MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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RESEARCH & EVALUATION UNIT

FINAL REPORT

Meta-analysis of the EECA programmes review

Final Report

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Introduction

The Energy Efficiency and Conservation Authority (EECA) is the Crown entity that encourages, promotes, and supports energy efficiency and conservation and the use of renewable sources of energy. In December 2015, the Ministry of Business, Innovation and Employment (MBIE) completed an internal preliminary review of 14 of EECA's programmes. Based on the findings of that preliminary review, the Minister of Energy and Resources directed EECA to work closely with MBIE to review all of its programmes in the 2016/17 financial year, in order to ensure that they remain fit-for-purpose and consistent with changing Government objectives.

This review was governed by a steering group of MBIE and EECA officials, which prioritised 12 EECA programmes for review. All reviews were undertaken by EECA and MBIE and independent reviewers were also contracted to provide an external and independent view. All 12 programmes were reviewed based on the evaluation criteria jointly developed by MBIE and EECA. Individual reports have been produced for each programme review.

MBIE's Research and Evaluation (R&E) Unit was commissioned by MBIE's Energy Markets Policy team to undertake a meta-analysis of EECA's 12 final programme reviews (see Appendix 1) to help inform the future direction of the programmes and to provide an objective view on the review findings.

The evaluation criteria used for the meta-analysis was the same as the one used to review the individual programmes (see Appendix 2). R&E developed a performance rating system (see Appendix 3) to complement the evaluation criteria. This was used to rate each of the 12 programmes.

Overall, the programmes were aligned with strategic priorities but half of the programmes performed poorly. A robust data collection and analysis approach is needed to inform the overall performance of the programmes.

Overall ratings for the 12 EECA programmes	Excellent	Very good	Good	Adequate	Poor	Insufficient Evidence
Has a clear problem definition		●				
Strategically fits with government and EECA objectives		●				
Role for government		●				
Intervention option			●			
Performance of the intervention				●		
Has a clear mandate		●				

Note: See Appendix 3 for definitions of the performance ratings.

The programmes had a clear problem definition.

Each programme had identified a clear problem to be addressed. Overall, the programmes were designed to address market failures and behavioural barriers and deliver public and private sector benefits. Eleven out of the 12 programmes had clearly identified the issues to be addressed (six were rated 'excellent', three were rated 'very good', two were rated 'good' and one was rated as 'adequate').

The programmes fitted strategically well with government's and EECA's objectives when they were developed.

All the programmes fitted strategically well with government's and EECA's objectives when they were developed, especially with the New Zealand Energy Efficiency Conservation Strategy (NZEECS) 2011-2016's and Business Growth Agenda's (BGA) priorities (three were rated 'excellent' and nine were rated 'very good'). However, most of the programmes lacked clarity on how they specifically aligned with the identified government and EECA priorities when they were developed. To this extent, it is worth noting the broadness of priorities expressed in the BGA and NZEECS 2011-2016.

While most of the EECA programmes were aligned with government and EECA objectives and priorities when developed, there is a need to realign the programmes to reflect the new priorities proposed under the draft refreshed NZEECS.

We recommend that:

- the new priorities proposed in the draft refreshed NZEECS are considered in any re-design of the programmes; and
- EECA considers developing an overall EECA Outcomes Framework to help inform key priorities proposed in the draft refreshed NZEECS.

The reason for government intervention was clear.

The programmes were designed to address market failures and behavioural barriers and deliver public and private sector benefits. Most of the programmes had clearly identified these market failures and barriers thus indicating a clear role for government intervention. Eleven out of the 12 programmes had clearly identified the role for government intervention (three were rated 'excellent', six were rated 'very good', two were rated 'good' and one was rated as 'adequate').

Although intervention logic models existed for the programmes, they lacked clarity on the intended outcomes, the preferred option chosen and stakeholder engagement.

Many of the programmes had developed intervention logic models but did not have clear and realistic targets and outcomes. Alternative intervention options were presented in many cases but a robust discussion on why the existing intervention was chosen over other interventions was not available. In many instances, there was a lack of a clear stakeholder engagement and analysis of the industry's capabilities and capacity to successfully implement and deliver the programmes. This highlighted the need to have a more robust approach to business engagement and market analysis that reflects actual market and business realities. Four programmes were rated 'very good', three were rated 'good', two were rated 'adequate' and four were rated 'poor'. For some programmes, the outcomes being sought and programme incentives were not clear (for example, E3 and Commercial Buildings).

We recommend that EECA refines the existing Outcomes Framework for each programme to ensure that their targets are realistic and the outcomes are measurable.

The performance of the programmes was mixed. There was a lack of evaluation discipline applied by EECA to their workplan as a whole.

