000	26,000

3. Decrease in Electricity levy funding request and increase in GSMEE levy funding request

It is proposed the Electricity levy funding request be decreased by \$0.2 million (from \$5.5 million in 2021/22 to \$5.3 million in 2022/23) and the GSMEE levy funding request be increased by \$0.2 million (from \$1.3 million in 2021/22 to \$1.5 million in 2022/23). This change is due to the underspend in Electricity levy-related activities and overspend in GSMEE levy-related activities in 2020/21. The underspend of \$492,216 has been repaid.

We expect this trend of increased GSMEE levy-related activities and decreased Electricity levy-related activities to continue. Therefore, we expect to continue to increase our GSMEE levy request and (all things being equal) decrease our Electricity levy request accordingly in future years to focus on where we can deliver the best benefits.

4. Pooling of Electricity levy and GSMEE and levy funding:

It is now apparent the use of multiple fuels (i.e. electricity and gas) by many businesses is driving the need to give EECA greater operational flexibility and avoid the complexity and administrative complication costs of making strict judgements about which levy can be used when a programme cuts across multiple fuel types. Consequently, we are now proposing to pool the funding from the Electricity and GSMEE levies to cover relevant programmes in 2022/23 and beyond to which this funding will be applied.

Electricity levies will continue to pay the majority share due to the regulatory related programmes having a predominant focus on electricity products and appliances. This approach is permitted by changes made to the Energy (Fuels, Levies, and References) Act 1989²⁰ which allow for the creation of a pool of levy funding available for EECA to use towards any activities within its statutory function.

Levy-funded programmes for 2022/23 are only partially funded by levy funding

We are again not seeking to recover 100% of the costs of levy-funded activities from the levies. We are instead proposing to recover 49% of the total costs of PEFM levy-related programmes from the PEFM levy, and 44% of the total costs of GSMEE and Electricity levy-related activities from the GSMEE and Electricity levy. The balance of the costs of these programmes will be covered by EECA's baseline Crown funding.

This is for several reasons:

- the Government has provided specific additional EECA baseline Crown funding to achieve additional results in the move to renewable sources of energy for transport and process heat needs;
- the method for allocating overheads to levy-related activities and assessing the proportion of programme costs across levy sources is subjective, albeit based on robust assumptions. Consequently, we have chosen to take a conservative approach in not seeking to fully recover all assessed costs from the levies.

²⁰ Refer to the Energy Innovation (Electric Vehicles and Other Matters) Amendment Act 2017.

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Summary of 2022/23 proposal and levy-funded programmes

Table 2 below shows that for 2022/23, EECA's programmes related to the PEFM, Electricity and GSMEE levies will cost \$36.67 million. As shown in Table 1, we propose **\$17.30 million of funding in 2022/23 from the three energy levies** to *partially* fund the listed programmes.

Table 1 – Summary of EECA's levy funding proposal for 2022/23						
Description	2021/22 (\$ million)	2022/23 (\$ million)	Difference (\$ million)			
Total cost of EECA's levy-related programmes (see Table 2 below)	19.87	36.67	16.8			
EECA funding for levy-related programmes	5.57	19.37	13.8			
PEFM levy funding proposal	7.50	10.50	3.0			
Electricity levy funding proposal	5.50	5.30	(0.2)			
GSMEE levy funding proposal	1.30	1.50	0.2			
Total levy funding proposal	14.30	17.30	3.0			
Percentage of the cost of total levy-related programmes	72%	47%	(25%)			

Table 2 – Total cost of EECA's levy-related programmes for 2022/23						
	2021/22 cost 2022/23 cost (\$ million) (\$ million)					
Strategic focus area	EECA levy-related programme	Related to PEFM Levy	Related to Electricity and GSMEE Levies	Related to PEFM Levy	Related to Electricity and GSMEE Levies	Difference (\$ million)
Efficient and	Low Emission Transport Fund ²¹	7.73	-	19.68	-	11.95
low-emissions transport	Low Emissions Transport Behaviour Change Programme	0.84	-	1.64	-	0.80
Energy efficient homes	Equipment Energy Efficiency Programme – Residential	-	1.94	-	1.80	(0.14)
	Equipment Energy Efficiency Programme – Business	-	1.93	-	1.80	(0.13)
	Large Energy Users – Direct Programme (now inclusive of ETA)	-	1.35	-	5.39	4.04
	Technology Demonstration Programme	-	1.88	-	2.69	0.81
Productive and	Sector Decarbonisation Programme (newly established in 2021/22)	-	-	-	2.10	2.10
husiness	Industry Development Programme	-	0.63	-	0.60	(0.03)
business	NABERSNZ Programme	-	0.43	-	0.34	(0.09)
	Energy Transition Accelerator (ETA) Programme (now included in the Large Energy Users – Direct Programme)	-	1.40	-	-	(1.40)
	Large Energy Users – Indirect Programme <i>(discontinued)</i>	-	0.98	-	-	(0.98)
Government leadership	Local Authorities Programme	-	0.76	-	0.63	(0.13)
Subtotal		8.57	11.30	21.32	15.35	12.75 4.05
Total cost of levy	-related programmes	19.8	87	36	.67	16.8

²¹ This programme was formerly the Low Emission Vehicles Contestable Fund.

Proposed PEFM levy-funded programmes in 2022/23

In 2022/23, we are seeking \$10.5 million sourced from the PEFM levy (in 2021/22 we sought \$7.5 million from the PEFM levy). Of this increase, \$2.74 million will be for the Low Emission Transport Fund and \$0.26 million will be for the Low Emissions Transport Behaviour Change Programme. The table below shows the programmes that this funding *partially* fund.

Levy-related programme	Levy-funded in 2021/22	Levy-funded in 2022/23
Low Emission Transport Fund ²²	\checkmark	\checkmark
Low Emissions Transport Behaviour Change Programme	\checkmark	\checkmark

Efficient and low-emissions transport programmes



Why transport matters

Transport is the cause of over half of New Zealand's energy-related emissions, which is why this is a key focus area for EECA.²³ When we burn fossil fuels like petrol, diesel and aviation kerosene to power our cars, trucks, buses, boats, trains and planes, we produce harmful emissions that contribute to the negative effects of climate change. EECA will provide support and insights to help New Zealand optimise the way people and goods are transported, and to utilise efficient low-emissions technologies and fuels. This enables New Zealanders to get more out of life using transport options that produce fewer emissions. As an example, increased uptake of petrol hybrid and electric vehicles could reduce New Zealand's carbon emissions by 1.4 to 5.1 million tonnes by 2035.²⁴

Low Emission Transport Fund

What are we aiming to achieve

The Low Emission Transport Fund (**LETF**) builds on the now complete Low Emission Vehicles Contestable Fund, with an increase in size and scope. The purpose of the LETF is to support the demonstration of high potential and replicable solutions, and adoption of low emission transport technology, innovation and infrastructure to help accelerate the decarbonisation of the New Zealand transport sector.

 $^{^{\}scriptscriptstyle 22}$ This programme was formerly the Low Emission Vehicles Contestable Fund.

²³ Greenhouse Gas Inventory 1990-2019, Ministry for the Environment (MfE) (2021); Light vehicles and Other transport estimates are based on data from the MBIE 2019 energy balances and MBIE Energy in New Zealand (2020).

²⁴ The lower limit applies to the Tui scenario where climate change is competing with other priorities, while the upper limit applies to the Kea scenario where it is seen as the most pressing issue in New Zealand. These are results from the TIMES-NZ 2.0 model developed by EECA, Paul Scherrer Institute and the Business Energy Council.

The fund focuses on activities in the transport sector that move people and/or goods on roads, off-road, and potentially in the marine and aviation sectors to: demonstrate innovative solutions that will enable future adoption and deployment; reduce energy related emissions in the transport sector; address market and organisational barriers through co-investment and diffusion of new knowledge and learnings; and share knowledge and learnings to stimulate wider replication of successful projects and solutions in the transport sector.

The LETF is divided into a portfolio of investment activities which are released to the market as individual funding rounds for co-funding in each area within the scope of the fund. An announcement is made in advance of each new activity.

For more information, visit our website: <u>eeca.govt.nz/co-funding/transport-emission-reduction/low-emission-transport-fund</u>.

What we expect to deliver in 2022/23

In 2022/23 we expect the LETF to undertake the following activities:

- Commit \$18.3 million in co-funding to low-emissions transport projects.
- Run at least two technology funding rounds and two charging infrastructure rounds.
- Support the completion of existing project milestones due in the year.
- Deliver learning outcomes and publish these in case studies to aid the development of business cases and showcase potential.
- Broaden the investment criteria to accommodate the increased Government funding (i.e. off-road vehicles and potentially marine).

Low Emissions Transport Behaviour Change Programme

What are we aiming to achieve

We deliver a low-emissions vehicle support programme. The outcome we are seeking is that New Zealanders choose low-emissions mobility options.

Through this programme we seek to inform and inspire New Zealanders so more people than ever choose lowemissions transport over high-emissions options. We will build awareness of the link between transport and carbon emissions and promote behaviour change by choosing transport modes like walking, cycling and public transport.

We aim to engage New Zealanders about electric and low-emissions vehicles, reinforcing motivations like the Clean Car Discount and addressing barriers, such as uncertainty about battery life and afterlife, range anxiety, and uncertainty about charging (e.g. how to charge and where to find public charging stations). The programme will also help consumers compare the total cost of owning cars through our online Total Cost of Ownership tool.

