



The Air Conditioning and Refrigeration Equipment Manufacturers Association (AREMA)
Submission on the GEMS Review

April 2018



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Introduction

Overall, AREMA supports MEPS and labelling as delivered through the GEMs Act as an effective means to deliver energy efficiency savings to the Australian community. Additionally, we believe that MEPS should be applied as comprehensively as practicable in order to have both the most impact and minimize the risk of free riders.

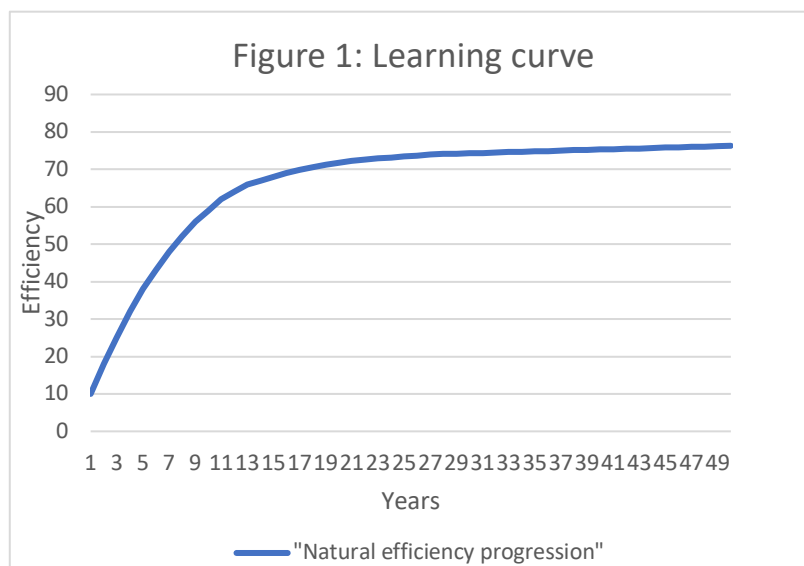
At the same time, we believe there are limits to GEMs in terms of what it can deliver and what products it should cover that are not being adequately assessed. Further there are some specific reforms being proposed that risk the cooperative and collegiate nature of government-industry engagement in delivering outcomes. This close cooperation does not just create a more comfortable working relationship, it is essential to ensuring measures are well targeted and that outcomes are maximized. It is imperative that any reforms as a result of this review ensures the ongoing collaboration and trust between government and industry.

Overarching comments about energy efficiency measures

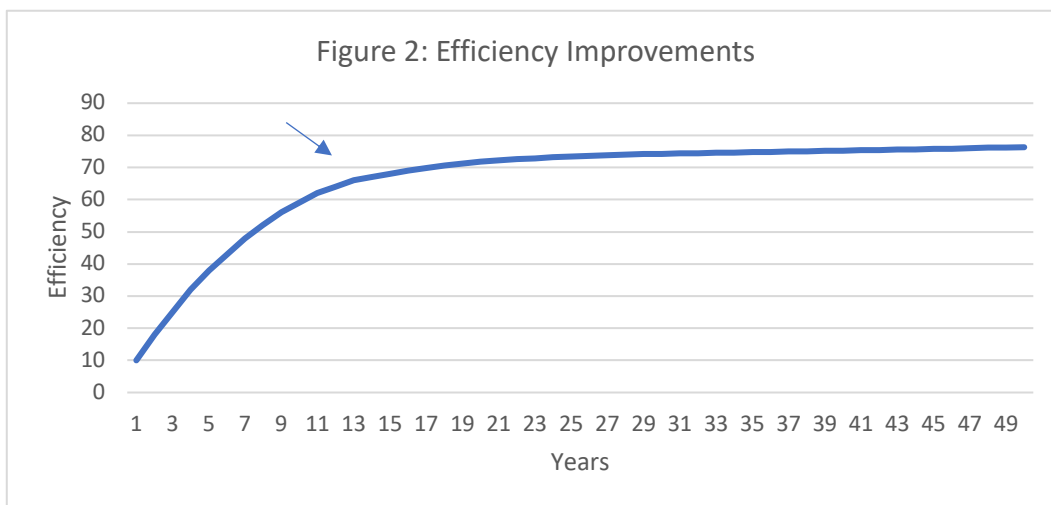
There is a false assumption made by many policy makers and much of the general public that there are always improvements that can be made to equipment that cost effectively improves its energy efficiency. It is this fallacy that presents the greatest risk to the ongoing effectiveness of the GEMs Act.

