



# Manufacturing Efficiency Funding Program: Outcome Evaluation

**FINAL REPORT**

Prepared by KPMG for the Science, Economics and  
Insights Division of the NSW Department of  
Planning and Environment.



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Title: Manufacturing Efficiency Funding Program Outcome Evaluation

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Cover image: Boxes conveyor belt

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# List of Acronyms

<b>Term</b>	<b>Definition</b>
BREEF	The Victorian Business Recovery Energy Efficiency Fund
CAMO	Compressed Air Metering Offer
CASSP	Compressed Air and Steam Services Pilot
CBA	Cost-Benefit Analysis
CCF	Climate Change Fund
CEEP	The Commonwealth Community Energy Efficiency Programme
CMVPs	Certified Measurement and Verification Professionals
DPE	NSW Department of Planning and Environment
EMS	Energy Management Services
ESC	Energy Savings Certificates
ESS	Energy Savings Scheme
GEIP	The NSW Gas Efficiency Improvement Program
GHG	Greenhouse Gas emissions
GJ	Gigajoule
GWh	Gigawatt hours
KEQ	Key Evaluation Question
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
M&V	Measurement and verification
MEF	Manufacturing Efficiency Funding
MMF	Manufacturing Modernisation Fund (Commonwealth)
MWh	Megawatt hours
NSW	New South Wales
OEH	NSW Office of Environment and Heritage

# Executive summary

## Purpose and scope

This report has been developed to present the outcome evaluation findings for the Manufacturing Efficiency Funding program (MEF program, the program). During the development of the program the Department developed an evaluation plan, which stipulated the requirement for an outcome evaluation to assess the efficiency and effectiveness of the program in achieving its intended and planned outcomes.

The following key evaluation questions (KEQs) were defined to scope the outcome evaluation:

Table 1: MEF program outcome evaluation KEQs

KEQ	
<b>M&amp;E Task 1</b>	<b>Analyse energy saved, reduction in costs of bills and GHG emission reduction</b>
<b>O1.1</b>	To what extent have the targeted energy savings been delivered by the participant businesses?
<b>O1.2</b>	To what extent have the energy efficiency upgrades reduced participant businesses' expenditure on energy bills and maintenance costs?
<b>O1.3</b>	To what extent were GHG emissions savings achieved?
<b>O1.4</b>	To what extent did the program equitably benefit manufacturers in regional areas?
<b>M&amp;E Task 2</b>	<b>Survey targeted groups' understanding, confidence and practices in energy efficiency</b>
<b>O2.1</b>	To what extent did the program improve the understanding, confidence and practices of participant businesses in energy efficiency or in other business areas?
<b>O2.2</b>	To what extent has the MEF program removed barriers and enabled participant businesses to develop other energy efficiency projects, including beyond the life of the program?
<b>O2.3</b>	To what extent did the program increase the capacity and/or confidence of service providers to deliver energy efficiency services?
<b>M&amp;E Task 3</b>	<b>Efficiency of funding processes</b>
<b>O3.1</b>	To what extent was co-funding to participant businesses administered efficiently?

## Background

The MEF program was originally designed as a \$23 million five-year program funded by the NSW Climate Change Fund (CCF) as one of many energy efficiency initiatives being delivered by the NSW Government until 2022.<sup>1</sup> Introduced in 2018, the goal of the program is to provide funding to up to 250 manufacturing sites in NSW, to save energy and money.<sup>2</sup>

The program provided transitional support to manufacturers to help them manage their exposure to high energy prices by offering co-funding for equipment upgrades such as boilers, pumps and refrigeration, and metering installations to inform better business decisions. Matched funding was provided through two funding rounds, directly to manufacturing businesses, to implement energy metering and efficiency projects.

Some offers made available by the MEF program also included measurement and verification (M&V) requirements for implemented projects. These required the energy savings of projects under these offers to be verified using the International Performance Measurement and Verification Protocol, which forms the basis of the primary M&V method used in the Energy Savings Scheme (ESS). While the Department was aware during design and implementation that many of the projects supported by the MEF program would be too small to justify this level of M&V, it recognised the potential benefits it would have on improving M&V capability in the market.

The offers available under Round 1 and 2 of the MEF program and their requirements are outlined in Table 2 below.