What we expect to deliver in 2022/23

In 2022/23, we expect the Low Emissions Transport Behaviour Change Programme to undertake the following activities:

- Commission authoritative reports and continue to develop information on the state of electric vehicle and low-emissions vehicle technology and the implications for New Zealand.
- Develop a marketing campaign to engage our target audience via channels that support effective and impactful delivery and publish information about electric vehicles and low emissions vehicles on our website.

Provide guidance and advice to motorists, car dealers, and other industry players.

• Manage productive stakeholder relationships with key partners working on the same objectives.

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• Conduct market research and monitoring to better understand target audiences.

Linking efficient and low-emissions transport programmes to the PEFM levy

Link to PEFM levy

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The transport sector is heavily reliant on fossil fuels and with continued growth in the domestic transport sector, emissions from road transport are increasing. By harnessing New Zealand's highly renewable electricity system and by promoting the transition to low-emissions vehicle technologies, the LETF and Low Emissions Transport Behaviour Change Programme will support New Zealand's transition to a low emissions economy.

The widespread uptake of zero and low-emissions vehicles, technologies and fuels will contribute to New Zealand meeting its climate change commitments, reduce fossil fuel consumption, improve local air quality by reducing harmful air pollutants, save money, diversify the sources of our transport energy, and enhance energy security in the long run.

Proposed Electricity and GSMEE-levy funded programmes in 2022/23

In 2022/23, we are seeking \$5.3 million sourced from the Electricity levy and \$1.5 million from the GSMEE levy (in 2021/22 we sought \$5.5 million from the Electricity levy and \$1.3 million from GSMEE levy). The table below shows the programmes that this funding will *partially* fund. This change is due to increased GSMEE levy-related activities and decreased Electricity levy-related activities which we expect to continue as the focus increasingly shifts to gas fuelled energy systems. Therefore, we expect to continue to increase our GSMEE levy request and (all things being equal) decrease our Electricity levy request accordingly in future years to focus on where we can deliver the best benefits.

Levy-related programme	Levy-funded in 2021/22	Levy-funded in 2022/23
Equipment Energy Efficiency Programme – Residential	\checkmark	\checkmark
Equipment Energy Efficiency Programme – Business	\checkmark	\checkmark
Large Energy Users – Direct Programme	\checkmark	\checkmark
Technology Demonstration Programme	\checkmark	\checkmark
Sector Decarbonisation Programme (established in 2021/22)	×	\checkmark
Industry Development Programme	\checkmark	\checkmark
NABERSNZ ²⁵ Programme	\checkmark	\checkmark
Energy Transition Accelerator Programme		
(now included in the Large Energy Users – Direct programme)	✓	×
Large Energy Users – Indirect Programme (discontinued)	\checkmark	×
Local Authorities Programme	\checkmark	\checkmark

Commercial and residential equipment energy efficiency programmes



Equipment Energy Efficiency (E3) Programme

About the programme

The Equipment Energy Efficiency (**E3**) Programme is a joint programme with Australia that develops common regulatory energy efficiency Standards for both residential and business products.²⁶ Collaboration with

²⁵ National Australian Built Environment Rating System New Zealand.

²⁶ More information about EECA's E3 Programme is available here: eeca.govt.nz/regulations/equipment-energy-efficiency/about-the-e3-programme

Australia means that overheads are shared appropriately between the two countries, making the programme cost-effective and excellent value for money.

Equipment energy efficiency activities include:

- the development and optimisation of minimum energy performance standards (**MEPS**) to ensure that poor-performing products are prevented from being sold in New Zealand
- ensuring regulated appliances for sale in stores display the correct energy rating label (Mandatory Energy Performance Labelling (**MEPL**) by surveying stores, helping consumers to choose energy efficient products
- ensuring regulated appliances meet **MEPS** requirements by check testing their energy performance
- the development of *Publicly Available Specifications* which provide best practice guidance for technologies.

The E3 Programme contributes to two of EECA's strategic focus areas: 'Productive and low-emissions business' and 'Energy efficient homes.' The programme ensures manufacturers and suppliers raise the efficiency of their products, resulting in efficiency gains and reducing the total cost of operating products in New Zealand.

What we are aiming to achieve

Over 92 million business and residential products have been sold under the E3 Programme since 2002, delivering energy savings of 70.0 PJ, emissions reductions of 2.7 Mt CO₂e, and representing savings of \$1.7 billion in national benefit.

The key estimated benefits for this programme in 2022/23 include:

- Electricity savings of 357 GWh.
- Carbon emissions reduction of 39 ktCO₂e.
- A New Zealand benefit of \$31.4 million.

What we expect to deliver in 2022/23

For the E3 Programme, in 2022/23, we expect to undertake the following activities:

- Contribute to the governance of the trans-Tasman E3 Programme, including developing future strategies and priorities.
- Develop and implement MEPS and MEPL. In 2022/23, this may include (subject to Ministerial approval) three-phase electric motors (i.e. MEPS), air conditioners over 65kW (i.e. MEPS), and household fridges/freezers (i.e. MEPS and MEPL).
- Develop *Publicly Available Specifications* including for industrial motor systems.
- Review existing regulations to check they are still relevant, and if not revoke them. This may include set top boxes and external power supplies.
- Manage industry compliance with the Energy Efficiency (Energy Using Products) Regulations 2002 through market surveys, check testing and taking enforcement action when required.

Linking equipment energy efficiency to the Electricity and GSMEE levies

Link to the Electricity

Business and residential households benefit directly from the E3 Programme whenever they purchase appliances or equipment covered by the programme. Products will use less energy, for the same output, resulting in a lower total cost of ownership as compared to the absence of our intervention. More efficient

products result in lower energy and maintenance costs for businesses, thereby enabling them re-invest the savings to be more productive and profitable.

The E3 Programme effectively lowers overall energy demand (particularly electricity), leading to lower energy costs for all consumers and creating system-wide benefits that allow New Zealand to defer investment in new expensive generation infrastructure and continue meeting most of its stationary energy needs from renewable and low-emission energy resources.

Link to the GSMEE levy

Part of the E3 Programme is proposed to be funded under the GSMEE levy in 2022/23 to support work on MEPS for business products (such as gas water heaters), which would improve gas efficiency and reduce associated emissions. This part of the E3 Programme will therefore help to reduce negative externalities caused by GSMEE payers in the form of reduced carbon emissions.

Productive and low-emissions business programmes



Why business?

A massive 40% of New Zealand's energy-related emissions come from the business sector.²⁷ This is why business is one of EECA's key focus areas, we support the business sector to be more productive with less emissions. The largest portion of energy-related emissions from businesses comes from the burning of fossil fuels for 'process heat' – the steam, hot water or hot gases used in industrial processing, manufacturing and space heating. The good news is, there are a number of low-emissions alternatives available for businesses that not only reduce emissions but can also lower energy costs and improve profitability. Businesses need to act now. EECA motivates the business sector to step up and accelerate the transition to a low-emissions economy.

Large Energy Users (Direct Engagement) Programme

What are we aiming to achieve

Businesses can improve their energy efficiency by up to 20% through smarter energy use and investment in energy efficient technologies. We partner with large energy using businesses to prioritise the areas of greatest potential for energy savings and emission reductions.²⁸ We facilitate access to tailored advice and services for

²⁷ Greenhouse Gas Inventory 1990-2019, MfE (2021); Light vehicles and Other transport estimates are based on data from the MBIE 2019 energy balances and MBIE Energy in New Zealand (2020).

²⁸ You can find out more information about EECA's support of large energy users by visiting our website: eeca.govt.nz/co-funding.

large energy users across New Zealand to help them identify and invest in long-term solutions to energy and carbon management challenges. This reduces energy-related costs for the business, moves the sector forward on the energy transition journey and helps build capability in the sector. It also creates public benefits, primarily in the form of reduced carbon emissions.

We work directly with large energy users because their large-scale operations offer the most cost-effective gains and provides the greatest benefits to our economy. Their prominence also provides leadership to other businesses (large and small), and the best opportunity to spread best energy management practices across the market.

Note the Energy Transition Accelerator programme (as listed in the 2021/22 levy consultation) is now included in the Large Energy Users Direct Engagement programme.

For more information on the programme, please visit: <u>eeca.govt.nz/co-funding/energy-and-carbon-reduction</u>.

What we expect to deliver in 2022/23

In 2022/23, we expect the Large Energy Users Programme to deliver:

- Long-term energy management partnerships with large energy users, with EECA providing direct account management support and co-funding for electricity and gas projects.
- Support and funding for energy transition accelerator plans, energy audits, operational efficiency improvements, and energy monitoring and targeting.
- Training and industry development.
- Monitoring of project milestones in order to ensure that co-funding is only paid out as contracted.
- Provision of energy management information, resources and advice.
- A targeted approach for small to medium enterprises.
- Energy and emissions savings as a result of partnerships with large energy users (refer to 20/21 levy annual report in Appendix 1 for specific programme achievements).

Technology Demonstration Programme

What are we aiming to achieve

We aim to find solutions that reduce energy use and emissions, which often involves support for new technologies. New and under-utilised technologies can carry risk for businesses due to uncertainty about performance and the consequential risk of disruption to production lines, and this can have flow-on impacts on other areas of performance, consumer satisfaction and overall business competitiveness.