The performance of the programmes was mixed as not all the programmes generated benefits that exceeded their implementation costs. The three programmes that received the highest benefit-to-cost ratio were Warm Up New Zealand, Top 200/Next 1000 and E3. However, only Warm Up NZ delivered a clear public benefit (improved health outcomes). For the other programmes, the public benefits were not clear. For half of the programmes, the implementation costs outweighed the benefits generated. For the pilot programmes, only the Lower Carbon Meat and Dairy programme performed well. The other pilot programmes did not deliver value-for-money. Half of the programmes were rated as 'poor', two were rated as 'excellent', two were rated as 'very good', one was rated as 'good' and one was rated as 'adequate'.

In many instances, there were issues with data collection and analysis or the lack of a robust monitoring and evaluation approach in place to track success. Across all programmes, data collection and analysis needed to improve at the various stages – from design through to implementation and evaluation.

Engaged stakeholders are important in evaluation projects. Their engagement and commitment at programme development is vital for the successful uptake, delivery and implementation of the programme. The participation of stakeholders will also help with collecting relevant monitoring data to track the performance of the programme over time. There was no ongoing commitment and support from programme participants to provide monitoring data. It is important that the programme's stakeholders are engaged in this process in order to ensure their buy-in and commitment to the programme at the design stage.

Some programme objectives and intended outcomes overlapped. Others were highly interdependent of each other. These made it difficult to measure success. Programmes need to have clear and distinct outcomes; otherwise, they should be integrated into a single programme.

In particular, the authors of this meta-analysis noted that the best-performing programmes were relatively high expenditure and targeted a large market/opportunity. A key factor present in these programme were that they were piloted at small scales, reviewed regularly and were improved based on the findings of the reviews.

We recommend that:

- in any future re-design of the programmes, it is critical for EECA to develop a clear monitoring and evaluation approach. This will improve data collection and analysis in order to track the performance of the programme over time;
- EECA engages with stakeholders and tests and obtains their commitment and buy-in at programme design phase;
- EECA reviews any interdependencies and possible duplication of programmes as these had an impact on the actual performance of the programmes; and
- EECA continues to pilot programmes and re-shape existing programmes based on lessons learned from formal and ad-hoc reviews.

EECA had the mandate to lead the programmes.

Overall, EECA had the mandate to lead the programmes when they were developed but there was a need to explore the role of other agencies in programmes such as Warm Up NZ and Heavy Vehicles that were outside its mandate (i.e. public health and transport). Ten out of the 12 programmes were rated either ‘excellent’ or ‘very good’.

We recommend that EECA reviews the relevant lead for each programme where the outcomes cut-across more than one agency.

Appendix 1 – Meta-analysis of EECA's review of their 12 programmes

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1. Equipment Energy Efficiency (E3)

The E3 programme performed well. It had a clear problem definition and fitted strategically well with the current Government's energy priorities. However, it needs to articulate its outcomes and measures of success better in the short, medium and long term.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition		●					The programme had a clear description of the problem being addressed. The lack of consumer awareness on the energy performance of products resulted in a lack of demand for energy efficient products and little incentive for industry to introduce energy efficient technologies. This problem had implications for energy demand and greenhouse gas emissions. However, there was little information on how the different sellers of the energy products would be motivated to comply.
Strategically fits with government and EECA objectives		●					Strategically fitted well with NZEECS 2011-2016's, BGA's, NZ Energy Strategy 2011-2021's and EECA's objectives on energy efficient products, renewable energy and reduction of carbon emissions. However, there was little detail on how the programme would contribute to these strategic aspirations.
Role for government			●				Government intervention was required due to aspects of market failures. This included the lack of information available to consumers to fully assess the benefits of purchasing energy efficient products, split incentives of buyers vs users of these products and the deliberate effort it takes to change the way people think about energy use. Although the above aspects of market failure were mentioned, there was a lack of detailed discussion to illustrate the need for government intervention. A number of possible side-effects and potential costs were identified but again there was less detail on how these would be addressed.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Intervention option			●				Clear objectives were identified and these were used as proxy for outcome measurement. However, no intervention logic was developed. There were no clear indicators, measures and set of targets to be achieved in the short, medium and long term. This restricted the ability to provide a clear assessment of outcomes and impacts achieved. Although potential options were identified there was no discussion on why this intervention was chosen over the others. Also, there was less detail on market capabilities to deliver the intervention.
Performance of the intervention		●					Based on EECA's analysis of sales data, it was estimated that the programme had saved 22.9 PJ which was equivalent to $560 million worth of national benefits and reduction of 878 ktCO_2e gas emissions, equal to 3% of New Zealand's energy-related emissions. However, there was a lack of detail on how the programme is aligned to that of Australia and other countries.
Has a clear mandate	●						EECA had a clear mandate to deliver the programme given its legislative framework and relationship with Australian agencies. Alternative agencies were considered but these agencies did not have the appropriate mandate or the relevant capability to deliver the programme.

