ClimateWorks Australia

Submission to the Senate Economics Legislation Committee into Energy Efficiency Opportunities (Repeal) Bill 2014

20 June 2014

SUMMARY

ClimateWorks Australia is an independent, evidence-based research institute, a partnership between Monash University and The Myer Foundation. This submission presents the implications of ClimateWorks Australia's research in relation to the Energy Efficiency Opportunities (Repeal) Bill 2014.

Since its beginning in 2009, ClimateWorks has conducted extensive research on energy efficiency. This submission draws on this research, particularly the *Industrial Energy Efficiency Data Analysis Project* and *Tracking Progress Towards a Low Carbon Economy* reports.

The following points summarise ClimateWorks' submission:

1. The EEO program has delivered an additional $291 million in annual net financial savings for participating businesses. The energy savings enabled by EEO account for around 41% of all energy savings achieved in the sector .
2. The EEO has delivered additional energy savings by building companies' skills, knowledge and processes to implement energy efficiency activities
3. After the carbon price, the EEO was reported to have the greatest influence on motivating companies to implement future energy efficiency activities.
4. While company capability has improved, there remains significant potential for improvement – removing the EEO could erode some of the benefits that have resulted from the program and limit the extent to which this outstanding potential is captured

FINDINGS

1. **The EEO program has delivered an additional $291 million in annual net financial savings for participating businesses. The energy savings enabled by EEO account for around 41% of all energy savings achieved in the sector[1].**

In research[2] conducted by ClimateWorks Australia on the energy savings enabled by the Energy Efficiency Opportunities (EEO) program in its first cycle and proposed second cycle, it was identified the program had been successful in enabling an additional 35 PJ of energy savings in the industrial sector compared to what would have occurred without the program. The results of this analysis showed additional energy savings enabled by EEO account for around 41% of all energy savings achieved in the sector, with additional energy savings delivering a net annual financial savings of $291 million.

It is interesting to note that this research found that the additional savings are primarily found in the 0-2 year payback range, and that the majority of additional savings enabled by EEO are low cost opportunities. Of the high cost opportunities taken up, over 70% are enabled by the EEO program. This helps address the question sometimes asked by those less familiar with energy efficiency policy of whether an is incentive needed. The reasons are further explored below but the evidence here confirms that even for low cost opportunities the volume undertaken is less in the absence of the EEO policy.

Distribution of EEO additional energy savings between 2006-07 and 2011-12, by payback range

Payback range	Energy savings achieved with EEO (PJ)	Energy Savings achieved without EEO (PJ)	Additional Energy Savings (PJ)	Additional savings as % of total savings achieved	Additional Greenhouse Gas Savings (kt CO2-e)	Net changes in fuel costs ($m per annum in 2010-11)
0-2 years	62.2	32.4	29.8	48%	2,064.4	-286.7
2-4 years	8.4	7.6	0.8	10%	135.6	-20.5
4+ years	13.8	9.8	4.0	29%	520.7	16.6
Total	**84.3**	**49.7**	**34.6**	**41%**	**2,720.6**	**-290.5**

Distribution of EEO additional energy savings between 2006-07 and 2011-12, by project cost

Project costs	Energy savings achieved with EEO (PJ)	Energy Savings achieved without EEO (PJ)	Additional Energy Savings (PJ)	Additional savings as % of total savings achieved	Additional Greenhouse Gas Savings (kt CO2-e)	Net changes in fuel costs ($m per annum in 2010-11)
High	6.9	2.0	4.9	71%	683.5	-8.4
Medium	14.3	10.8	3.5	25%	443.0	-103.6
Low	63.1	36.9	26.2	41%	1,594.0	-178.6
Total	**84.3**	**49.7**	**34.6**	**41%**	**2,720.6**	**-290.5**

[1] ClimateWorks Australia 'Energy Efficiency Opportunities Program Additionality Analysis', Technical Report, April 2013, available at energyefficiencyopportunities.gov.au/files/2013/05/EEO-Additionality-Report.pdf
[2] Ibid