Our co-investment in innovative technology demonstrations shares the financial and operational risk. This investment supports early adoption of technologies by setting up/demonstrating commercially available, but proven under-utilised technologies, which have significant potential to reduce energy use and emissions in New Zealand. The programme also includes *process changes*, which are under-utilised process improvements for making energy-using technology more energy efficient. Not only do these projects create direct benefits, they also help accelerate the diffusion of innovative technologies and processes throughout the economy.

For more information on the programme, visit: eeca.govt.nz/co-funding/technology-demonstration.

What we expect to deliver in 2022/23

In 2022/23, we expect the Technology Demonstration Programme, to deliver:

• Co-funding to demonstrate proven, yet under-utilised energy efficient technologies or processes in New Zealand, with the aim of promoting the projects for broader uptake

- Co- funding to support early adopters of new technologies
- Energy and emissions savings as a result of co-funded projects
- Case studies and information to promote the results of demonstration projects and to encourage uptake within and across sectors.

Sector Decarbonisation Programme

What are we aiming to achieve

The Sector Decarbonisation Programme was first trialled in 2020/21. It is designed to move from a 'one to one' approach as used for the large energy users programme to a 'one to many' engagement approach given the sheer number of entities involved. Through providing co-funding and access to technical expertise, we aim to define decarbonisation roadmaps for industry sectors and sub-sectors that are carbon intensive in their energy use. Our primary approach is to engage with an aligned industry association that represents the sector and leverage the sector-specific expertise and communication channels to maximise engagement with representative businesses.

We have prioritised a number or subsectors to target with this programme initially, including covered cropping, the various sub-sectors of food and beverage manufacturing and processing, smaller scale meat processing, smaller scale dairy processing, and accommodation (primarily hotels). The initial focus of the programme is the decarbonisation of stationary energy (supporting sectors and representative businesses identify a pathway away from coal, natural gas, fuel oil/diesel, and liquefied petroleum gas where these are used for process heat) but may broaden over time.

What we expect to deliver in 2022/23

In 2022/23, we expect the Sector Decarbonisation Programme to undertake the following activities:

- Complete further priority sector decarbonisation roadmaps.
- Encourage the implementation of sector decarbonisation roadmaps through other existing EECA programmes.

Industry Development Programme

What are we aiming to achieve

We aim to develop relationships with and support industry partners and associations that are aligned or work in connection with EECA's purpose and objectives. This is designed to build capability and capacity within the energy sector to meet the demand for expertise. We fund the development of technical information, guidance, specifications; the development and delivery of training courses, webinars, seminars, conferences; and the maintenance of energy and carbon management accreditation framework. Our engagements and industry collaborations extend across partners working with all fuel types.

What we expect to deliver in 2022/23

- Continued support to Carbon Energy Professionals, Bio Energy Association and Drive Electric
- Targeted training webinars and conferences
- Growth of partner member bases and more sustainable sector organisations.

National Australian Built Environment Rating System New Zealand (NABERSNZ)

What are we aiming to achieve

EECA delivers ongoing improvements in the energy performance of commercial buildings by providing access to and implementing the NABERSNZ scheme – a system for rating the energy efficiency of existing and new office buildings and identifying opportunities for implementing building energy performance improvements. Assessing and improving the energy performance of commercial office buildings can improve their value and desirability for both investors and prospective tenants and reduce energy costs and associated emissions.

What we expect to deliver in 2022/23

In 2022/23, we expect NABERSNZ to deliver:

- An increase in the number of existing commercial offices that have NABERSNZ ratings.
- Electricity, cost and emissions savings through resulting building energy performance improvements.

Linking productive and low-emissions business programmes to the Electricity and GSMEE levies

Link to Electricity levy

The above business programmes help to achieve electricity efficiency, resulting in demand reduction and downward pressure on wholesale prices.²⁹ Increased electricity efficiency can also result in reduced lines network costs when reducing peak usage, and defer investment in new generation infrastructure, resulting in system-wide benefits for all electricity consumers, including levy payers.³⁰ The move to renewable forms of energy will also inevitably increase the demand for and supply of electricity which will be of benefit to all electricity users as the fixed costs of the electricity system are spread across a larger user base.

Link to GSMEE levy

Inefficient gas use by levy payers can cause emissions to be higher than they need to be. The above business programmes promote the efficient use of gas through boiler tuning, energy system optimisation and equipment upgrades. The programmes will contribute towards lowering costs and creating efficient, more productive and lower-carbon businesses.

As well as increasing efficient gas use, in some situations, there are also economically viable lower-emission alternatives that can avoid the use of gas and its associated emissions. This includes the use of biomass fuels for heating (e.g. wood) where appropriate, and electrically-powered heat pumps to make hot water. Using gas levy funding to facilitate these activities by providing information and funding feasibility studies, helps mitigate the emissions that gas causes, and conserves gas reserves for those activities where there are currently no viable lower-emission alternatives which should have a downward influence on has pricing.

²⁹ Energy Link, Electricity Price Impact of the EECA Levy-funded Electricity Efficiency Programmes: Updated 2015, (October 2015).

³⁰ Concept Consulting Group Limited, What is the case for electricity efficiency initiatives? June 2017.

Government leadership programmes



Why Government leadership?

The transition to a low-emissions economy calls for the Government to have its own house in order when it comes to operating more efficiently. Government agencies must now both demonstrate the action required to accelerate the transition and influence New Zealanders to do the same.

This means developing bold policies, modelling clean and clever energy use, and sharing low-emissions lessons. For example, Government agencies own over 16,000 vehicles – many of which are fossil-fuelled and will eventually supply the second-hand market – and many public hospitals, universities and schools still use fossil-fuels for heating. The Government has provided significant additional funding to accelerate the State Sectors move to renewable forms of energy and so the only areas where levy funding is being utilised is for Local Authorities who do not qualify for access to the State Sector Decarbonisation funding support.

Local Authorities Programme

What are we aiming to achieve

We facilitate access to tailored advice and services and co-funding for local government authorities (i.e. regional, city and district councils) across New Zealand to help them identify and implement opportunities to reduce energy use and related emissions. This reduces energy-related costs for the organisation, moves the public sector forward on the energy transition journey and helps build capability in the sector. It also creates public benefits, primarily in the form of reduced energy use and carbon emissions. For more information, please visit: <u>eeca.govt.nz/co-funding/energy-and-carbon-reduction</u>.

What we expect to deliver in 2022/23

We expect to provide advice and co-fund energy audits, energy graduates, energy management plans, energy systems optimisation, feasibility studies and business cases, and monitoring and targeting for local authorities.

Linking Government leadership programmes to the Electricity and GSMEE levies

Link to Electricity levy

The Local Authorities Programme helps to achieve electricity efficiency, resulting in demand reduction and downward pressure on wholesale prices.³¹ Increased electricity efficiency can also result in reduced lines

³¹ Energy Link, *Electricity Price Impact of the EECA Levy-funded Electricity Efficiency Programmes*: Updated 2015, (October 2015).

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network costs when reducing peak usage, and defer investment in new generation infrastructure, resulting in system-wide benefits for all electricity consumers, including levy payers.³²

Link to GSMEE levy

Inefficient gas use by levy payers can cause emissions to be higher than they need to be. The above Local Authorities programme promotes the efficient use of gas through boiler tuning, energy system optimisation and equipment upgrades. The programme will contribute towards lowering costs and creating efficient, more productive and lower-carbon local authorities.

As well as increasing efficient gas use, in some situations, there are also economically viable lower-emission alternatives that can avoid the use of gas and its associated emissions. This includes the use of biomass fuels for heating (e.g. wood) where appropriate, and electrically-powered heat pumps to make hot water and heat swimming pools. Using gas levy funding to facilitate these activities by providing information and funding feasibility studies, helps mitigate the emissions that gas causes, and conserves gas reserves for those activities where there are no viable lower-emission alternatives.

³² Concept Consulting Group Ltd, What is the case for electricity efficiency initiatives? June 2017.