*Table 2: Outline of funding round offers*

<b>Funding round</b>	<b>Outline of available offers</b>
<b>Round 1</b>	<p>The first round of funding was designed to be more accessible for small and medium-sized projects and pose lower risks for manufacturers applying. Eligible manufacturing sites that participated in the first round of the MEF program applied to receive up to 50 per cent co-funding for the following offers:</p> <ul style="list-style-type: none"><li>• Offer 1: Metering and process optimisation – up to \$50,000 matched funding per site to install or upgrade energy monitoring systems to improve control of manufacturing processes and machinery to save energy. All projects must include a process optimisation component and M&amp;V in addition to metering.</li><li>• Offer 2a: Simple energy efficiency upgrades – up to \$30,000 matched funding per site to retrofit and replace specific technologies such as variable speed drives on air compressors. This is a streamlined offer with no M&amp;V required.</li><li>• Offer 2b: Measured and verified upgrades offer – up to \$70,000 matched funding per site for complex energy upgrades such as heat recovery and boiler upgrades. Upgrades using this offer were required to undergo M&amp;V.</li></ul> <p>Businesses could apply for Offer 1 and/or one of either Offer 2a or Offer 2b and had between 12 and 18 months to implement projects depending on the offer.</p>
<b>Round 2</b>	<p>Round 2 comprised the same offers as Round 1, except Offer 2a. In Round 2, Offers 1 and 2b were renamed 'Metering and Process Optimisation Offer' and 'Equipment Upgrades Offer'. Co-contributions of up to 50 per cent were provided to improve the energy efficiency of the businesses (ranging from small to large) related to the three streams. Projects under the Equipment</p>

<sup>1</sup> NSW Department of Planning, Industry and Environment (unpublished) (2021) *Program Evaluation Plan: Manufacturing Efficiency Funding*.

<sup>2</sup> Ibid.



## Funding round      Outline of available offers

Upgrades Offer that were under \$20,00 had the option of not undertaking M&V or where otherwise agreed by the Department. However, all projects above \$20,000 required M&V.

To be eligible for the above offers, businesses must undertake a 'manufacturing activity' according to the Manufacturing Division of the Australian and New Zealand Standard Industrial Classification 2006 or be involved in cotton ginning in NSW.<sup>3</sup>

In addition to the transitional support available to eligible manufacturers through funding Round 1 and 2, the MEF program also included two pilots that were delivered by nominated service providers:

- The Compressed Air Metering Offer (CAMO) which ran from January 2020 to April 2021 and provided up to \$5,000 to manufacturers to install metering on their compressed air systems.
- The Compressed Air and Steam Services Pilot (CASSP), which took applications between February and July 2020 and was designed to help NSW manufacturers increase the productivity and energy efficiency of their compressed air and steam systems.

In providing the above supports, the MEF program was designed to achieve the following projected outcomes:

Table 3: Projected outcomes at program establishment

Outcome area	Projected outcome at establishment
<b>Total NSW manufacturing sites supported</b>	250
<b>Aggregate reduction in electricity consumption</b>	75 GWh
<b>Aggregate reduction in gas consumption</b>	551 TJ
<b>Aggregate reduction in energy bills</b>	\$18 million
<b>Aggregate reduction in emissions</b>	100,000 tCO <sub>2</sub> -e

The Energy Management Services (EMS) program and the MEF program were designed to be complementary in their original business cases. The EMS program was intended to deliver capacity building and support for energy efficiency projects, including through targeted training and coaching services to assist businesses in identifying energy efficiency opportunities.<sup>4</sup> Where businesses intended to implement these opportunities, they could subsequently apply to the MEF program for co-funding support to undertake the project.

In mid-2020, the MEF program was partially defunded, reducing the program budget to \$13.8 million with the program originally expected to close out by June 2022. However, due to delays in delivery resulting from COVID-19, the program agreed that all existing obligations would be honoured, allowing existing contracts and variations to continue to be managed until October 2022. There was no explicit consequential adjustment in the program targets as a consequence of this funding reduction.

## Approach and limitations

To inform the evaluation presented in the report, an approach was adopted which included:

- A review of background documents, including the program Delivery Plan and Evaluation Plan.
- Consultations with key Department and industry stakeholders.
- A quantitative assessment of program outcomes with respect to energy savings, energy bill savings and GHG emission reduction, in addition to the regional and distributional impacts of the

<sup>3</sup> Ibid.