2. Commercial Buildings Programme

Commercial Buildings Programme fitted strategically well with Government's energy priorities. However, it performed poorly against its targets, thus signalling the need for a robust approach to business engagement and robust market analysis.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition			●				The programme identified a clear problem to address. It aimed to get owners/developers of commercial buildings to build the most energy efficient buildings. The two components of the programme included an energy efficiency rating system for existing commercial buildings, and advice for new buildings and large refurbishments. It is estimated that energy savings of 1.4 PJ, equivalent to 54 ktCO_2e of greenhouse gas emission would be made. However, potential savings from advice on commercial buildings was not adequately discussed. Also, there was a lack of detail on the long-term energy usage decisions as well as what energy efficient building designs were being targeted and the incentives for its uptake.
Strategically fits with government and EECA objectives		●					The programme fitted strategically well with NZEECS 2011-2016's and BGA's objectives on enhancing business productivity and competitiveness through energy efficiency projects. There was a mention of the tension between Government's housing affordability intentions and the programme's aim to make commercial buildings energy efficient. However, no detail was provided on how housing affordability interacts with the energy efficiency of commercial buildings. This warrants further discussion especially on how this tension was resolved.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Role for government			●				A clear market failure was identified, specifically a lack of understanding on the efficient use of energy in the commercial building market, and split incentives where the benefits of an energy efficiency investment lie with the end user and not with the initial investor. It was not clear if stakeholders were consulted when identifying the issues and how to best address them. It appears that energy savings was not a key priority for tenants but other factors such as seismic ratings, location and quality of amenities were more important. Fewer private sector benefits were identified even though they were deemed to play a key role in the programme's success.
Intervention option				●			An intervention logic was developed for the ratings system but not for the Commercial Building Performance Advice (one of two components of the programme). Instead, a discussion on the intended outcomes was presented. Investment objectives and targets were also presented but these indicators and measures could have been aligned to short, medium and long terms outcomes. It appears that various intervention options were considered but there was no detail indicating why the existing intervention was selected over the others. There was limited detail on market readiness, technologies, skills and capabilities required to deliver the intervention. Programme incentives and its mandate were unclear.
Performance of the intervention					●		Initial Cost Benefit Analysis (CBA) results were not positive. Due to the lack of stock of commercial buildings, a comparison between re-ratings and the initial ratings could not be undertaken. For the Commercial Building Performance Advice, the estimated avoided greenhouse gas emissions were 1,629 ktCO_2e. The Commercial Building Performance Advice component was more successful than the ratings system. However, how and why this was the case was not very clear. There were problems with initial uptake, ambitious targets and availability of resources to collect relevant monitoring data for meaningful analysis. Also, a clearer re-rating system would have given a better picture of the programme's performance.

Programme Rating	**Excellent**	**Very good**	**Good**	**Adequate**	**Poor**	**Insufficient**	**Remarks**
Has a clear mandate		●					EECA had the mandate, experience and capability to lead. However, the NZ Green Building Council could also be a key leader especially for the ratings systems component.

3. Crown Loans Programme

Crown Loans Programme had a low uptake, was not monitored well and its impact remains unclear. There is a need to review its relevance given current realities and interdependencies with other related EECA programmes.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition			●				The purpose and objectives of the programme were clear. However, relevant sections of the report could be edited and simplified and the use of jargon minimised. Crown Loans are interest-free loans to public sector organisations for energy efficiency and renewable energy projects. It aims to reduce at least 10% of government's energy use, an estimated public cost savings of $40 million per year. However, the success indicators of the programme were unclear.
Strategically fits with government and EECA objectives	●						There was a clear strategic fit with NZEECS 2011-2016's, BGA's and EECA's objectives on energy efficiency, renewable energy and greenhouse gas emissions for public sector organisations.
Role for government				●			Two aspects of market failure were identified, including the lack of capital to invest in energy efficient projects. An external review noted that when the initiative was launched in 1989, access to capital was identified as a key barrier; however, this was no longer the case today. There is a need to review the scheme given that public sector organisations can now access alternative funding schemes such as the Westpac leasing arrangements. Also, the public and private benefits of the programme were not adequately explained.

Programme Rating	**Excellent**	**Very good**	**Good**	**Adequate**	**Poor**	**Insufficient**	**Remarks**
Intervention option					●		No intervention logic was developed. It would have helped in clearly identifying the outcomes, outputs and activities as well as help to measure the performance of the programme. However, the objectives of the programme provided an indication of its intended outcomes. There was no consideration for other options. There was no detail on potential risks and mitigations. There was limited discussion on the scale of the problem presented. Given that the initiative has been in existence for 27 years, it is important to review the relevance of initial objectives given present realities and interdependencies with other programmes such as the engagement with businesses via Top 200, Next 1,000 and SME programmes.
Performance of the intervention					●		It was clear that the programme did not perform well due to limitations related to its uptake, its ability to adapt well alongside other loan products in the market, and its level of market engagement. Also, it was clear that the programme was not monitored well and therefore its benefits/impacts were unclear. To date, the Crown Loan scheme has allocated $39.8 million in funding across 293 projects. The actual benefits of the programme from 1989 to date were unclear. The potential benefits of the programme identified were only for the period 2013/14 and 2015/16 financial years. There were a number of suggestions and list of actions for EECA to consider following an earlier review of the programme but it was unclear if these had been implemented.
Has a clear mandate	●						EECA was the most appropriate agency to lead the programme as it had the mandate to provide grants, awards, or loans.