EECA's proposed 2022/23 work programme										
	Total fully allocated costs per project	Funding committed not yet expensed 1/7/22	Funding committed not yet expensed 30/6/23	Funding used in 2022/23	Petroleum Levy Activities	Electricity and Gas Levy Activities	EECA only (includes Coal and Diesel)			
Productive and low-emissions business										
Equipment Energy Efficiency Programme - Business	1,804,915			1,804,915		1,804,915				
Information & Promotion to Business 🗸	1,921,111			1,921,111			1,921,111			
Large Energy Users - Direct	5,384,611	(3,538,000)	3,538,000	5,384,611		2,692,306	2,692,306			
Technology Demonstration Programme 🗸	2,686,809	(1,764,000)	1,764,000	2,686,809		2,686,809				
Industry Development 🗸	596,170	(140,000)	140,000	596,170		178,851	417,319			
NABERSNZ 🗸	337,450			337,450		269,960	67,490			
Large Energy Users - Indirect 🗸 🗸	235,026	(139,000)		96,026			96,026			
Government Investment in Decarbonising Industry	35,780,598			35,780,598			35,780,598			
Sector Decarbonisation Programme 🗸	2,099,779	(337,000)	337,000	2,099,779		1,679,823	419,956			
1	50,846,469			50,707,469						
Efficient and low-emissions transport										
Hydrogen Refueling Network	10,000			10,000			10,000			
Transport Strategy & Development	786,701			786,701			786,701			
Vehicle Fuel Economy Labelling	315,790			315,790			315,790			
Low Emission Transport Fund 🗸	16,944,686	(10,897,000)	13,637,000	19,684,686	19,684,686					
Low Emissions Transport Behaviour Change Programme 🗸	1,641,257			1,641,257	1,641,257					
	19,698,434			22,438,434						
Energy efficient homes										
Equipment Energy Efficiency Programme - Residential 🗸	1,804,915			1,804,915		1,804,915				
In-Home Efficiency	315,084			315,084			315,084			
Warmer Kiwi Homes	72,075,377			72,075,377			72,075,377			
	74,195,376			74,195,376						
Government leadership										
Public Sector/Crown Loans	430,044	(381,000)		49,044			49,044			
Local Authorities 🗸	630,488	(742,950)	742,950	630,488		567,439	63,049			
State Sector Decarbonisation Fund	4,385,021	(650,000)	650,000	4,385,021			4,385,021			
Carbon Neutral Government Programme	11,252,172	(4,816,000)	4,816,000	11,252,172			11,252,172			
Influencing Strategy	1,342,783			1,342,783			1,342,783			
	18,040,508			17,659,508						
Engage heart and minds										
Hearts and Minds	5,620,214			5,620,214			5,620,214			
	5,620,214			5,620,214						
Total 22/23	168,401,000	(23,404,950)	25,624,950	170,621,000	21,325,943	11,685,017	137,610,040			

Appendix 1: Our proposed 2022/23 work programme and forecasted budget







= levy-related activity

EECA's 2021/22 work programme											(as per 20/21 Forecast)			(as j	per 21/22 Fore	ecast)	Total Cost v	with Mvt in Co included	mmitments	Levy fundin	gallocated Pro for PEFML)	-Rata (except
											C	ommitments b/	/f	c	commitments of	:/f						
			Electri Levy	icity Industry y activities	GSMEE	Levy activities	PEFM L	evy activities	Non-	Levy related	Electricity Industry Levy	GSMEE Levy activities	PEFM Levy activities	Electricity Industry Levy	GSMEE Levy activities	PEFM Levy activities	Electricity Industry Levy	GSMEE Levy activities	PEFM Levy activities	Electricity Industry Levy	GSMEE Levy activities	PEFM Levy activities
	To all pe	otal fully located cost er project	%	\$	%	\$	96	\$	%	\$							s	\$	\$	\$	s	\$
Productive and low-emissions business																						
Standards and Regulations	\checkmark	1,935,411	92%	1,780,578	8%	154,833			0%	(0)							1,780,578	154,833	0	1,560,478	135,395	0
Information & Promotion to Business		1,250,141							100%	1,250,141							0	0	0	0	0	0
Large Energy Users - Direct	√	1,346,529	23%	309,702	34%	457,820			43%	579,007	(277,225)	(409,811)		277,225	409,811		309,702	457,820	0	271,419	400,344	0
Technology Demonstrations	/	1,877,082	21%	394,187	2%	37,542			77%	1,445,353	(454,080)	(43,246)		454,080	43,246		394,187	37,542	0	345,461	32,829	0
Industry Development		633,284	20%	246 200	10%	63,328			70%	943,299	(18,230)	(9,115)		18,230	9,115		246 200	63,328	0	303.406	55,378	0
Energy Transition Accelerator (FTA)	×	1 401 449	24%	336 348	16%	224 232			60%	840 869	(128 328)	(85 552)		128 328	85 552		336 348	224 232	0	294 771	196.081	0
Large Energy Users - Indirect	V	984,310	76%	748.076	17%	167,333			7%	68,902	(601.553)	(134,558)		601.553	134,558		748.076	167,333	0	655,605	146.325	0
Process Heat Decarb Fund		994,024				,			100%	994,024								, , , , , , , , , , , , , , , , , , , ,				
		10.854.980		4.041.747	1	1.105.087		0	, ,	5,708,146							4.041.747	1.105.087	0	3,542,14	966.352	0
Efficient and low-emissions transport				_ · ·	1																-	
Transport Strategy & Development		241,336							100%	241,336							0	0	0	0	0	0
VFEL		470,360							100%	470,360							0	0	0	0	0	0
Low Emission Vehicles - CF	✓	7,733,484					100%	7,733,484	0%	0			(7,779,702))		7,779,702	0	0	7,733,484	0	0	6,764,377
Low Emission Vehicles - IC	✓ L	841,013					100%	841,013	0%	0							0	0	841,013	0	0	735,623
		9,286,193		0		0		8,574,497		711,696							0	0	8,574,497	0	0	7,500,000
Energy efficient homes					1																	
Standards and Regulations	✓	1,935,410	92%	1,780,577	8%	154,833			0%	(0)							1,780,577	154,833	0	1,560,477	135,395	0
In-Home Efficiency		209,505							100%	209,505										0	0	
Warmer Kiwi Homes		39,264,272					4		100%	39,264,272							0	0	0	0	0	0
		41,409,187		1,780,577		154,833		0		39,473,777							1,780,577	154,833	0	1,560,477	135,395	0
Government leadership																						
State Sector Decarbonisation		3,790,497	0%	0	0%	0			100%	3,790,497	((0	0	0	0	0	0
Local Authorities	✓	755,719	60%	453,431	30%	226,716			10%	75,572	(307,170)	(153,585)		307,170	153,585		453,431	226,716		397,382	198,253	
Influencing Strategy		1,128,550		452.424		226 746	1		100%	1,128,550							452.424	226 716	0	207.202	100.050	0
		5,674,766		453,431		226,/16		0	-	4,994,619							453,431	226,/16	0	397,382	198,253	0
Engage heart and minds		C 435 974							4000	6 435 974												
Hearts and Minds	-	6,135,874			1		{		100%	6,135,874										0	0	
	- -	6,135,874		0		0	-	0	-	6,135,874							0	0	0	0	0	0
	-						-		{													
Total to be expensed in 21/22		73,361,000		6,275,755		1,486,636		8,574,497	4	57,024,111	(1,786,586)	(835,867)	(7,779,702)	1,786,586	835,867	7,779,702	6,275,755	1,486,636	8,574,497	5,500,000	1,300,000	7,500,000
Less Levy expenditure related to commitments made and funded in prior years				1,786,586		835,867		7,779,702														
21/22 Levy activities expensed in year				4,489,169		650,769		794,795														
Add: 21/22 Levy activities contractually committed in year but not expensed in year (funding held in retained earnings)			1,786,586		835,867		7,779,702														
Total cost of 21/22 Levy related activities				6,275,755		1,486,636	1	8,574,497														
2021/22 Funding breakdown																						
Levy Appropriations				5,500,000		1,300,000		7,500,000														
EECA Baseline Appropriation				775,755		186,636		1,074,497														
				6,275,755		1,486,636	1	8,574,497	1													
						_	-															

Appendix 2: Our proposed 2021/22 work programme and budget (consulted on in November 2020)

TE TARI TIAKI PŪNGAO ENERGY EFFICIENCY & CONSERVATION AUTHORITY

Key:

= levy-related activity

Appendix 3: Notes on our financial projections for our 2021/22 and 2022/23 work programmes

The tables in Appendices 1 and 2 (above) outline the financial projections for our 2021/22 and 2022/23 work programmes. When reviewing them, it is important to understand that:

- The expenses incurred by EECA in any given year are a mix of the operating costs of our activities and our co-investment with partners in pursuit of government objectives.
- EECA enters into agreements with partners that frequently span multiple financial years. An example of this is the LETF.³³

Commitments delivered on and expended in the current financial year are shown as expenses in the Statement of Comprehensive Revenue and Expenses for the year. Outstanding co-investment commitments are shown as committed funds in retained earnings in EECA's Statement of Financial Position (see our 2020/21 Annual Report³⁴).

The financial tables in Appendix 1 and 2 state the commitments brought forward for programmes that include co-investment in multi-year projects and the expected funding to be expended in future financial years.

1. Cost allocation

Direct costs are those costs directly attributable to specific programme activity, and include items such as:

- The co-funding provided by EECA.
- The directly attributable marketing costs of the programme activity.
- Outsourced services to help deliver the programme.
- The personnel costs associated with delivery of the programme.

Indirect costs are costs which cannot be attributable to a specific programme and are distributed across the entire portfolio. Indirect costs are allocated to projects using cost drivers that are appropriate to the costs being allocated. Indirect costs include human resources, finance, information communication technology and property costs. These are predominantly a function of the number of people employed, and consequently, are attributed in proportion to the staff allocated to each programme. Indirect costs comprise approximately one third of the fully allocated cost of each programme.

2. Calculation of total levy costs expensed in the year

Once the fully allocated work programme has been determined, the levy-related percentages is applied to each levy-funded programme, giving the total proposed levy funding.

³³ Formerly the Low Emission Vehicles Contestable Fund.

³⁴ To be published on our website eeca.govt.nz before 31 December 2021.

Appendix 4: Legal context for this consultation

Electricity Industry Act 2010

Section 129A of the Electricity Industry Act 2010 requires EECA to consult with those industry participants who are liable to pay a levy and any other representatives of persons whom EECA believes to be significantly affected by a levy:

129A Energy Efficiency and Conservation Authority consultation about request for appropriation

(1) The EECA must, before submitting a request to the Minister seeking an appropriation of public money for the following year, or any change to an appropriation for the current year, that relates to costs that are intended to be recovered by way of levies under section 128(3)(c), consult about that request with:

(a) those industry participants who are liable to pay a levy under that section; and

(b) any other representatives of persons whom the EECA believes to be significantly affected by a levy.