<sup>4</sup> Separate process and outcome evaluations of the EMS program were being conducted during the development of this report.

program. For the purposes of this analysis, estimates have been calculated based on the outcomes of individual project contracts, of which there were 302 across the 215 manufacturing sites supported by the program.

- A qualitative assessment of the Program's impact and legacy.
- A qualitative assessment of the extent to which the program:
  - Improved the understanding and practices of businesses in relation to energy efficiency and adopting energy savings measures
  - Removed barriers for businesses to develop energy efficiency projects, including beyond the life of the program
  - Increased capacity, knowledge, and/or confidence amongst service providers to delivery energy efficiency services.
- Documenting key findings, lessons learnt and recommendations to inform decision-making and design of future market interventions.

This approach delivered valuable insights on the effectiveness and efficiency of the MEF program, however there are some limitations to the analysis and findings. Where possible and appropriate, consideration of these factors, outlined below, has been integrated within the analysis, however all reported findings should be considered with these limitations in mind.

- Data collected through stakeholder consultation is inherently subjective. However, where possible the collected evidence has been validated through a range of qualitative sources and quantitative data analysis.
- Although consultations sought to represent a cross-section of service providers and participants, there were low response rates from participants, particularly from those that participated in the pilot programs.
- Surveys collected from successful participants were limited and may not be fully representative of all participants.
- Some projects funded under the MEF program are still on-going, as such the limited time period between some projects funded by the MEF being implemented and this evaluation being conducted means that implementation data were not readily available.

## **Limitations regarding energy savings outcomes**

Quantitative analysis of the program outcomes is based on a combination of estimates and actual, verified data.

- Estimated energy, energy bill, and emissions savings have been used predominantly because of the completeness of the data, for Round 1 and 2. These estimated figures are based on anticipated savings recorded on funding applications. However, it should be noted that the estimates used on the 'metering and monitoring' type offers are based on generic assumed efficiency rates and are not reflective of project specifications. For comparative purposes only, additional analysis has been done to show the outcomes of projects whose savings were verified using the prescribed M&V method and the outcomes of all projects including those that did not have reported M&V outcomes available (i.e. non-M&V).
- Estimates from the CASSP have been treated separately to the estimates for Round 1 and 2 as these estimates are based on the opportunities identified from audits that could result in energy, energy bill, and emissions savings. As there was no specific funding provided to action these projects, it was up to the discretion of participant businesses as to whether these opportunities were actioned or not.
- Actual, verified data was not available for all successful projects as around 40 per cent of projects were still ongoing at the writing of this report, as illustrated in Table 10. Actual verified data was collected in high quantities for projects completed under Offer 2a and Offer 2b, however there is insufficient data collected from the other offers to extrapolate the actual results from these offers. The limitations on available actual data are explained by two factors:

1. As previously outlined, some MEF program offers, such as Offer 2a for simple energy efficiency upgrades, did not have M&V requirements. Additionally, projects under \$20,000 supported by the Equipment Upgrades Offer in Round 2 did not have M&V requirements.
2. At the writing of this report, some projects had yet to be implemented or had not had sufficient time post-implementation to collect energy performance data, limiting the availability of actual data.

## Key Findings

Based on current evidence and the analysis in this report, the following section summarises the key findings of this outcome evaluation.

### Energy saved, reduction in bills and emissions reductions

**01.1 To what extent have the targeted energy savings been delivered by the participant businesses?**

**01.2 To what extent have the energy efficiency upgrades reduced participant businesses' expenditure on energy bills and maintenance costs?**

**01.3 To what extent were GHG emissions savings achieved?**

The MEF program supported both equipment upgrades and metering installations that resulted in energy savings, GHG abatement and bill savings to manufacturers across NSW. The majority of the direct savings realised through the Program's activities came via the equipment upgrade rounds of the program. Key statistics include:



**302** contracts successfully completed or underway across **215** sites around NSW (for **181** unique businesses).



Capital upgrade offers were estimated to save **17,960 MWh/year** of electricity and **86,048 GJ/year** on aggregate, successful and ongoing contracts in these rounds saved an estimated total **\$3.8m per year** on energy bills or **\$30,685** per successful contract.



Based on application estimates, metering and monitoring contracts delivered under Offer 1 saved an initial estimate of a total of **\$1.9m per year** in energy bills or **\$60,780** per contract signed.



The CASSP identified over **\$5.3m per year** in opportunities for bill savings across **141** sites in NSW with completed contracts.