As products develop, they naturally get more efficient over time. Naturally, the largest improvements occur in the initial years when the technology is new and not yet fine-tuned. Over time the capacity for improvements diminishes as the technology matures and improves. There is nothing new in this observation – it is a well-established principle and describes a learning curve.

Figure 1 below provides an indicative illustration of this principle. The greatest improvements in efficiency occur in the early years and over time the potential for improvement decreases as the technology is better understood and the cost-effective improvements are increasingly made.



Energy efficiency measures temporarily accelerate the advancement of the learning curve, as well as removing under-performing equipment from the market. The emission savings are not permanent, they simply operate to bring to market technology before it would appear naturally. Figure 2 illustrates this understanding. Also, while the emission savings can be useful – they are represented by the area between the new line and the previous line (area coloured blue in Figure 2) the savings are temporary in nature and cannot be repeated forever: as the technology matures the opportunity for ongoing measures to cost effectively improve efficiency (and reduce electrical use and emissions) decreases.

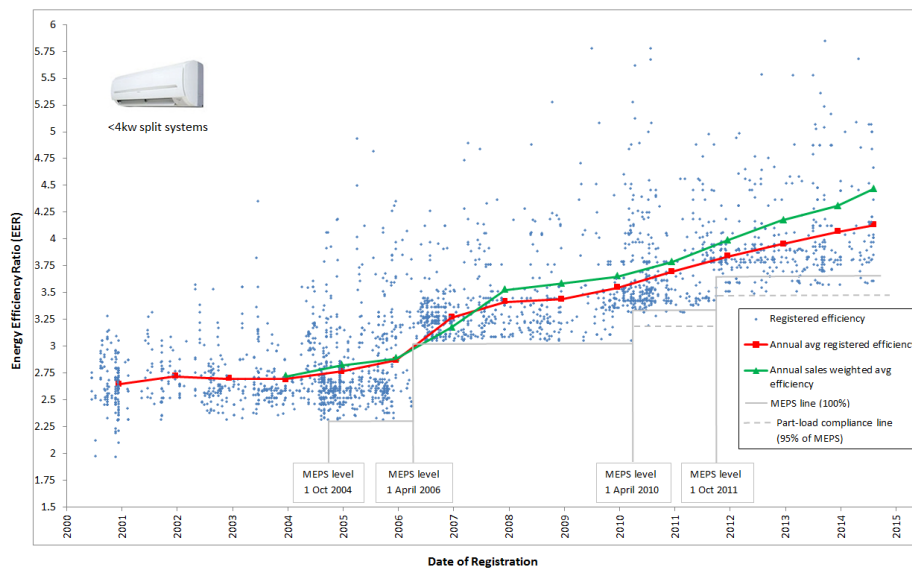


While perhaps not at the final stages yet, the capacity for air conditioning and much refrigeration equipment to deliver significant ongoing improvements in efficiency is decreasing.

In the latest research underpinning new requirements for air conditioning the Department of the Environment and Energy note that efficiency of air conditioning equipment at point of sale has been significantly improved, with a 60% increase over the last two decades alone. The challenge this represents, as stated in the recent (March 2016) Regulatory Impact Statement on air conditioners, is that further improvement is difficult. The low hanging fruit has been plucked already and further gains will be smaller and more expensive.¹ While policymakers would be correct in looking at cooling to find more emission reductions, point of sale does not necessarily offer an economically viable solution, at least not at significant scale.

¹ There is likely more potential reductions in refrigeration and large building chillers, and these opportunities are being pursued.