4. Energy Star Programme

Energy Star Programme had a high-level of interdependency with other programmes, making it difficult to measure its contribution.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition		●					The programme had a clear description of the problem being addressed: the lack of consumer awareness to identify the energy performance of energy-using products. Several options were considered but the voluntary endorsement labelling was chosen given the timeframe in enabling regulatory system changes. However, the goal of the programme appeared to overlap with the intentions of the E3 programme.
Strategically fits with government and EECA objectives		●					The programme aligned well with NZ Energy Strategy 2011-2021's, NZEECS 2011-2016's and EECA's objectives on the efficient use of energy and uptake of energy efficient products.
Role for government		●					The market failures identified included the lack of information available to help fully assess the benefits of purchasing energy efficient products and the complexities of consumer preferences. There were a number of public and private benefits identified for the programme including a reduction of greenhouse gas emissions and energy costs, improved business competitiveness and productivity, and deferred need to invest in new generation infrastructure. Given that this was a voluntary programme and its success depends on the buy-in of retailers and manufacturers, it would have been useful if the situation analysis explored how this support from the key stakeholders could be obtained.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Intervention option				●			A simple intervention logic was developed for this programme. A number of options were considered when the programme was being developed but the voluntary endorsement labelling was chosen rather than the regulatory change. However, the ENERGY STAR rating had a high level of interdependency with other EECA programmes, making it difficult to understand and measure its contribution/value add. There was a lack of detail on the potential benefits of the programme and the intended outcomes. There was also limited information provided on market readiness and capabilities. Although risks were identified there was no mention of any mitigation.
Performance of the intervention					●		No clear benefit could be attributed to the programme. Due to the lack of sales data to monitor the effectiveness of ENERGY STAR, the existence of two regulations around labelling of products – the Minimum Energy Performance Standards (MEPS) and Mandatory Energy Performance Labelling (MEPL) – it was difficult to measure its specific contribution. An independent evaluation showed a smaller benefit than what was originally anticipated. Overall, the evaluation found that the programme did not appear to provide additional value to the E3 Programme. The evaluation recommended a number of improvements to data collection. Limited information was provided on what activities were to be undertaken as a result.
Has a clear mandate	●						EECA had a clear mandate to lead in promoting energy efficiency practices and technologies. Also, given EECA's role in the administration of the related E3 Programme, it is deemed as the best agency to lead ENERGY STAR.

5. Energywise Programme

The Energywise Programme played a role in raising public awareness of energy efficiency. However, it was unclear what difference the programme had made.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition	●						The problem was well defined. The aims and activities of the programme were also clear. ENERGYWISE is EECA's residential master brand that was developed to support existing programmes. It aims to inform and motivate residential consumers about the benefits of energy efficiency, and the steps they can take to make better use of their energy. There was clarity around the different types of energy users and their characteristics. Market characteristics were also well defined. Two relevant studies on market characteristics were undertaken to help inform the appropriate targeting of the initiative.
Strategically fits with government and EECA objectives	●						The programme strategically fitted well with NZEECS 2011-2016's, BGA's and EECA's objectives on energy efficient homes, use of renewable energy to increase productivity and better consumer choices on energy efficiency.
Role for government		●					There was a clear discussion on market failures, barriers and potential public and private benefits. No unintended side effects were foreseen. Targeting behaviour change and influencing consumer behaviour on their choice of energy efficient practices at home and when driving were notable objectives that warranted government intervention. However, it was unclear how households could be motivated to change their behaviour related to energy practices and usage.
Intervention option					●		No intervention logic was developed for the programme. While the objectives of ENERGYWISE were clear; the short, medium and long term outcomes, the corresponding indicators and measures of success were unclear. Even though risks were identified, there was no information on its mitigation. There was no consideration for other options. The programme was very much output driven and not outcome focused.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Performance of the intervention					●		It was unclear whether the programme had made a difference. The performance of the programme was difficult to measure especially how information translated into action and how improvements contributed to outcomes. The programme outcomes remained unclear. It was difficult to quantify the benefits of the programme to see a clear cost to benefit advantage. Only outputs and activities were measured. A CBA was not undertaken; instead a payback calculation was carried out. A social cost benefit analysis could have been undertaken to measure the health and other intangible benefits (change in positive behaviour of residential homeowners) of the programme.
Has a clear mandate	●						EECA had a clear mandate to lead the implementation of the programme.