Offers under Round 1 and 2 of the MEF program resulted in a reduction of an estimated **26,036 tCO<sub>2</sub>-e** per year.

However, total savings realised through the delivery of the program were less than expected. The outcomes achieved by the MEF program relative to its intended projected outcomes at establishment are outlined below.

Table 4 below summarises the performance of the program against the projected outcomes for successful contracts, which include contracts completed or on-going. The estimates provided represent the outcomes for Round 1 and 2 projects only and outline outcomes based on all application estimates, all reported post-implementation outcomes for completed contracts, and reported post-implementation outcomes for completed contracts that included an M&V requirement. This is to allow a comparison between application estimates and actual reported outcomes.



Outcomes for the CASSP have been treated separately because the pilot identified opportunities for implementation rather than providing co-funding for projects.

Table 4: MEF program performance relative to projected expectations for Round 1 and 2 offers

	Projected outcomes at establishment	Estimated outcomes – from applications	Reported outcomes (M&V and non-M&V-56% of successful contracts)	Reported outcomes (M&V only - 27% of successful contracts)
<b>Total NSW manufacturing sites supported*</b>	250	215	–	–
<b>Aggregate reduction in electricity consumption per year</b>	75 GWh	23.2 GWh	8.6 GWh	7.3 GWh
<b>Aggregate reduction in gas consumption per year</b>	551 TJ	170.9 TJ	61.3 TJ	43.0 TJ
<b>Aggregate reduction in energy bills per year</b>	\$18 million	\$5.7 million	\$2.1 million	\$1.5 million
<b>Aggregate reduction in emissions per year</b>	100,000 tCO <sub>2</sub> -e	26,036 tCO <sub>2</sub> -e	9,542 tCO <sub>2</sub> -e	7,612 tCO <sub>2</sub> -e

Source: MEF program data.

\* The number of sites supported by the program presented in this table is inclusive of CASSP and CAMO pilot activity, which accounted for 141 and 5 sites respectively.

Note: The *estimated outcomes* column refers to application form estimates from 156 contracts under Round 1 and Round 2. The *reported outcomes (M&V and non-M&V)* column reflects post-implementation data from 87 completed contracts. It does not include data from 63 contracts still underway. The *reported outcomes (M&V only)* column shows actual savings data from 36 contracts that have so far completed M&V. The Department defined manufacturing businesses as unique manufacturing sites. The above electricity and gas savings omit one project under Offer 1 that had M&V savings but had substituted its gas use for greater electricity use.

The above shortfalls in program outcomes can be attributed to several possible factors, including:

- The program being defunded ahead of schedule, with only \$13.8 million of the original \$23 million budget spent. It is understood that the program intended to deliver two additional funding rounds in order to achieve its objectives, however, as the program was defunded, these funding rounds were not delivered.
- The savings associated with metering projects are based on estimates and may vary significantly. Savings can be more accurately measured in the future once sufficient energy use data is collected.
- The phasing across the EMS and MEF program offers may have limited the capacity for some businesses to participate.
- The timing of funding rounds may not have aligned with internal business financial decision-making processes.
- The impact and uncertainty created from the COVID-19 pandemic throughout 2020 and 2021.

## Distribution of program impacts

### 01.4 To what extent did the program equitably benefit businesses in regional areas?

The MEF program surpassed its regional participation targets of 40 per cent regional participation (outside of Sydney metro) and 20 per cent deep regional participation (outside of Sydney metro, Central Coast, Hunter, and Illawarra-Shoalhaven), achieving 43 per cent and 29 percent participation respectively.

The program mostly achieved its regional participation targets without the adoption of explicit incentives to target regional participants. While a significant proportion of this success was attributed to the natural geographic spread of manufacturing sites across NSW, other contributing factors included:



The use of regional briefing sessions in Round 1, with 39 per cent of applications for Round 1 coming from manufacturers who had attended a briefing session; and



The use of supplier-motivated recruitment, where service providers leveraged existing relationships and trust to recruit participants.

### Distribution of program benefits

For the purposes of this evaluation, program benefits delivered to participant businesses through the MEF program include funding support, energy savings and energy bill savings. As seen below, the geographic distribution of these benefits generally remained consistent with the rates of participation. As noted above, regional areas did not benefit from the CAMO pilot.