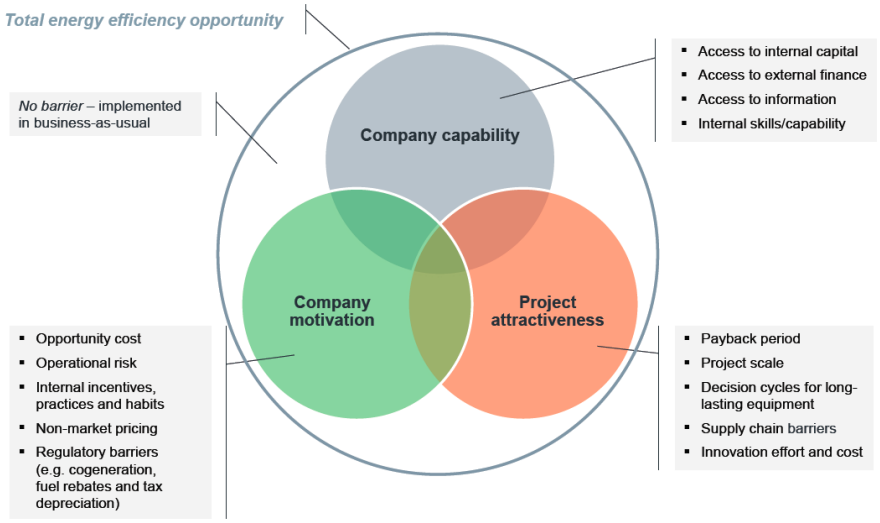
2. The EEO has delivered additional energy savings by building companies' skills, knowledge and processes to implement energy efficiency activities

In an extensive study[3] by ClimateWorks that looked at factors influencing large industrial energy efficiency, 95 per cent of respondents rated energy data collection and management processes as having a significant impact on energy efficiency activity, as well as 93 per cent rating highly the importance of energy management staff.

In the same report, a number of respondents noted that it was a combination of energy price rises coupled with other drivers that had encouraged activity over recent years, including the compliance requirements and capacity-building of the EEO program, the introduction of the carbon price (including preparation for previous carbon price-related policies), senior management focus, and reputational or supply chain drivers.

Based on our research[4] into understanding company factors influencing the uptake of untapped energy efficiency potential, ClimateWorks developed the framework illustrated below. These factors are interconnected into three major categories: company capability, company motivation and project attractiveness.

Categories of factors that inhibit industrial energy efficiency activity[5].



It is clear from both ClimateWorks' research[6] and the EEO Full-Cycle Review (ACIL Tasman 2013) that company capabilities resulting from the EEO have significantly improved. These capabilities improvements include an increase in internal skills and information availability within companies that support the identification and implementation of energy efficiency opportunities.

---

[3] *Tracking Australia's Progress Towards a Low Carbon Economy: Special Report on Factors Influencing Large Industry Energy Efficiency*, available via www.climateworksaustralia.org/project/current/tracking-progress-towards-low-carbon-economy

[4] *Impact of the Carbon Price Package,* available at www.climateworksaustralia.org/project/national-plan/impact-carbon-price-package

[5] *Industrial Energy Efficiency Data Analysis Project*, report available at www.climateworksaustralia.org/project/current/industrial-energy-efficiency-data-analysis

[6] *Tracking Australia's Progress Towards a Low Carbon Economy: Special Report on Factors Influencing Large Industry Energy Efficiency*, available via www.climateworksaustralia.org/project/current/tracking-progress-towards-low-carbon-economy

In ClimateWorks' research on 47 large industrial companies participating in the Australian Government's EEO program, 80 per cent of respondents stated the Program was a key influence on energy efficiency activity. These respondents also reported it had been particularly useful in providing a structure for energy management. Specifically, the respondents stated that: [7]

- The EEO was an enabler to reframe attitudes and support actions.
- The compliance basis had provided a means by which staff could cut through cultural factors that could have otherwise inhibited action on energy management.
- The program had acted as a catalyst, through the compliance process, to manage the cost variability of energy.
- The EEO program and the National Greenhouse and Energy Reporting Scheme (NGERS) together had provided a set of energy data management processes that were crucial to act with confidence on energy efficiency and driving improvements.

Instrumental to establishing an energy management structure was having dedicated energy management staff, with the *Tracking Progress Towards a Low Carbon Economy* Special Report revealing this was a key driver. [8] This finding was also supported by the EEO mid-cycle report that stated before the EEO more than 50 per cent of companies had no single point of contact for energy management, falling to less than 30 per cent after the program's commencement (DRET 2010). At the same time, EEO companies with a dedicated corporate energy team increased from less than 10 per cent before the introduction of the program to nearly 30 per cent. This increase in staff strongly correlates with ClimateWorks research that this helped to foster a culture that values and embeds energy efficiency, which led to a higher rate of identification and implementation of energy efficiency projects.