6. Heavy Vehicles Programme

Heavy Vehicles Programme fitted strategically well with government's and EECA's objectives. However, it did not deliver on its intended outcomes and the benefits it generated did not outweigh the costs of its implementation. Should the programme be re-designed, a review of which agency is best placed to lead it is needed.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition	●						The problem to be addressed was well defined through a well-developed intervention logic and a thorough situation analysis. Specific activities to be funded by the programme were also identified. The programme aimed to address information, capability and cost barriers in order to improve fuel efficiency of heavy vehicle fleet and reduce greenhouse gas emissions.
Strategically fits with government and EECA objectives		●					The programme was strategically well aligned with NZCEECS 2011-2016's, BGA's and EECA's objectives on energy efficient transport system and reduced carbon emissions from heavy vehicles.
Role for government	●						There was a clear discussion on market failures and barriers. The benefits of the programme, both public and private, were well discussed. There was a role for government to intervene in the heavy transport market to help realise the significant public benefits of reduced carbon emissions and improved air quality. Potential public and private benefits identified included a reduction in greenhouse emissions and road accidents and improvement in air quality.
Intervention option			●				An intervention logic was developed and this provided a clear description of what success should look like. Expected outcomes and measures in the short, medium and long term were identified. However, a Monitoring and Evaluation Framework should have helped in sense checking and monitoring of outcomes achieved over time. Although other options were identified, there was no information on why the programme was developed in its current form and how achievable or ambitious these options were. There was also a lack of detail on market capabilities to deliver the programme.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Performance of the intervention					●		Overall performance of the programme was poor. There was no clear indication of the difference it made. There were problems related to uptake, participation and benefits of the programme. There were issues with collecting data and measuring the outcomes of the programme. Programme participation was low, individual fleet performance was hard to measure, fleet operators did not monitor fuel efficiency and there were fewer than expected Fuel Management Advisors (FMAs) accredited. However, participating fleet operators gave positive feedback about the programme, particularly on the help and guidance of the FMAs.
Has a clear mandate				●			Given the programme's current design and focus, EECA is best placed to continue as the lead agency. However, it is recommended that a re-design of the programme be undertaken. The focus of the re-designed programme will inform which agency is best placed to lead it.

7. Top 200, Next 1000 and SMEs

The Business Engagement Programme (Top 200, Next 1000 and SMEs) was well conceived, well implemented and performed well.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition	●						The programme had a clear problem definition. The activities undertaken and outcome sought were well discussed. Market structures, actors and incentives were also clearly discussed. The programme was developed after a thorough problem identification and gap analysis process, and an initial pilot of the programme was completed before it was rolled out more widely. These processes and activities undertaken were clearly articulated.
Strategically fits with government and EECA objectives		●					The programme strategically fitted well with NZEECS 2011-2016's, BGA's and EECA's objectives on improving energy efficiency and using renewable energy to raise business productivity, reduce carbon emission and promote consumer choice.
Role for government		●					The role for government was clear. There were clear discussions on market failures and barriers as well as benefits of the programmes to both public and private sector. The main barrier identified was businesses' lack of understanding of energy efficiency measures. Given that the Top 200 businesses use 70% of business energy, the Government has a big role to play in ensuring that the private sector undertakes activities that are not only profit maximising but also generate public goods. The same rationale was applied to the role of the government in respect to the Next 1000 and SMEs.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Intervention option		●					There was no detailed intervention logic developed for specific interventions. However, a simpler intervention logic illustrated an approach for engaging with Top 200 businesses from pilot to programme implementation to post-programme. The approach also provided a situation analysis, the expected chain of events when implementing the programme and how specific barriers can be addressed through different products and services. The interventions were rolled out after the success of the pilots. The programme used a number of different interventions to develop long-term multi-site partnerships and work with business leaders to identify opportunities to be more efficient with their energy use.
Performance of the intervention		●					The programme did well and there was information on the difference it was making. The interventions had exceeded their objectives especially in terms of the partnerships being formed. To date, the total number of long-term partnerships established since 2014 was 87 out of 200 businesses, mostly in carbon-intensive industrial sectors. The focus going forward should be on growing these partnerships and developing specific indicators for success over time as well as considering how the current intent of the programme is strategically aligned to the areas of greatest national benefit.
Has a clear mandate	●						EECA had a clear mandate to lead the programme and was seen as an independent and 'honest' broker.