Table 5: Geographic distribution of realised MEF program benefits

Benefit	Metropolitan Sydney (%)	Regional (%)	Deep Regional (%)
Funding	54%	16%	30%
Electricity savings (MWh/year)	70%	14%	16%
Gas savings (GJ/year)	43%	12%	45%
Electricity bill savings (\$/year)	62%	16%	22%
Gas bill savings (\$/year)	63%	10%	27%

Source: MEF program data.

Note: The above figures include actual funding paid to MEF program participants and reported post-implementation savings, including those that are M&V and non-M&V. The sample used to compute the geographic distribution of funding includes participants that have completed or ongoing contracts across all offers, including the CASSP and CAMO pilots. The sample used to compute the geographic distribution of electricity savings and electricity bill savings includes participants that have completed or ongoing contracts across Round 1 and 2 offers and CASSP only. The sample used to compute the geographic distribution of gas savings and gas bill savings includes participants that have completed or ongoing contracts across Round 1 and 2 offers only.






## Program impacts on capacity and capability

### 02.1 To what extent did the program improve the understanding, confidence and practices of participant businesses in energy efficiency or in other business areas?

Insights and feedback from key stakeholders suggested that the MEF program had mixed results in improving the understanding, confidence, and practices of participant businesses in energy efficiency and other areas. Program offers related to metering and monitoring were found to have had a significant impact on improving businesses' understanding and practices related to energy use and

improving their confidence in identifying new energy efficiency projects. However, capital upgrade offers were found to have a more limited impact.

Metering and monitoring offers, however, were found to have several long-term benefits for businesses including:

	Enabling businesses to more holistically manage their operations.		Providing real-time data to identify issues and refine processes.
	Identifying future energy efficiency projects and opportunities.		Strengthening business case for future energy efficiency projects.
	Informing net-zero pathways and organisational strategy.		




While capital upgrade offers were successful in improving the business case for capital projects and bringing projects forward, they were found to have limited impact on business practices beyond implementation.

The CASSP was particularly helpful for participants in understanding their compressed air and steam use, detecting leaks and inefficiencies, and identifying larger opportunities to optimise their operations. Additionally, many opportunities identified through the CASSP were classed as ‘simple fixes’, leading to rapid improvements and a boost in confidence in the performance of the business. This was mainly driven by the metering and monitoring systems installed onsite, providing participating business with previously unavailable data on their production performance and service providers with sound evidence upon which they can identify and explore new and practical energy efficiency opportunities with their clients.

Due to the limited nature of delivery under the CAMO pilot, this evaluation is not able to draw conclusions on the pilot’s impact on the understanding, confidence, and practices of participants.

**02.2 To what extent has the MEF program removed barriers and enabled participant businesses to develop other energy efficiency projects, including beyond the life of the program?**

The MEF program contributed to addressing several barriers preventing businesses from investing in energy efficiency projects, such as metering and monitoring. These include:

	Improving overall awareness of the value-add and the business case for investment in energy monitoring and metering projects.
	Enabling businesses who implemented monitoring and metering projects to use data to plan and prioritise future energy efficiency projects.
	Addressing prohibitive implementation cost barriers for some businesses considering capital upgrades.

The program did this by providing participating businesses with access to technical support and guidance as well as allowing some to improve their understanding of their business’ energy performance and needs. Importantly, the program improved businesses’ awareness of the value-add of metering and monitoring projects that, while not leading to immediate returns on investment, provided businesses with previously inaccessible insights and the ability to consider broader energy efficiency and net-zero strategies.

With respect to the CASSP, feedback from service providers suggests the pilot helped to:

- Address cost barriers for some business to access compressed air and steam services, with the level of funding provided under the pilots sufficient to encourage uptake.
- Equip participants with the energy use data and information they needed to produce evidence-based proposals and business cases to secure project funding.
- Highlight and increase awareness of the usefulness of compressed air and steam efficiency assessments for participants

Of surveyed CASSP participants, 50 per cent reported that it was unlikely they would have engaged compressed air and steam services in the absence of the program. Service providers suggested approximately 70 per cent of participants had gone on to implement recommended projects, however sufficient implementation data was not available.

While the program contributed to addressing some barriers, consultations with MEF program participants and service providers identified several barriers that remained or emerged during the program that prevented some businesses from accessing opportunities or considering opportunities in the future, which were:

- Possible risks to production stoppage associated with swapping out critical equipment
- The level of funding support made available by the program was in some cases insufficient, leading some businesses to opt out of the program or preventing them from pursuing larger energy efficiency projects.
- Continued low awareness and maturity of energy efficiency capabilities and practices highlighting the need for sustained support beyond the MEF program.
- Phasing of offers across the EMS and MEF programs were not aligned, leading to overlaps in funding rounds and leaving participating businesses with limited time to prepare applications for complementary offers across the programs.