(2) The EECA must, at the time when the request is submitted, report to the Minister on the outcome of that consultation.

(3) This section applies to requests in respect of the financial year beginning 1 July 2018 and later financial years.

Energy (Fuels, Levies, and References) Act 1989

The Energy Innovation (Electric Vehicles and Other Matters) Amendment Act 2017 inserts section 14A into the Energy (Fuels, Levies, and References) Act 1989, which requires EECA to consult with those industry participants who are liable to pay a levy and any other representatives of persons whom EECA believes to be significantly affected by a levy:

14A Energy Efficiency and Conservation Authority consultation about request for appropriation

(1) The EECA must, before submitting a request to the Minister seeking an appropriation of public money for the following year, or any change to an appropriation for the current year, that relates to costs that are intended to be recovered by way of a levy under section 23 or 24, consult about that request with:

(a) those persons who are liable to pay the levy; and

(b) any other representatives of persons whom the EECA believes to be significantly affected by the levy.

(2) The EECA must, at the time when the request is submitted, report to the Minister on the outcome of that consultation.



Appendix 5: 2020/21 Annual Report on EECA's levy-funded activities



Executive Summary

EECA's purpose is to *mobilise New Zealanders to be world leaders in clean and clever energy use*. With nearly 42% of New Zealand's greenhouse gas emissions currently coming from the energy sector, we play an important role in supporting the transition to a low-emissions and climate-resistant economy, while also improving our energy productivity. We work to create positive change across the energy system, using a combination of three important levers: co-investment, motivation, and regulation. We select the most effective intervention (or combination) depending on factors like existing barriers and market maturity.

This report describes EECA's levy-funded activities in 2020/21 (including the final budget) and the benefits these programmes delivered. For further information on EECA's activities during the year and the delivered benefits, will be included in the 2020/21 Annual Report which will be available in late December 2021 (due to delays in having the document audited resulting from a shortage of Auditors in New Zealand).³⁵

Co-investing in energy-efficient technologies and renewable sources of energy

We help overcome financial barriers by sharing some of the financial risk of investment in innovative technologies and renewable sources of energy, with the aim that once proven, the use of these technologies can be replicated elsewhere.

Technology developments are increasingly important and some of the biggest opportunities are in low carbon solutions for process heat and transport. To accelerate the conversion of New Zealand's light vehicle fleet to low-emissions vehicles, we delivered two more rounds of our LEVCF in 2020/21, committing co-funding of \$6.26 million to innovative projects, with all applicants providing at least 50% of project costs. Note this fund has morphed into the LETF in 2021/22 with a broader scope and additional funding committed by the Government.

We also continued our work with the largest energy using businesses in our economy that collectively use over a quarter of New Zealand's total energy. These ongoing partnerships are fundamental to EECA and we extend our appreciation to all collaboration partners. In 2020/21, our electricity and gas levy-funded business programmes contributed to savings of 0.38 PJ of energy and approximately 94,450 tonnes of CO_2e emissions.

Motivating New Zealanders to make clean and clever energy choices

One of the greatest problems we face in the transition to a low-emission economy is how best to communicate and encourage viable actions when there is so much 'noise' surrounding the issue. Our research shows that while New Zealanders believe climate change is an issue, there are too many people and businesses not acting. There is a critical need to link beliefs and action. EECA's Gen Less campaign seeks to bridge this gap and motivate people to make clean and clever energy choices and climate-positive action.

In 2020/21 we continued to develop and communicate credible information to inform the public on the benefits of electric vehicles and it is encouraging to see the continuing increase of registered electric vehicles in New Zealand, especially since the implementation of the Government's Clean Car Package.

Regulating inefficient appliances out of the market

We regulate proven technologies and processes and help prevent inefficient products and appliances from being sold in New Zealand. The E3 programme continued to deliver significant electricity savings of 1.28 PJ in 2020/21 through product energy performance standards and labelling. This is EECA's most successful programme and is the "hidden friend" of electricity users throughout the economy.

Looking ahead

With our clear strategy and refreshed strategy implementation priorities in our Statement of Intent 2021-2025, we are on a journey to deliver even greater benefits for current and future generations. We appreciate the feedback we receive each year on our levy-funded activities and are currently seeking submissions on our energy-levy funding proposal for our 2022/23 work programme. We look forward to hearing from industry participants and other parties affected by the energy levies.

³⁵ To be published on our website before 31 December 2021 at eeca.govt.nz/about/news-and-corporate/corporate-documents

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Introducing EECA

EECA is a Crown entity established under the EECA Act, to encourage, promote and support energy efficiency, energy conservation and the use of renewable sources of energy.

Our purpose is to mobilise New Zealanders to be world leaders in clean and clever energy use.

EECA encourages the use of clean and clever energy across the economy, through a combination of direct interventions, such as co-investment and regulation. EECA also seeks to motivate people by providing information, raising awareness and offering expert advice so they are better equipped to make sustainable energy choices.

EECA is partially funded by three energy levies

EECA is funded by the Crown through appropriations of public money. The Crown recovers a portion of this funding through three energy levies: the PEFM levy, the Electricity levy and the GSMEE levy.

Under the Energy Innovation (Electric Vehicles and Other Matters) Amendment Act 2017, EECA can use funding from these levies to fulfil our statutory function.

In November 2019, EECA carried out a consultation process to ask stakeholders and the public for their views about the use of the three levies for its proposed 2020/21 programme of work. EECA received ten submissions, with one submission from the Major Electricity Users' Group (**MEUG**) opposing EECA's request. In response to a request from MEUG during the 2019/20 consultation process, EECA now publicly discloses the financial and industry support committed to project partners under our Large Energy Users programme, Technology Demonstration programme and the Low Emission Vehicles Contestable Fund.

Following consultation, the Minister of Energy and Resources allocated a total of \$14.3 million in levy funding:

- \$7.5 million from the PEFM levy.
- \$5.5 million from the Electricity levy.
- \$1.3 million from the GSMEE levy.

Overview of our levy-funded activities in 2020/21

This report describes EECA's levy-funded activities in 2020/21 (including the final budget) and some of the benefits these programmes delivered. For further information on EECA's activities during the year and the delivered benefits, please refer to the 2020/21 Annual Report.³⁶

Expenditure on levy-funded activities

A total of \$14.93 million was spent during the year on activities that are partially funded by levies. Appendix 1 provides a full breakdown of actual expenditure against the programmes delivered in 2020/21.

Appendix 2 provides the proposed work programme and budget for 2020/21 that was released for consultation in November 2019. It shows the amount funded from each levy and from EECA's baseline funding.

³⁶ To be published on our website eeca.govt.nz before 31 December 2021.

Electricity Levy and Gas Safety, Monitoring and Energy Efficiency (GSMEE) Levy

In 2020/21, the Electricity levy and GSMEE levy funding was used to deliver the following programmes in the business and residential sectors:

EECA programme	Electricity levy funding	GSMEE levy funding
E3 (commercial and industrial products)	\checkmark	\checkmark
E3 (residential products)	\checkmark	\checkmark
Large energy users – direct	\checkmark	\checkmark
Large energy users – indirect	\checkmark	\checkmark
Technology demonstration	\checkmark	\checkmark
Energy Transition Accelerator	\checkmark	\checkmark
Industry development	\checkmark	\checkmark
NABERSNZ	\checkmark	×
LED pilot	\checkmark	×
Public Sector (run out of old programme)	\checkmark	\checkmark
Local authorities	\checkmark	\checkmark

These programmes have been assessed as having a high impact across the market in terms of supporting the uptake of new emerging technologies, energy efficiency, promoting the use of renewables, and addressing and planning for emissions reductions.

Equipment Energy Efficiency (E3) Programme

EECA collaborated with the Australian Department of Environment and Energy on the E3 Programme. The programme works to make residential, commercial and industrial products more energy efficient, through the implementation of MEPS and MEPL. This involves developing standards, developing regulations, compliance and enforcement, partner engagement, and marketing to consumers. Activity in this area also includes developing *Publicly Available Specifications* which provide best practice guidance for technologies.

In 2020/21, EECA continued to implement existing MEPS and develop new MEPS for products and appliances that are sold in New Zealand and monitored compliance against those standards (including surveying 269 retail stores and check testing 81 products). As a consequence of our compliance activities, we prosecuted an electric water heater (hot water cylinder) manufacturer this year. This was the first time we have prosecuted in ten years. By not allowing inefficient appliances onto New Zealand's shop floors, and by adding energy performance labels to those that were already there, EECA helped consumers make choices that reduced ongoing electricity bills. We also developed and published *Publicly Available Specifications* for high temperature heat pumps, biomass boilers, commercial electric vehicle chargers and residential electric vehicle chargers.

The E3 programme saved 1.28 PJ of energy and 39,000 tonnes CO_2e in 2020/21. Over the past two decades, the programme has resulted in a national benefit of \$1.7 billion, 70.0 PJ of energy savings, and 2.7 Mt CO_2e of emissions reductions.