8. The Vehicle Fuel Economy Labelling Programme

The Vehicle Fuel Economy Labelling Programme had a clear problem definition, and fitted strategically well with government's and EECA's energy priorities. EECA had a clear mandate to lead the programme. However, there were issues with attribution of public benefits to the programme.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition	●						The programme had a clear objective, that is, to address the problem of lack of accessible information on vehicle fuel economy, particularly for new and imported light vehicles. The programme's target was to improve the average fuel economy of imported light passenger vehicles by providing consumers with comparative fuel efficiency information at point of sale. It was anticipated that addressing the market failure would lead to buyers being able to demand more fuel efficient vehicles, which in turn would lead to a reduction in vehicle fuel greenhouse gas emissions. However, it was important to consider the future of the programme given the number of changes in the market, particularly the introduction of electric and plug-in hybrid vehicles, increased awareness of carbon since the COP21 climate summit, and the new testing requirements for light vehicles.
Strategically fits with government and EECA objectives	●						The programme strategically fitted well with NZCEECS 2011-2016's, BGA's and EECA's objectives related to an energy efficient transport system and to reducing carbon emissions.
Role for government	●						There was a clear role for government to address the lack of information on the link between fuel efficiency and costs as well as carbon emissions for vehicle buyers. It was anticipated that information on fuel efficiency of new and imported light vehicles will help buyers make better purchasing decisions. Market barriers identified included buyers prioritising the upfront cost of a vehicle over the whole-of-life costs. The public and private sector benefits were clear. A reduction in fuel use was anticipated to contribute to lower carbon emissions, air pollution and quantity of oil being imported.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Intervention option			●				No intervention logic was developed for the programme. However, EECA's Business Plan described the objective of the programme. Different policy options were considered, with the mandatory labelling at point of sale for new and used vehicles as the preferred option. The incentives of the programme and the issues related to the external factors (i.e. dependence on data from international fuel economy testing standards and labelling programmes) were not clear. There was little information on the long term outcomes and capabilities required to deliver the intervention. There is a need to review and re-design the programme given current priorities.
Performance of the intervention			●				Stakeholder research conducted by EECA showed positive findings especially in terms of increased awareness of the programme and the ability of the programme to influence purchasing decisions of vehicle buyers. There is clear value for quality data and information on vehicle fuel economy as well as the ongoing need to provide this information for the industry. However, the level of investment and focus of the programme going forward needs to be considered given that the benefits of the programme had been uncertain, mainly because the outcomes related to carbon emissions and fuel savings are difficult to measure. The success indicators were unclear. Although the estimated benefits outweighed the costs there was no certainty that this was the case due to the assumptions being made on energy savings and carbon emissions.
Has a clear mandate	●						EECA had a clear mandate to lead the programme as it's within its mandate to promote practices and technologies related to energy efficiency.

9. Warm Up New Zealand

Warm Up New Zealand Programme performed well. Given the significant health benefits of the programme there might be a need to review what role the Ministry of Health should play in the programme.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition	●						The programme had a clear description of what problem was being addressed, that is, to improve the thermal performance of houses by subsidising the retrofit of ceiling and underfloor insulation. This was considered a problem given the magnitude of un-insulated or poorly insulated private dwellings. The programme has undergone a number of iterations since it was first established. The target group, incentives and the outcomes were very clear. The market structure was also clear, including the service providers, home-owner occupiers, private landlords and tenants.
Strategically fits with government and EECA objectives		●					The programme strategically fitted well with NZECCS 2011-2016's and EECA's priorities on the efficient use of energy and improving insulation in New Zealand homes.
Role for government	●						The role for government was clearly identified. This involved addressing information gaps on the thermal performance of residential properties to help consumers make informed decisions. Also, the programme aimed to address the issue of split incentives between landlords and tenants to insulate their properties. The behavioural barriers identified were mainly due to affordability, preferences and opportunities to insulate. There were clear public and private sector benefits of home insulation to both landlords and tenants.
Intervention option		●					There was an intervention logic developed for the programme. A number of options were considered. Potential risks and mitigation were identified. Overall, the programme was successfully refined and retargeted several times to reflect government priorities.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Performance of the intervention							The programme benefits achieved so far signal that the programme was successful. To date 296,482 houses have been insulated. This is 25% above target without any increased cost for government. A comprehensive evaluation of the initial programme showed significant health benefits especially amongst the very young and the old, with small (but measureable) energy savings. CBA was also positive.
Has a clear mandate							EECA was well placed to lead the programme and deliver on its mandate. EECA has been influential so far in fostering the development of a mature insulation industry. However, given the significant health benefits of the programme compared to energy savings, there is a need to review what role the Ministry of Health should play.

10. Wood Energy South Pilot Programme

Wood Energy South Pilot Programme had a clear problem definition, fitted strategically well with government and EECA's objectives, had a clear intervention logic and a clear mandate for EECA to lead. However, the programme performed poorly, highlighting the need for a robust situation analysis and stakeholder engagement during programme development.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition		●					Very clear articulation of the issue being addressed, target group, activities undertaken and the outcomes sought. Market characteristics, actors, interactions and incentives were well defined. The pilot programme aimed to reduce carbon dioxide emissions and facilitate the development of the sustainable wood energy supply chain in Southland through switching heating fuel sources from coal to wood. The wood energy stakeholders identified were heat users, heating system specifiers, boiler suppliers, wood fuel suppliers, forest owners and Venture Southland technical advisors. However, a nationwide assessment of the problem and the reasons for piloting in a particular region were not adequately discussed (although some reasons for selecting Southland were provided).
Strategically fits with government and EECA objectives		●					There was a clear strategic fit with NZEECS 2011-2016's and BGA's objectives on using energy from woody biomass, reducing carbon emissions and supporting renewable energy use.
Role for government		●					Market failures for government intervention were clearly discussed. This included the lack of information among energy specifiers and decision makers on the benefits of wood fuel over fossil fuels and the emerging nature of the wood fuel market. Another barrier was the high initial capital costs to establish a wood fuel heat plant. Potential public and private benefits were identified, these included: • a reduction in greenhouse gas emissions and maintenance costs for those converting to wood fuel; and • improved air quality and health.