Beyond the life of the MEF program, participating businesses commonly identified additional funding availability and a continued focus on addressing awareness and accessibility barriers for monitoring and metering capabilities as key drivers of future benefits.

### **O2.3 To what extent did the MEF program increase the capacity and/or confidence of service providers to deliver energy efficiency services?**

The MEF program was supported by around 25 service providers across the industry who delivered a range of activities. These service providers delivered a range of activities including:

- Recruiting clients to participate in the program.
- Advising participating businesses on appropriate energy efficiency projects to undertake in their business.
- Supporting the funding application process.
- Supporting the implementation of the project.
- Supporting reporting and post implementation measurement and verification assessments.

The delivery of these activities resulted in the following key impacts on supplier capacity and confidence.



Service providers developed unique skills and experience in advising on, and implementing, energy management systems.



Capacity and skills built through delivery of projects enabled some service providers to deliver similar projects, such as metering and monitoring, interstate without funding support.



The multifaceted role of service providers throughout the MEF program served to deepen the relationship they have with their clients.



Service providers noted capital upgrade offers did not have significant impact on capacity or confidence, as many service providers delivered these project types prior to the MEF program.

The CASSP and CAMO pilot had mixed impacts on the capacity and confidence of service providers:

- The CASSP was found to have:
  - Encouraged service providers to deliver a more value-add service, allowing them to identify opportunities to provide broader advisory and optimisation services.
  - Increased service provider’s awareness of the scale of opportunities around compressed air and steam systems.
  - Helped to develop and strengthen business relationships, increasing provider’s awareness of new opportunities and creating a pipeline of projects beyond the life of the MEF program.
- The CAMO pilot was found to have had minimal impact on supplier behaviour as only five projects were completed under this pilot.

## Efficiency of funding processes and administration

### 03.1 To what extent was co-funding to participant businesses administered efficiently?

The MEF program’s co-funding model was generally viewed positively by service providers and businesses. The model was viewed positively because:

- It encouraged businesses to genuinely consider the relative costs and benefits of projects, often elevating business cases to Board consideration, giving senior executives visibility of projects and likely implications.
- The requirements for co-investment by businesses removed frivolous applications.
- The funding mechanisms and levels were deemed to be sensible and appropriate to get projects off the ground.

Regarding the administrative efficiency of the program, while the absolute cost of delivery was broadly aligned with the projections at initiation, when viewed as a proportion of incentives delivered, program management and delivery costs contributed approximately 43 per cent of the total program costs, as of November 2021.

This distribution of program costs is driven by the following factors.

Factor	Outline
<b>Funding reduction</b>	The MEF program funding was reduced in mid-2020, resulting in the program budget falling from \$23 million to \$13.8 million. While funding was reduced, other program costs, such as labour costs, remained consistent increasing the relative proportion of program management and delivery costs as a share of total program costs.

Factor	Outline
<b>Constraints on capability and capacity</b>	<p>The process evaluation of the program identified the following constraints on capability and capacity impacting delivery:</p> <ul style="list-style-type: none"> <li>• Initial recruitment of staff with the technical capability to deliver on the program’s M&amp;V requirements.</li> <li>• The late rush of applications at the end of Round 1, which was exacerbated by the lack of internal technical expertise in M&amp;V.</li> <li>• Compressed timeframes prior to program launch and between funding rounds.</li> <li>• Additional activities such as procurement and communication of the program.</li> </ul>
<b>Rigorous M&amp;V process and data management</b>	<p>The Department embedded a rigorous M&amp;V process as part of the program. An M&amp;V process such as that adopted under the MEF program enables:</p> <ul style="list-style-type: none"> <li>• Participating businesses, service providers, and the Department to attain a better understanding of the impact of implemented projects</li> <li>• The Department to gain greater insights to inform future program design.</li> <li>• The development of a more mature M&amp;V capability in the Department as well as the broader market.</li> </ul> <p>However, while these are positive outcomes, the rigorous nature of the M&amp;V process increased the work for the program team due to the more complex nature of the data collection and management required to ensure consistent and robust measurement takes place.</p>
<b>Lack of an established grants management process</b>	<p>At establishment the project team did not have access to existing grants management processes or platforms, placing additional resourcing constraints on the program team. The project team went on to procure a bespoke grants management platform for Round 2, however, this solution failed to meet the program team’s needs.</p>

While this evaluation considers efficiency, it does not address broader economic evaluation.