A key differentiating factor to ensuring the energy savings projects were implemented was the regular analysis of energy data[9]. This was critical in achieving higher levels of implementation, with companies strong in this practice achieving nearly four times as many energy savings. It was further revealed that these savings could not be achieved without having skilled staff. ClimateWorks research verified this with 67 per cent of respondents listing internal incentives, practices and habits, as necessary to further energy efficient activity, with 66 per cent also identifying internal skills and capabilities. [10] In interviews, respondents noted that the combination of NGERS, the EEO program, rising energy prices and the impending carbon price had all motivated them to increase their energy management staffing.[11]

Also, board and senior management oversight was strongly correlated with higher levels of energy efficiency implementation. This had an impact on energy savings at all stages of the pipeline, with companies rating highly in this area achieving nearly three times as many energy savings compared to respondents with low scores. The EEO program has a requirement of board oversight.

[7] *Ibid*, p 19.
[8] *Ibid,* p56
[9] *Ibid,* p 48
[10] *Ibid,* p39
[11] *Ibid,* p 21.

3. After the carbon price, the EEO was reported to have the greatest influence on motivating companies to implement future energy efficiency activities

The second major category of our research[12] into understanding barriers to untapped energy efficiency potential is company motivation. Company motivation includes external and internal factors that have a strong impact on the motivation of a company in considering or implementing energy efficiency projects. The leading factors inhibiting motivation include a focus on growth, opportunity cost to higher return growth opportunities and economic or policy uncertainty.

While ClimateWorks' research revealed that rising energy prices have been a strong driver of energy efficiency activity, with 87 per cent of respondents reporting this, the presence of the carbon price also had a strong motivational impact. [13] Respondents stated that becoming liable under the carbon price scheme had focused their attention on energy and carbon management, and was the second highest motivational factor at 82 per cent. And when respondents were surveyed on the future influence of key regulations, policies and programs relating to energy efficiency, 91 per cent reported that the carbon price (including the Jobs and Competitiveness Program assistance) is likely to have the greatest influence on their energy efficiency activity in the future; with the next strongest influence being the EEO at 76 per cent.

In the absence or either a carbon price or the EEO program, company uncertainty on energy management is likely to prevail, which was a key learning from our *Tracking Progress Towards a Low Carbon Economy*[14] study. This report found that uncertainty could impede activities to seek energy savings in the future if there are no stable and sufficient policy drivers or incentives over the longer term. The coal industry is a salient example of this uncertainty in the uptake of technology to capture fugitive emissions, with our research revealing that a carbon price or other incentive is needed to trigger equipment investment. Furthermore, in ClimateWorks' 2011 update to a *Low Carbon Growth Plan for Australia*[15], it was identified that Government policy is key to stimulating energy efficiency action and that for many opportunities to be realised a range of complementary polices are needed.

Moreover, ClimateWorks research[16] further indicates that strong production growth is expected to increase emissions from industry by 37 per cent by 2019-20, with improvements in emissions intensity set to reduce only a third of this growth. Given this, it is imperative that company motivation be sustained to ensure energy efficiency opportunities are identified and implemented to offset this predicted emissions growth. Given the uncertainty over the carbon price, the EEO program may be even more important in supporting companies to maintain momentum.

---

[12] *Impact of the Carbon Price Package,* available at www.climateworksaustralia.org/project/national-plan/impact-carbon-price-package

[13] Tracking Australia's Progress Towards a Low Carbon Economy: Special Report on Factors Influencing Large Industry Energy Efficiency, p 15. Available via www.climateworksaustralia.org/project/current/tracking-progress-towards-low-carbon-economy.

[14] *Ibid*.

[15] *Low Carbon Growth Plan 2011 Update,* available at www.climateworksaustralia.org/project/national-plan/low-carbon-growth-plan-australia-2011-update-cost-delay