Figure 3: Improvements in efficiency of air conditioning



The delivered energy efficiency of air conditioning and refrigeration, however, is not analogous to other sectors. The efficiency delivered for most whitegoods/sectors is what is promised at point of sale: in other words, the technical and delivered energy efficiency are equal. The difference for most refrigeration and air conditioning equipment is that appropriate sizing and proficient installation is critical for delivery of the promised efficiency. There is potentially a significant disparity between technical and delivered efficiency. Further, regular maintenance underpins the continued achievement of promised performance levels.

Data on this topic is sparse, but suggests that the opportunities available at post point of sale issues of installation and maintenance offers significant potential. In looking at heat pumps (a very similar technology), the US Department of Energy concluded that improper installation led to an energy penalty of 40%. Additionally, industry advice is that about 20% of equipment is poorly installed. Even if these numbers are halved, the potential energy wastage and associated greenhouse gas emissions from efforts to reduce emissions at point of use, rather than point of sale, is significant. This does not even include the benefits possible from improved sizing of equipment and regular repairs and maintenance.

The potential benefit from government intervention in ensuring that the right equipment is chosen for the job and it is installed well is massive. Using the figure described in the paragraph above, and assuming 20% of Australia's energy emissions are from cooling (a conservative assumption), the total potential benefit equals 1.6% of Australia's energy emissions. Obviously, not all of these emissions can be eliminated, but even reducing this level of wasted emissions by a fraction still leads to significant reductions in emissions while simultaneously providing consumers and energy providers with a fiscal benefit by reducing their energy costs through reduction in demand, particularly at peak times.



In looking at air conditioning and some refrigeration sectors it is clear that a continued focus at point of sale will not continue to deliver results as they have in the past. That said, that does not mean that GEMs will become outdated. It will remain necessary to ensure less expensive and lower efficiency products do not enter the market. While not delivering abatement, this type of measure should be seen as protecting the baseline and preventing emissions slippage. Also, there is the potential for a new technology to be introduced offering a step change improvement, at which time having GEMs will enable quick government action. But, in order to ensure continued abatement through regulating cooling technology, there will need to be a focus on delivered energy efficiency through improving sizing, installation and maintenance either through GEMs, or an alternative mechanism.

Finally, AREMA is aware of proposals to change the GEMs metric from just energy efficiency to include greenhouse gas efficiencies. We do not support these concepts as the current approach enables balance between sectors and an “apples to apples” approach. Allowing increased metrics in pursuit of so-called precision will simply obfuscate findings and make policy development more difficult.

Gems coverage



AREMA has a level of concern about the expansion of GEMs into new product areas. While we recognise and agree with the principle that all products that can be covered should be included to ensure equal effort and the best total outcome for Australia we think care needs to be made in three regards:

1. It is only worth the transaction costs of including new products in the scheme where the energy and/or emission savings are material.
2. Care needs to be taken for treatment of those products which are large and bespoke (such as chillers and some refrigeration equipment). There needs to be a mechanism that reduces regulatory burden to enable these products to be included. As it stands, the regulatory costs are prohibitive which makes compliance with GEMs less than ideal.
3. Consideration of whether products that are components of MEPs regulated products (such as fans in air conditioners) should be included in the scheme.

In relation to the component issue, AREMA does not believe that it is good practice to have MEPS on products as well as components within the products. Inevitably this leads to overregulation, unnecessary complexity, high transaction costs and is generally poor policy – avoiding double regulation should be an underlying principle of the GEMs Act. Further, if an accurate assessment is made on the MEPs level for the product itself then there should not need to be, nor much benefit from, having MEPs on components.

If despite this objection there is a desire to continue to have MEPs on components, then there needs to be clear, transparently objective criteria that should be assessed and fully met before components are included in MEPS. Just including a component type because there is some evidence and it seems like the right thing to do – which has been the process followed to date – is insufficient.