Large Energy Users Programme

EECA has a range of programmes that increase awareness in businesses and reduce the barriers to electricity efficiency improvements and carbon emission reductions. In 2020/21, EECA partnered with businesses that use over a quarter of the energy used in New Zealand.

Over the past year, EECA has been seeing the results of an increased focus on helping the business and public sectors to not only become more energy efficient, but to also switch to cleaner forms of energy and reduce emissions. In 2020/21, we provided funding for Large Energy Users programme projects that we forecast will achieve lifetime savings of 0.37 PJ and 21,319 tCO₂e. Note actual savings reported in 2020/21 (related to funding provided in previous years) for our business programme partners totalled 0.28 PJ and 8,105 tCO₂e annually.

One of EECA's key programmes for promoting energy efficiency is the Energy Graduate programme, which provides co-funding helps businesses commit the time and resource needed to analyse how energy is being used and the best ways to make savings. The programme has grown considerably in the past year with 16 new graduates employed across New Zealand in both the private and public sectors (whose efforts will save a minimum of 2 GWh each over the next two years, totalling 32GWh).

Details of our business co-funding and support programmes can be found on our website: <u>eeca.govt.nz/co-funding</u>.

Technology Demonstrations Programme

EECA continued to encourage businesses to adopt proven energy efficient technologies that are underutilised in New Zealand by providing co-investment through our technology demonstration programme. In 2020/21, we paid out over \$350,000 for completed technology demonstration project milestones and recorded actual total project savings of 0.10 PJ and 86,347 tCO₂e. We also committed to co-funding to technology demonstration projects which are expected to deliver lifetime savings of 0.17 PJ and 5,938 tCO₂e.

Two key supported projects were completed and commissioned during 2020/21:

- The Fonterra Te Awamutu conversion of a 43 MW coal boiler to wood pellets. The conversion project removed 100% of the coal used on site, saving over 84,000 tonnes of CO₂e per year.
- The 13 MW electrode boiler installation at Open Country Dairy's factory in Invercargill. The electrode boiler is in place of a new 15 ME coal boiler required to support the new third milk dryer installed at the site. The electrode boiler will be used as a peaking boiler in the peak milk season thus making it economic to use despite the higher priced electricity compared to coal. The electrode boiler will reduce close to 10,000 tonnes of CO₂e per year.

This year also saw four technologies we have previously supported adopted within a different sector, at a different scale or a different location (high temperature heat pumps, electrode boilers, biomass pellet conversion and biomass top loaders).

Energy Transition Accelerator

EECA continued to work with large energy-using businesses that are committed to reducing their emissions through the Energy Transition Accelerator programme. EECA provides expert assistance to help each business onto a customised long-term pathway to decarbonisation by identifying technically and economically viable low-emissions investments. In 2020/21, we completed 17 Energy Transition Accelerator opportunities assessments (13 business and four public sector organisations) and signed 44 new Energy Transition Accelerator collaboration agreements (37 business and seven public sector organisations).

Industry Development Programme

In 2020/21 we continued to develop and support industry partners and associations that are aligned or work in connection with our purpose and objectives so we can grow the capability and competency of energy sector providers to meet the demand for their skills. This year, we: co-funded the development and pilot of a Carbon Inventory and Reduction Opportunities Course and supported the running of a number of other energy and carbon management training courses with Carbon Energy Professionals (CEP); and supported the delivery of ten Bioenergy Association of New Zealand (BANZ) educational webinars.

NABERSNZ

We delivered ongoing improvements in the energy performance of commercial buildings by providing information to large energy users and implementing the NABERSNZ scheme – a system for rating the energy efficiency of existing and new office buildings and identifying opportunities for implementing building energy performance improvements. Assessing and improving the energy performance of commercial office buildings can improve their value and desirability for both investors and prospective tenants and reduce energy costs and associated emissions. In 2020/21 we continued to see increasing uptake of NABERSNZ rating despite the impacts of COVID-19, and delivered 39 certified re-ratings and 19 new ratings.

LED Pilot

Between 2019 and 2020, we completed a number of LED trials which saw 215,000 LEDs given to 43,000 lowincome households across New Zealand. A range of delivery mechanisms were tested including door knocking, installation through a Warmer Kiwi Homes provider, and partnering with Energy Trusts, a supermarket and national DIY chain. EECA will use the findings to inform any future lighting programmes.

Public Sector Programme

We delivered advice and co-funded energy audits, energy graduates, energy management plans, energy systems optimisation, feasibility studies and business cases, industrial systems design advice, and monitoring and targeting to public sector organisations as the run out of this programme as it has been replaced by the State Sector Decarbonisation fund.

Local Authorities Programme

We delivered advice and co-funded energy audits, energy graduates, energy management plans, energy systems optimisation, feasibility studies and business cases, industrial systems design advice, and monitoring and targeting to local authorities (i.e. regional, city and district councils).



Summary of 2020/21 Electricity levy use and delivered benefits

Given our focus to prioritise our effort to where we can achieve the greatest decarbonisation outcomes for New Zealand, we underspent our Electricity levy-related funding and overspent in our gas-related programmes in 2020/21. This is a trend that we expect will continue in future years. As a result, the underspend amount of \$492,216 has been repaid.

Consulted proposal (November 2019)		Actual allocatio levy-funde	n for Electricity d activities	Savings from combined Electricity and GSMEE levy-funded projects completed in 2020/21 ³⁷					
Programme	2020/21 Electricity levy funding allocation	2020/21 actual Electricity levy funding applied to electricity levy activities	2020/21 funding (underspent)	Energy savings across the programme (annual)	Emissions savings across the programme (annual)				
E3 (commercial and industrial products)	1,225,707	1,622,400		0.56 PJ	17,000 tCO ₂ e				
E3 (residential products)	1,225,706	1,622,399		0.72 PJ	22,000 tCO ₂ e				
Large energy users – direct	947,333	394,784		0.15 PJ	1,650 tCO ₂ e				
Large energy users – indirect	518,867	252,703		0.13 PJ	6,455 tCO2e				
Technology demonstration	333,184	16,104		0.10 PJ	86,347 tCO ₂ e				
Energy Transition Accelerator	578,061	115,520		-	-				
Industry development	-	4,388		-	-				
NABERSNZ	-	310,291		-	-				
LED pilot	-	166,154		-	-				
Public Sector	671,142	(77,296)		0.02 PJ	837 tCO2e				
Local authorities	-	580,337		0.02 PJ	971 tCO2e				
Total	5,500,000	5,007,784	(492,216)	1.7 PJ	136,260 tCO ₂ e				

Note on Large energy users and Technology demonstrations: Due to the multi-year nature of many of the programmes, with large projects spanning multiple years with staged payments, a number of the projects will have milestone commitments for some time in out-years. This is why energy savings from completed projects far exceed proposed savings per annum in some instances.

³⁷ A number of projects involved the switching of fuel from gas to electricity. As a result, the energy and emissions savings expressed at an individual levy level are not that informative and so we have combined the savings to give a more meaningful insight.



Summary of 2020/21 GSMEE levy use and delivered benefits

Consulted proposal (November 2019)		Actual allocation for activ	GSMEE levy-funded ⁄ities	Savings from combined Electricity and GSMEE levy-funded projects completed in 2020/21 ³⁸					
Programme	2020/21 GSMEE levy funding allocation	2020/21 actual GSMEE levy funding applied to GSMEE levy activities	2020/21 funding overspent	Energy savings across the programme (annual)	Emissions savings across the programme (annual)				
E3 (commercial and industrial products)	144,486	180,267		0.56 PJ	17,000 tCO ₂ e				
E3 (residential products)	144,486	180,267		0.72 PJ	22,000 tCO2e				
Large energy users – direct	420,289	853,616		0.15 PJ	1,650 tCO2e				
Large energy users - indirect	301,450	118,768		0.13 PJ	6,455 tCO ₂ e				
Technology demonstration	54,201	12,778		0.10 PJ	86,347 tCO2e				
Energy Transition Accelerator	235,088	738,714		-	-				
Industry development	_	18,777		-	-				
Public Sector / Crown loans	_	54,764		0.02 PJ	837 tCO2e				
Local authorities	_	87,453		0.02 PJ	971 tCO2e				
Total	1,300,000	2,245,404	945,404	1.7 PJ	136,260 tCO2e				

Note on Large energy users and Technology demonstrations: Due to the multi-year nature of many of the programmes, with large projects spanning multiple years with staged payments, a number of the projects will have milestone commitments for some time in out-years. This is why energy savings from completed projects far exceed proposed savings per annum in some instances.

³⁸ A number of projects involved the switching of fuel from gas to electricity. As a result, the energy and emissions savings expressed at an individual levy level are not that informative and so we have combined the savings to give a more meaningful insight.

Petroleum or Engine Fuels Monitoring Levy

We want New Zealanders to have their transport needs met using significantly less, and cleaner energy. This involves the fleet becoming more energy and emissions efficient.

Electric vehicles in New Zealand have reached 27,000 registered as of 30 June 2021.³⁹ EECA's work on electric vehicles sits within a cross-government package of measures to accelerate the uptake of electric vehicles.

In 2020/21, the PEFM Levy funding was used to deliver two key programmes:

- Low Emission Vehicles Contestable Fund (LEVCF)
- Electric Vehicle Information Campaign

Low Emission Vehicles Contestable Fund

In 2020/21, we continued to support early and innovative investment in low-emission vehicles and associated infrastructure. We committed to co-invest \$6.26 million in projects through the LEVCF and saw multi-year projects advance such that they met the criteria to draw on \$7.1 million in co-investment.