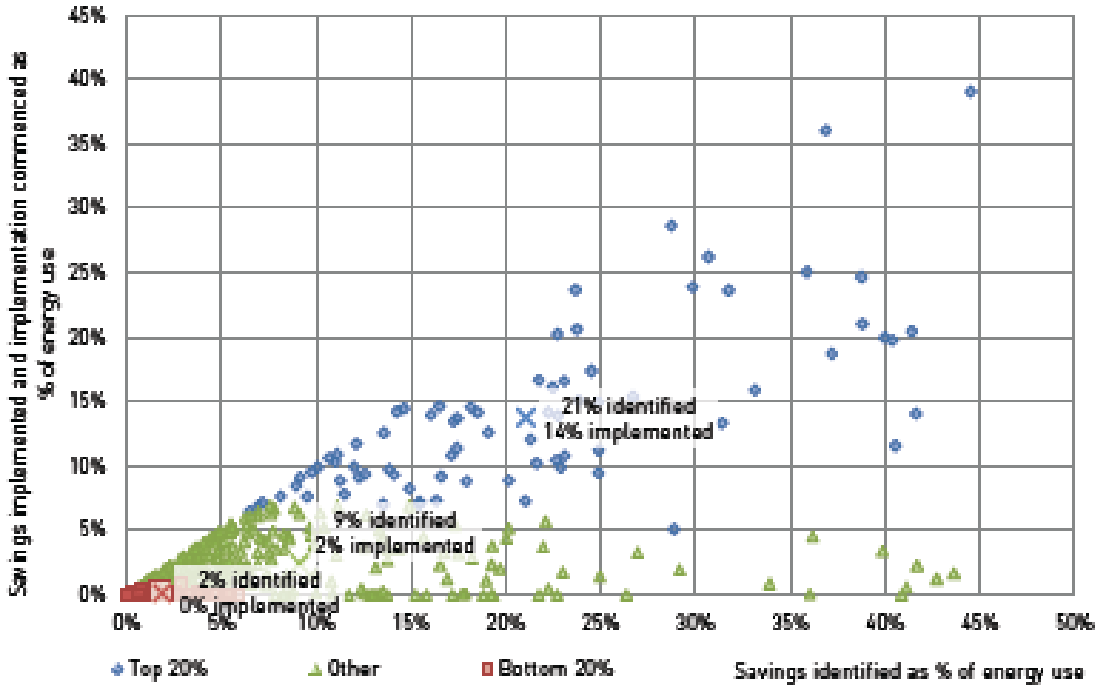
[16] Available at www.climateworksaustralia.org/project/current/tracking-progress-towards-low-carbon-economy

4. While company capability has improved, there remains significant potential for improvement – removing the EEO could erode some of the benefits that have resulted from the program and limit the extent to which this outstanding potential is captured

Overall, ClimateWorks research indicates that while company capabilities are improving, there is still a wide variation of performance on energy efficiency. This occurs even between companies of similar size energy use and within sectors. ClimateWorks research based largely on data reported through the EEO program found that the top performing companies identified savings equivalent to 21 per cent of their energy use and more than 60 per cent of identified savings were converted into implemented projects. However the middle 60% of companies identified an average of 9% and converted less than a third of this.

The chart below[17] illustrates this point. It shows the spread of companies' energy savings both identified and implemented under the EEO program. Three groups of companies are presented using different colours – the top 20 per cent of companies in terms of savings identified, implemented (as a per cent of energy use), and converted (as a per cent of savings identified) is shown in blue ("the top quintile"). The bottom 20 per cent of companies is shown in red ("the bottom quintile"). All other companies are shown in green. The energy savings implemented (as a per cent of energy use) are shown on the vertical axis – the higher the dot, the higher proportion of savings implemented. The energy savings identified (as a per cent of energy use) are shown on the horizontal axis.

Exhibit 6.45: Distribution of companies according to energy savings identified and energy savings implemented, % of energy use – All EEO companies (DRET 2011)



The same trend can be seen across different sectors and different levels of energy intensity – in other words, the top quintile implement significantly more savings than the average and the lowest quintile, independent of the company context. The only sector that displays a different trend is in

[17] *Ibid*, p 44.

metals manufacturing, but even in this sector, the best performing companies out-perform the rest by more than three times.[18]

In addition, ACIL Tasman's (2013) EEO Full-Cycle Review found that while the EEO program has led to improvements in energy efficiency understanding, focus and management but they are yet to be consolidated and embedded for ongoing energy efficiency identification and implementation. If the program is removed at this stage, and in the absence of a replacement, there is risk that some of the energy related capabilities developed over this period will be eroded before becoming fully embedded.

It is clear from the above charts that there is still considerable room for improvement in the majority of companies in the EEO program.

ClimateWorks' *Industrial Energy Efficiency Data Analysis Project* identified that around 60% of identified energy efficiency opportunities, representing $2.1 billion in potential energy savings across industry, are not currently expected to be implemented due to a range of factors. As noted above, there are multiple and competing factors which influence business decisions relating to energy efficiency, which means that not all identified energy efficiency opportunities are implemented. Some of this potential could be unlocked if the companies in the lower 'quintiles' as shown above improve energy management to the level of the companies in the higher 'quintiles'. The EEO program has been shown to contribute to improved energy management. The cost of maintaining the program is relatively small compared to the significant investor and societal benefits that could be realised through increased implementation of energy efficiency opportunities.

In addition, the EEO program has created a useful set of data that was previously not available. Much of the analysis undertaken in the *Industrial Energy Efficiency Data Analysis Project* would not have been possible without this data. The international policy community has shown interest in this. The importance of understanding energy use has increased since the introduction of the EEO program. If the EEO program is removed, this data will not be updated and there will be reduced ability for ongoing analysis of energy use in Australia.

[18] *Ibid*, pp 45-46.