Programme Rating	**Excellent**	**Very good**	**Good**	**Adequate**	**Poor**	**Insufficient**	**Remarks**
Intervention option		●					There was an intervention logic developed for this programme. The size of the programme, market readiness, risks and mitigation and resources were well defined. Expected outcomes of the programme included sustainable growth in the wood fuel supply chain, development of a functioning wood supply cluster and improved understanding of the benefits of wood energy. There were no clear alternative options identified. The cluster approach was not adequately explained.
Performance of the intervention					●		It was clear that the programme did not meet its objectives due to limitations related to its uptake. To date, large conversions will be required to achieve its expected outcomes. There is a need to review the reasons for low uptake. More analysis is required on the economic potential of the programme before roll-out.
Has a clear mandate	●						EECA was the appropriate agency to lead the programme. It had the mandate to promote renewable energy and undertake demonstration projects.

11. Lower Carbon Meat and Dairy Pilot Programme

The Lower Carbon Meat and Dairy Pilot Programme performed well. It had a clear problem definition and fitted strategically well with the current government's energy priorities.

Programme Rating	**Excellent**	**Very good**	**Good**	**Adequate**	**Poor**	**Insufficient**	**Remarks**
Has a clear problem definition	●						The objectives of the programme were clearly defined, that is, to address the lack of information on how to improve energy efficiency and carbon footprint in the food processing sector and the lack of capital to invest into these energy-efficient technologies. The pilot programme aimed to maximise energy efficiency and reduce carbon emissions by improving heat recovery processes, boiler tuning and fuel switching. The situation analysis had clearly identified the main market players involved, e.g. meat, dairy and seafood processing sites and established energy management experts.
Strategically fits with government and EECA objectives		●					The pilot programme aligned well with NZEECS 2011-2016's and BGA's objectives on business growth and competitiveness from the use of energy efficiency and reducing carbon emissions.
Role for government		●					The role for government was well defined. Market failures and behavioural barriers were also well defined. These included the lack of understanding of the benefits of reduced energy costs, real and perceived affordability of investments in energy efficiency projects, and a culture of risk aversion amongst decision-makers due to a lack of appropriate information to make informed decisions. Potential public and private benefits identified were reduction in greenhouse gas emissions, improved air quality, and reduced maintenance costs.
Intervention option		●					An intervention logic was developed for the pilot programme. The size of the programme, market readiness, risks and mitigation and resources were well defined. The expected outcomes of the programme were related to national energy savings, reduced CO_2 emissions and an improvement in the industrial sector energy intensity level. It was clear that the options considered were mainly around the shape of the programme. There was no options analysis done on how best to solve the problem.

Programme Rating	**Excellent**	**Very good**	**Good**	**Adequate**	**Poor**	**Insufficient**	**Remarks**
Performance of the intervention	●						The programme was well on track to meeting its targets. There was a clear discussion on the effectiveness of the programme. To date, 50 major dairy and meat sites in Waikato, Whanganui and Canterbury have been investigated. Its benefits were deemed to outweigh the costs of its implementation. Its achievement had surpassed EECA's annual targets. The programme's future plans were also well on track. An evaluation plan has been developed and there were plans to continue to monitor the programme. However, a budget was yet to be assigned. The pilot programme had performed sufficiently well so far to be considered for roll out.
Has a clear mandate	●						EECA was best placed to be the lead agency for this programme given its statutory mandate to promote energy efficiency, its role in NZEECS, and its relationship with energy specialists and businesses through the Top 200 and Next 1000 programmes.

12. Fuel Efficient Tyres Programme

Fuel Efficient Tyres Programme performed poorly, lacked a clear problem definition and an intervention logic.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Has a clear problem definition				●			The programme clearly identified the problem it wanted to address, that is, to reduce greenhouse gas emissions from light vehicle fleet by improving the uptake of fuel efficient tyres. This was to be achieved by providing information to consumers to help them choose more energy efficient tyres and understand the benefits of doing so. EECA – branded labels were used with the help of tyre distributors. However, there was a lack of rigor to unpacking the problem. The scale and size of the problem was not well defined. Also, the problem definition and options analysis were too narrowly focused on one aspect of the light vehicle fleet: the low uptake of fuel efficient tyres.
Strategically fits with government and EECA objectives		●					The programme fitted strategically well with NZ Energy Strategy's, NZEECS 2011-2016's, NZ Road Safety Strategy 2020's and EECA's objectives on energy efficient transport system, safer roads and less fossil fuels.
Role for government		●					The role for government was clear. Market failures and barriers addressed by the programme included time lags between the availability of energy-efficient technologies and their uptake, the lack of information available to consumers on the fuel efficiency of tyres, and consumer preferences related to durability, safety, handling and price over fuel efficiency.