A notable achievement from 2020/21 was delivering Everybody Eats Charitable Trust's electric van project. Everybody Eats runs as a koha⁴⁰ dining concept for people in Auckland and Wellington. The Trust uses its van rescues food that would otherwise be sent to the landfill and repurposes it to create meals prepared by trained chefs and kitchen staff. The LEVCF assisted the Trust in replacing its petrol delivery van with an electric van and its own charger, which has helped them reduce the emissions associated with the

During the year, the LEVCF continued to support the expansion of New Zealand's charging infrastructure, with a particular emphasis on key tourist routes and destinations. During 2020/21, the number of co-funded electric vehicle chargers nationwide surpassed 1,200 (including 660 public chargers) with over 750 in operation.

A full list of projects funded to date is available on our website: <u>eeca.govt.nz/co-funding/transport-emission-reduction/co-funded-transport-projects</u>.

Electric Vehicle Information Campaign

EECA worked to help more New Zealanders choose a low-emissions vehicle over a fossil fuelled vehicle. EECA continued to develop and provide independent and authoritative information that dispelled myths and motivated people to improve their transport choices. Key outputs from the campaign in 2020/21 include:

- An electric vehicle (EV) advertising campaign to consumers and businesses via various channels to overcome barriers and emphasise motivations to purchase
- Publication of EV information on the refreshed Gen Less website
- Sponsorship of EV rally driver Hayden Paddon to promote EVs and overcome barriers
- Development and promotion of EV messaging and content via social media, including case studies and videos of organisations and people who are leading the way
- Distribution of the EV Buyers Guide
- Research on motivations, barriers and attitudes towards buying an EV and on EV smart charging
- Engaging cross-Government on marketing activity with shared relevance
- Implementation of recommendations from the 2019/20 programme evaluation

³⁹ transport.govt.nz/statistics-and-insights/fleet-statistics/sheet/monthly-ev-statistics (battery electric and plug- in hybrid vehicle data)

 $^{^{\}rm 40}$ A Māori custom which can be translated as gift, present, offering, donation or contribution



Summary of 2020/21 PEFM levy use and delivered benefits

Consulted proposal (November 2019)		Actual allocat levy-funde	ion for PEFM d activities	Outputs from PEFM levy-funded projects completed in 2020/21				
Programme	2020/21 PEFM levy funding allocation	2020/21 actual PEFM levy funding applied to PEFM levy activities	2020/21 funding overspent	Delivered outputs				
Low Emission Vehicles Contestable Fund	6,071,540	6,727,097		85% of completed Low Emission Vehicles Contestable Fund projects delivered intended outcomes this year (17 out of 20) ⁴¹				
Electric Vehicle Information Campaign	1,428,460	952,299		 35% of people say they are likely to consider an electric vehicle as their next car purchase 43% of businesses/fleet operators say they are likely to consider a low-emissions vehicle as their next car purchase⁴² 				
Total	7,500,000	7,679,396	179,396					

Note: The above figures include overhead costs.

⁴¹ The LEVCF existed to support demonstration projects. While we do everything possible to support recipients to deliver intended project outcomes, demonstration projects have associated risks so it is inevitable there will be some degree of failure in delivering these outcomes. Additionally, at least one project did not deliver intended outcomes this year due to shifting business priorities in response to COVID-19 pandemic.

⁴² This percentage has been impacted by shifting business priorities in response to COVID-19 pandemic.



Appendix 1: Our 2020/21 work programme and associated actual expenditure

EECA's 2020/21 work programme - actuals										(as pe	er 19/20 Actu	uals)				Total Cost with	Myt in Commitr	nents included	Levy funding a	allocated Pro-Ra PEFML)	ta (except for
										Cor	mmitments b	/f	Co	mmitments c	/f					,	
		Electricit	ty Industry Levy ctivities	GSMEE L	Levy activities	PEFM L	.evy activities	Non-Lev	y related activities	Electricity Industry Levy activities	GSMEE Levy activities	PEFM Levy activities	Electricity Industry Levy activities	GSMEE Levy activities	PEFM Levy activities	Electricity Industry Levy activities	GSMEE Levy activities	PEFM Levy activities	Electricity Industry Levy activities	GSMEE Levy activities	PEFM Levy activities
	Total fully allocated cost per project	%	\$	%	\$	%	\$	%	\$							\$	\$	\$	\$	\$	s
Productive and low-emissions business																					
Standards and Regulations	1,802,667	90%	1,622,400	10%	180,267			0%	0							1,622,400	180,267	0	1,622,400	104,367	0
Business Marketing & Communications	1,350,577	25%	200.144	2.104	520 640			100%	1,350,577	(212.205)	(542.207)		210.025	075 264		0	0	0	0	0	0
Tachaology Demonstrations	1,551,522	20%	257 020	4%	520,645			65%	750 497	(515,565)	(342,337)		177 124	0/5,504		16 104	12 770	0	15 104	494,210	0
Industry Development	426 959	0%	557,525	2%	90,104			98%	418 420	(518,545)	(45,240)		4 299	10 228		4 299	12,775	0	4 299	10 871	0
NABERSNZ	387,864	80%	310 291	0%	0,555			20%	77 573	- v			4,500	10,250		310 291	10,777	0	310 291	10,0/1	0
Energy Transition Accelerator (ETA)	1.104.773	9%	99,430	46%	508 196			45%	497,147	(122.981)	(85,552)		139.071	316.070		115,520	738,714	0	115.520	427.686	0
Large Energy Users - Indirect	799,751	63%	503.843	26%	207.935			11%	87.973	(530,317)	(174.134)		279.177	84,967		252.703	118,768	0	252,703	68,762	0
Government Investment in Decarbonising Industry	1,157,663		0		0			100%	1,157,663		(0	0	0	0	0	0
	9,716,186		3,292,037	1]	1,471,770		0	1	4,952,379							2,716,190	1,922,920	0	2,716,190	1,113,294	0
Efficient and low-emissions transport																					
Hydrogen Refueling Network	449,781							100%	449,781							0	0	0	0	0	0
Electric and Hybrid Ferries	236,180							100%	236,180							0	0	0	0	0	0
Transport Strategy & Development	488,209							100%	488,209							0	0	0	0	0	0
VFEL	438,339	1						100%	438,339							0	0	0	0	0	0
Low Emission Vehicles - CF V	8,244,744					100%	8,244,744	0%	0			(7,779,702)			6,262,055	0	0	6,727,097	0	0	6,569,947
Transport Marketing & Communications	952,299			-		100%	952,299	0%	0							0	0	952,299	0	0	930,053
Enormy officient homos	10,809,552			1 1	0		9,197,043		1,612,509								0	7,675,356	0	0	7,500,000
Standards and Regulations	1 802 666	90%	1 622 299	10%	180 267			0%	0							1 622 299	180 267	0	1 622 299	104 267	0
In-Home Efficiency	480,999	2010	1,022,555	1070	100,207			100%	480 999							1,022,555	100,207	0	1,022,555	104,507	0
Northland Housing Energy Retrofit Pilot	58,916							100%	58,916							0	0	0	0	0	0
Otago Housing Energy Retrofit Pilot	16,317							100%	16.317							0	0	0	0	0	0
Warmer Kiwi Homes	104,306,020							100%	104.306.020							0	0	0	0	0	0
LED Pilot 🗸	295,419	100%	295.419			1		0%	0	(129,265)						166.154	0	0	166.154	0	0
	106,960,337	1	1,917,818	1]	180,267		0	1	104,862,252							1,788,553	180,267	0	1,788,553	104,367	0
Government leadership																					
Public Sector/Crown Loans	547,465	30%	164,240	20%	109,493			50%	273,732	(699,846)	(210,088)		458,310	155,359		(77,296)	54,764	0	(77,296)	31,706	0
Cross Government Collaboration	1,179,422							100%	1,179,422							0	0	0	0	0	0
Local Authorities	381,071	76%	289,614	21%	80,025			3%	11,432	(274,402)	(77,998)		565,125	85,426		580,337	87,453	0	580,337	50,633	0
State Sector Decarbonisation Fund	1,077,438							100%	1,077,438							0	0	0	0	0	0
Thermal Drying Facility	3,435,690	1						100%	3,435,690							0	0	0	0	0	0
District Heating System	97,529			-				100%	97,529							0	0	0	0	0	0
Engraph heart and minds	6,/18,615		453,854	1 1	189,518		U	1	6,075,243							503,041	142,217	0	503,041	82,339	U
Hearts and Minds	5 963 957							100%	5 962 957										0	0	
	5,963,957	1	0	1 -	0	- I	0	1	5,963,957							0	0	0	0	0	0
1		1 1		1 🗆		1 1		1													
Total expensed in 20/21	140,168,647	1	5,663,709		1,841,555	1	9,197,043	1	123,466,340	(2,589,145)	(1,133,415)	(7,779,702)	1,933,220	1,537,264	6,262,055	5,007,784	2,245,404	7,679,396	5,007,784	1,300,000	7,500,000
Less Levy expenditure related to commitments made and			2,589,145		1,133,415		7,779,702]													
funded in prior years			2,024,554		700.440																
20/21 Levy activities expensed in year			3,074,564		708,140		1,417,341														
but not expensed in year (funding held in retained earnings)			1,933,220		1,537,264		6,262,055														
Total cost of 20/21 Levy related activities			5,007,784		2,245,404		7,679,396														
2020/21 Funding breakdown																					
Levy Appropriations			5,500,000		1,300,000		7,500,000														
Unused levy repaid			(492,216)																		
EECA Baseline Appropriation					945,404		179,396														
			5,007,784		2,245,404		7,679,396	-													
								1													