## Recommendations

Based on the key findings and insights identified through the evaluation, six recommendations were identified to support possible changes in the design and delivery of future programs. These recommendations are outlined below.

Recommendation	Rationale and supporting evidence	Recommendation benefits
<p><b>1 To maximise the impact of government support, the Department should consider targeting support on enabling opportunities, such as metering and monitoring projects, where market uptake of energy saving technologies is low.</b></p>	<p>Consultation with both service providers and businesses suggested many of the projects funded under the capital upgrade offers, would have occurred regardless of the MEF program, however the program brought projects forward.</p> <p>The funding of metering and monitoring offers were novel with many businesses not considering these projects prior to the program. Projects enabled future opportunities such as consideration of net zero targets.</p> <p>This was also found to be the case with the support provided by the CASSP, where consideration of efficiency upgrades for compressed air and/or steam processes by businesses was low relative to other types of upgrades.</p> <p>Targeting markets where uptake is low, such as metering and monitoring systems, is likely to result in greater additionality and more transformational change.</p>	<ul style="list-style-type: none"> <li>• Targeting markets and technologies where uptake is low would likely result in:               <ul style="list-style-type: none"> <li>– Greater program additionality.</li> <li>– Greater value for money.</li> <li>– Introduced potential for industry transformation.</li> </ul> </li> <li>• Further consideration of funding for enabling technologies may be beneficial as:               <ul style="list-style-type: none"> <li>– This is an enabling technology for businesses to consider detailed net zero pathways.</li> <li>– The business case for investment in these technologies is in many cases still prohibitive.</li> <li>– There is room for greater maturity and transformation.</li> </ul> </li> </ul>
<p><b>2 To achieve greater value and more cost-effective use of technical assessments and processes, such as M&amp;V, the Department should give greater consideration to when and to which types of projects those assessments and processes are applied.</b></p>	<p>Feedback from stakeholders suggested some of the administrative requirements of the M&amp;V process were not as streamlined or efficient as they could have been.</p> <p>Discussions with Department staff suggested that the processing, verification, and interrogation of M&amp;V activities and M&amp;V reports placed additional requirements on internal resources.</p> <p>This was especially the case during the application stage, where high technical and M&amp;V requirements significantly increased the burden on the program team and the resource intensity of processing applications.</p>	<ul style="list-style-type: none"> <li>• Targeted consideration of the application of technical assessments and processes, such as M&amp;V, reduces resource requirements on program teams and the administrative burden placed on service providers and participating businesses.</li> <li>• There can be greater value in the information obtained by applying the use of M&amp;V to projects or program offers where market uptake is particularly low, or where there is limited market maturity, such as metering and monitoring systems. The detailed information obtained from these projects can be used to develop an evidence base to encourage greater market changes.</li> </ul>

Recommendation	Rationale and supporting evidence	Recommendation benefits
	<p>This raises the need for greater consideration of what information is required, how this information will be used, and if the costs of collecting this information is outweighed by the benefits the information provides. For example, the usefulness of detailed M&amp;V for capital upgrades may not be as insightful as for metering and monitoring projects, where uptake is relatively low.</p>	
<p><b>3 To improve the overall efficiency of its programs, the Department should give greater consideration to opportunities to better coordinate internal systems and processes.</b></p>	<p>Consultations with the program team suggested that coordination of internal systems and processes could enhance program efficiency and cost-effectiveness. Sourcing of an external contract management solution due to an inability to access existing grants management platforms within the Department led to avoidable time and procurement costs for the program.</p>	<ul style="list-style-type: none"> <li>• More efficient administration and processes allow the program team to focus on refining program offers, more impactful project delivery activities, and gathering insights to inform enhanced outcomes for program participants.</li> <li>• Leveraging internal systems and processes where appropriate mitigates the need for additional program spending and frees up capacity. This saves programs time and money that can be directed towards delivery and ensuring offers are fit for the needs of NSW energy users.</li> </ul>
<p><b>4 To improve the overall effectiveness of its programs, the Department should give greater consideration to the phasing and linkages between its CCF programs, adopting a more integrated approach where possible.</b></p>	<p>Consultation with service providers and businesses noted that the phasing and linkages between the MEF and EMS programs was not aligned for some participants. Some participants noted that they were not aware of EMS program offers when they applied for funding under the concurrent capital upgrade and metering and monitoring offers. A more coordinated delivery and phasing of offers between the EMS and MEF programs could have enhanced offer uptake and the overall effectiveness of the respective programs.</p>	<ul style="list-style-type: none"> <li>• The Department is better placed to identify and address inefficiencies in design and delivery across a suite of programs, allowing for adaptive learning over time.</li> <li>• A clearly defined roadmap or guide between programs provides service providers and partners with a more comprehensive narrative to outline benefits of participation to potential businesses, improving the customer journey.</li> <li>• Future net zero and energy efficiency programs are more likely to achieve sustained outcomes for energy users, transformation within the NSW energy efficiency market ecosystem, and an effective and efficient transition to a net zero economy.</li> </ul>