Programme Rating	Excellent	Very good	Good	Adequate	Poor	Insufficient	Remarks
Intervention option					●		There was an intervention logic developed. However, there was little consideration for how much of the intended outcomes were actually achievable given the limitations. A variety of intervention options were considered, including regulatory approaches that would have had the most impact but due to long lead times and a lack of support EECA decided to take a voluntary labelling approach. The size and potential impact of the programme was too ambitious. Even though there was a clear discussion that the market was not quite ready, there was little discussion on how this could be addressed to enable the success of the programme. There was no discussion on the sufficiency of the resources available for this programme or how the allocated funding would drive the programme forward.
Performance of the intervention					●		The programme performed poorly. A cost-benefit analysis was not conducted. Findings from the market analysis and mystery shopping exercise found that the targets set were overly ambitious, the fuel savings benefits for consumers were optimistic, the target market was smaller than originally thought, and tyre retailers were not adequately incentivised to sell fuel efficient tyres over non-fuel efficient tyres. The recommendation was to scale down the marketing campaign, retain the label and maintain an internet presence. Even though the programme was scaled back it was still not clear what the refreshed programme aims to achieve in the future and how its success will be measured.
Has a clear mandate	●						EECA was the most appropriate agency to lead the programme. It had proven capability having led other similar programmes as well as had the mandate to promote practices and technologies on energy efficiency.

Appendix 2: Evaluation Criteria

Key criteria *The programme…*	**Evidences** *From the programme, we can see…*	**Questions**
Has a clear problem definition	• clearly articulated problem or issue being addressed, the target group, the activities EECA is undertaking and the outcome that is being sought. • clearly defined market structure, actors, interactions and relevant existing incentives.	What is the programme? What is the problem it is solving? Is there a clear problem or opportunity in energy efficiency, energy conservation or renewable energy? What is it? What are the market characteristics and structures?
Strategically fits with government and EECA objectives	• strategic fit with government and EECA objectives, how it aligns with work of other agencies and all-of-government strategies.	Is this mandatory or discretionary? Is this a strategic priority for the government? Is this a good fit with the work of other agencies and all-of-government strategies such as NZEECS, BGA? Is it a good fit with EECA's strategy?
Has a key role of government	• clear market failures being addressed. • behavioural barriers being addressed. • clear public benefits that are expected to accrue to New Zealand as a result of solving the problem. • no crowding out of private sector initiatives or creating any unintended externalities or side effects.	Are there market failures that are creating the problem? What are they? Are there market barriers, and public goods generated when these barriers are addressed? What are they? What are the potential public good benefits? What are the potential costs?
Is the best intervention option	• clear intervention logic (the chain of events expected to link activities to outcomes and the assumptions being made about those links). • clear description of the desired future state resulting from the intervention. • clear options identified and evaluated (a preferred option is identified with rationale). • the size of the potential of the project/programme (PJ, $, CO2). • there are available economical technologies and market capability to deliver the intervention.	What is the intervention logic? Is it clear and logical? What are the investment objectives? Are they clear? What other options are there? What other interventions or suite of interventions have been considered and how do they compare? What is the size of the realisable opportunity in terms of CO2 and energy (additional to what would occur without the intervention)? Does the market have appropriate

Key criteria *The programme…*	**Evidences** *From the programme, we can see…*	**Questions**
	• potential risks and mitigation are identified. • potential effect to other programmes resulting from any change identified. • evidence for the likely counterfactual situation exists. An indication of the scale of the problem is presented. • adequate FTE, skills & funding are available.	capability and incentives to support success? What are the risks? What are the consequences of failure? What interdependencies are there with other programmes? What are the funds, skills and resources allocated to the intervention? Are they adequate?
Performance of the programme (benefit-to-cost ratio)	• clear evidence and description of how EECA has created change in the market that would not have occurred otherwise. • clear evidence and description of how EECA's activities have led to the benefits. • benefits outweigh the cost of implementing the intervention. • clear description of committed funding, contracts and resources for the future, and a clear rationale for change in expected performance.	To what extent is the programme working? What are the achieved benefits? To what extent the benefits outweigh the costs of its implementation? What is planned for the future? Is future performance expected to differ significantly from past performance? Why? To what extent?
Has a clear mandate	• EECA is the appropriate organisation to lead the intervention	Does EECA have the mandate, capability and willingness to lead versus other potential lead organisations?

Appendix 3: Performance Levels

Rating	**Generic example of performance levels**
Excellent (Always)	• Clear example of exemplary performance in this domain: no weaknesses.
Very good (Almost always)	• Very good to excellent performance on virtually all aspects; strong overall but not exemplary; no weaknesses of any real consequence.
Good (Mostly, with some exceptions)	• Reasonably good performance overall; might have a few slight weaknesses, but nothing serious.
Adequate (Sometimes with quite a few exceptions)	• Fair performance; some serious, but not fatal weaknesses on a few aspects.
Poor (Never or occasionally with clear weakness evident)	• Clear evidence of unsatisfactory functioning; serious weaknesses across the board on crucial aspects.
Insufficient evidence	• Evidence unavailable or of insufficient quality to determine performance.