Key:	
	1

= levy-related activity



(as per 19/20 Forecast)

Appendix 2: Our 2020/21 proposed budget, released for consultation in November 2019

FFCA's 2020/21 work

EECA's 2020/21 work programme										Co	mmitments	o/f	c	ommitments	c/f		included		(ex	cept for PEFN	/L)
		Electri	city Inductor	65	MEELON			Non	low related	Electricity	GSMEE	DEEMLON	Electricity	GSMEELOW	PEEMLow	Electricity CSMEE Low PEEM Low			Electricity	GSMEE	DEEM LONG
		Levy	activities	a	ctivities	PEFM L	evy activities	a	ctivities	Industry Levy	Levy activities	activities	Industry Levy	activities	activities	Industry Levy	activities	activities	Industry Levy	Levy activities	activities
	Total fully allocated cost per project	t %	\$	%	\$	%	\$	%	\$							\$	\$	\$	\$	\$	\$
	· ·	r																			
Productive and low-emissions business			4 200 022		150 501											1 700 077	150 501		1 005 707		
Standards and Regulations 🗸	1,884,75	8 92%	1,733,977	8%	150,781			0%	0							1,733,977	150,781	0	1,225,707	144,486	0
Information & Promotion to Business	1,647,21	8						100%	1,647,218							0	0	0	0	0	0
Large Energy Users - Direct	2,891,67	2 55%	1,590,420	18%	520,501			27%	780,751	(967,091)	(316,503)		716,841	234,603		1,340,170	438,601	0	947,333	420,289	0
Technology Demonstrations V	2,723,38	/ 25%	680,847	3%	81,702			/2%	1,960,838	(480,689)	(57,683)		2/1,189	32,543		4/1,34/	56,562	0	333,184	54,201	0
Industry Development	542,53	9 40%	217,016	30%	162,762			30%	162,761	(59,960)	(44,970)		59,960	44,970		217,016	162,762	0		└──── /	0
NABERSNZ	440,08	80%	352,068	0%				20%	88,017	(212.211)	(60.040)					352,068	0	0	570.001		0
Energy Transition Accelerator (ETA)	1,635,53	8 50%	817,769	15%	245,331			35%	572,438	(210,044)	(63,013)		210,044	63,013		817,769	245,331	0	578,061	235,088	0
Large Energy Users - Indirect 🗸 🗸	1,111,61 12,876,81	3 /0% D	6,170,226	30%	333,484 1,494,561		0	0%	0 5,212,023	(235,570)	(100,959)		191,470	82,059		734,029 5,666,376	314,584 1,368,621	0 0	518,867 3,603,152	301,450 1,155,514	0 0
Efficient and low-emissions transport			1																	ļļ	
Transport Strategy & Development	641.46	5						100%	641 466							0	0	0	0	0	0
VFFI	391 13	3						100%	391 133							0	0	0	0	0	0
Low Emission Vehicles - CE	7 616 97	1				100%	7 616 971	0%	0			(7 654 185)			7 612 185	0	0	7 574 971	0	0	6 071 540
Electric Vehicles - IC	1.782.17	5				100%	1,782,175	0%	0			(7,034,103)			7,012,105	0	0	1,782,175	0	0	1,428,460
	10 421 74	-	0			200/0	0,200,140	0,0	1 022 500								<u> </u>	0.257.146			7,500,000
	10,431,74	2	0		0		9,599,140		1,052,599							0	0	9,557,140	0		7,500,000
Energy efficient nomes	1 004 75	0.00/	1 722 076	00/	450 704			00/	0							1 722 076	450 704		4 225 700	144.495	
Standards and Regulations V	1,884,75	/ 92%	1,733,976	8%	150,781			0%	0							1,733,976	150,781	0	1,225,706	144,486	0
Peak Demand Management	/22,26	/						100%	/22,26/							0	0	0	0	0	0
warmer Kiwi Homes	46,075,20	2						100%	46,075,202							0	0	0	0	0	0
	48,682,22	6	1,733,976		150,781		0		46,797,469							1,733,976	150,781	0	1,225,706	144,486	0
Government leadership	1.076.64	720/	1 004 027	20/	44,200			2.40/	220.200	(457.000)	(40.704)		404 500	46 504		040 447	20.010		674 4 42		
Cross Covernment Colleboration	1,376,61	3 73%	1,004,927	3%	41,298			24%	330,388	(457,068)	(18,784)		401,588	16,504		949,447	39,018	0	671,142		0
cross Government Conaboration	2.415.49	2	1.004.927		41.298		0	100%	1,038,879							949.447	39.018	0	671.142	0	0
Engage heart and minds	, , ,		/ /-		,				,,												
Hearts and Minds	3 433 39	h						100%	3 433 390										0	0	1
Community Renewables	309.85	1						100%	309 854										0	0	1
	3,743,24	4	0		0		0	100/0	3,743,244							0	0	0	0	0	0
Total to be expensed in 20/21	78,149,51	7	8,909,129		1,686,640		9,399,146		58,154,602	(2,410,422)	(601,912)	(7,654,185)	1,851,092	473,692	7,612,185	8,349,799	1,558,420	9,357,146	5,500,000	1,300,000	7,500,000
Less Levy expenditure related to commitments made and funded in prior years			2,410,422		601,912		7,654,185														
19/20 Levy activities expensed in year			6,498,707		1,084,728		1,744,961														
Add: 19/20 Levy activities contractually committed in year but not expensed in year (funding held in retained earnings))		1,851,092		473,692		7,612,185														
Total cost of 20/21 Levy related activities			8,349,799		1,558,420		9,357,146														
2020/21 Funding breakdown																					
Levy Appropriations			5,500,000		1,300,000		7,500,000														
EECA Baseline Appropriation			2,849,799		258,420		1,857,146														
			8,349,799		1,558,420		9,357,146														



Total Cost with Mvt in Commitments م ا ، ، ما م

Levy funding allocated Pro-Rata



Glossary of units

	Table One – Energy use measure	ement units and context of scale ⁴³
Unit used in this document	Definition	Example
PJ	Petajoule - the unit most often used to measure energy production and use on a national scale in New Zealand. Energy savings are valued using the marginal cost of electricity supply. One PJ is equivalent to a quadrillion joules (10 ¹⁵).	New Zealand households use a total of 65.71 PJ of energy per year. Split by fuel type: 46.36 PJ - electricity 8.11 PJ - renewables 7.20 PJ - natural gas 3.73 PJ - oil (e.g. petrol and diesel) 0.31 PJ - coal
GWh	Gigawatt hour - a watt hour is a measure of electrical energy equivalent to a power consumption of one watt for one hour. One GWh is equivalent to one billion watt hours, one million kilowatt hours, and 3,600 joules.	Annually, the Manapōuri hydro power station supplies around 4,500 GWh of electricity and New Zealand households use 18,253 GWh of energy (from all fuel types).
kWh	Kilowatt hour - a watt hour is a measure of electrical energy equivalent to a power consumption of one watt for one hour. One kWh is equivalent to one thousand watt hours.	The average New Zealand household uses 9,869 kWh of energy per year.

Table Two – Emissions measurement units and context of scale ³⁰				
Unit used in this document	Definition	Emissions produced by an average New Zealand household	Emissions produced by one light passenger vehicle in New Zealand	Emissions produced by New Zealand's light passenger vehicle fleet
ktCO2e	Kilotonnes of carbon equivalent emissions - a unit used to indicate the global warming potential of greenhouse gases, using carbon dioxide (CO ₂) as a reference gas. One kilotonne of CO ₂ e is equivalent to 1000 tonnes of CO ₂ e.	0.0012 ktCO2e	0.0024 ktCO2e	8,156 ktCO2e
tCO2e	Tonnes of carbon equivalent emissions - a unit used to indicate the global warming potential of greenhouse gases, using carbon dioxide (CO ₂) as a reference gas. One tonne of CO ₂ e is equivalent to 1000 kilograms of CO ₂ e.	1.16 tCO2e	2.43 tCO2e	8,156,212 tCO ₂ e
kgCO ₂ e	Kilograms of carbon equivalent emissions - a unit used to indicate the global warming potential of greenhouse gases, using carbon dioxide (CO ₂) as a reference gas. One kilogram of CO ₂ e is equivalent to 1000 grams of CO ₂ e (gCO ₂ e).	1,155 kgCO2e	2,426 kgCO2e	8,156,212,000 kgCO ₂ e

⁴³ Data sources: Household Estimates by Tenure, Tatauranga Aotearoa Statistics New Zealand (2021); Energy Balance Tables, Hikina Whakatutuki Ministry of Business, Innovation and Employment (2021); Measuring Emissions - A Guide for Organisations, Manatū Mō Te Taiao Ministry for the Environment (2021); internal vehicle fuel consumption data, Te Manatū Waka Ministry of Transport (2021); and Future State Model VKT/vehicle numbers data, Te Manatū Waka Ministry of Transport (2021).