Recommendation	Rationale and supporting evidence	Recommendation benefits
<p><b>5 To encourage sustained industry transformation, the Department should consider longer, phased programs.</b></p>	<p>Feedback from service providers noted that any market transformation in businesses' understanding and appreciation of an area takes time, particularly in an immature energy management systems market where uptake of systems is relatively low across NSW businesses.</p> <p>Service providers felt that for the metering and monitoring offers, the program ended just as they had begun to refine the value proposition and build momentum around energy management systems. Feedback suggested that a longer availability of the offer may have had a greater impact on driving the uptake of metering and monitoring systems.</p> <p>The duration and phasing of different program offers may have also limited the participation of some businesses, resulting in the program missing projects that would have been additional i.e. projects that would not have occurred in the absence of the MEF program. Future program delivery should be considered alongside strong engagement with stakeholders during the design stage and appropriate phasing across programs.</p>	<ul style="list-style-type: none"> <li>• Longer programs linked to clear strategies or policies for program evolution: <ul style="list-style-type: none"> <li>– Provide service providers with greater certainty upon which they can make investment decisions.</li> <li>– Enable the Department to effectively achieve changes in energy consumption behaviour and more sustained market transformation.</li> </ul> </li> </ul>
<p><b>6 To enable robust assessments of cost-efficiency and performance of future programs, the Department should consider adopting clear and consistent processes and practices for classifying, collecting, and managing financial data and information on program management and delivery costs. Approaches to</b></p>	<p>Consultations with Department stakeholders have identified a systemic issue in the classification, and access to detailed information relating to the financial performance of the MEF program.</p> <p>As a result of a lack of clear and consistent processes and practices, program development, management, and delivery costs may not reflect the complexity of program delivery or be easily categorisable or trackable over time. This limits assessment of cost-efficiency and the ability of program teams and the Department to identify and implement cost-efficiency maximising opportunities.</p> <p>In the case of the MEF program, this outcome evaluation was unable to perform a robust assessment of the</p>	<ul style="list-style-type: none"> <li>• Assessments of the cost-efficiency and performance of future programs will be enabled by a robust evidence base.</li> <li>• Improved understanding in the long-term of the cost-efficiency of different program mechanisms and processes, allowing lessons for greater cost-efficiency to be embedded in the design of future programs.</li> <li>• The Department is better positioned to monitor the use of funding across its programs, enabling greater accountability and transparency for internal and external stakeholders across government and the community.</li> </ul>

## Recommendation

## Rationale and supporting evidence

## Recommendation benefits

**categorising expenditure and defining efficiency should be assessed against the administrative effort involved.**

program's cost-efficiency. This was driven by financial data that prevented the quantification of various cost items, including 'set up costs', daily project management costs, apportioned costs of each 'round' or pilot, and detailed staffing costs. Sourcing data on the costs of the program was time consuming for the program team to complete, indicating that the information was not readily categorised in a way suitable for this kind of analysis.

To address these data limitations, a clear and consistent set of guidelines and practices for the collection of detailed financial data and information should be adopted for all Department programs. This should include considerations for:

- The determination, specification, and application of more detailed cost categories/codes to enable effective comparison between and within programs.
- The development of consistent financial reporting requirements and structures to enable more detailed tracking of program performance.
- Governance arrangements that clearly outline the parties that have ownership of and responsibility for the collection and management of data and information.
- Broadening access to program financial information to program team members to allow costs to be monitored over time.



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