Additionally, AREMA would propose that if components are included then there be no registration required, or registration fee paid, for a component of an item already covered by MEPs. Instead equipment manufacturers who include, for example, fans covered by MEPS could certify in the registration of their equipment that the fans met all of the requirements. If it was demonstrated that they did not meet MEPs through a compliance test, then the company would be subject to the same penalties that a fan manufacturer would receive for selling a fan that did not meet requirements.

The concept of including components in the GEMs scheme has arisen as a result of the European Union taking similar action over the last five years. However, the EU's scheme is significantly, and profoundly, different than the GEMs Act. In Europe there is a process of self-declaration without the need for registration, a registration fee or a compliance test. This makes the inclusion of components far less significant than it would be in Australia. It is worth pointing out that even with the lighter requirements in Europe industry reports that including components is burdensome and difficult and not delivering any additional outcomes as there has been little if any compliance activities.



There are areas where expansion of GEMs is possible and would be beneficial. AREMA proposes that consideration be given to including GEMs on flexible duct work.

Linkage with other schemes

AREMA understands the desire of the Department to keep GEMs tightly focused on energy efficiency. The fear that incorporation of different issues into the scheme would result in a loss of focus and efficiency is a genuine concern. On the other hand, industry has a strong desire to engage with Government in a one-stop shop. It is more efficient for industry if it can deal with a single consultation process that ticks many boxes and a coherent single piece of legislation that covers a range of industry issues. We recognise that the tension between these aims is a challenge.

There are, however, three areas where closer cooperation with other regulatory schemes simply must be considered to improve the efficiency of operations for both government and industry. These include:

- Ozone and Synthetic Greenhouse Gases – This scheme monitors imports of refrigerant used in equipment covered by GEMs. This includes about 80% of air conditioning and refrigeration equipment – these items are imported with a refrigerant charge. Companies are required to report these imports and details on the equipment. This data should be aligned with the needs of the GEMs regulator and shared to both improve the quality of equipment data in Australia and to reduce the need to engage with industry to provide data that Department could readily have already. This reform is simply too obvious not to pursue.
- The Department provides policy instructions on energy efficiency measures to the Australian Building Codes Board, which runs its own separate process including on energy efficiency. Industry is now stuck with the ludicrous condition of being subject to conflicting legislation covering the energy efficiency of the same products. There is no need for this double regulation and there needs to be a policy principle that double regulation will be avoided.
- Electrical Safety – almost every air conditioner and refrigerator need to be registered nationally to ensure it is safe to use. Consideration should be made about whether the GEMs registration and electrical safety registration can be combined. While this may not prove practical, at the very least there should be efforts made to make the registration systems mirror each other as much as practicable to reduce regulatory burden.

Process for making determinations

AREMA supports the current standards-based mechanism for establishing determinations as it ensure sufficient industry engagement.

We do recognize, however, that there are times when an alternative approach may be beneficial. The tests for AREMA in endorsing a process which forgoes standards is the level of certainty industry has about consultation in the alternative process. Without that certainty AREMA simply cannot support an alternative process.

There are two main areas where AREMA thinks there needs to be consideration.

1. The process of determining whether the standards-based approach or an alternative approach should be followed.

AREMA contends that the default position should be that a standards-based approach is followed. Industry has long history with a standards-based approach and it has served Australia well in the past.

In order for an alternative approach to be followed, AREMA proposes that pre-established criteria – triggers - need to be met. These criteria should be clearly described on a policy level, independent from consideration of any approach for further development of MEPs or labelling of an industry sector. AREMA would appreciate the opportunity to input on the design of these criteria.

AREMA also proposed that the Department should not be able to decide to follow an alternative to a standards-based approach without consulting with industry, and - ideally - gaining their endorsement before determining what approach will be followed. One of the reasons the air conditioning RIS process was so successful (a non-standards approach) is the painstaking consultation done by the Department and the willingness to reappraise a decision based on industry input. It is vital that this style of engagement commence at the beginning of a process, and not just at some point after the approach has already been decided and work begun.

2. The process of engagement with industry should an alternative to a standards-based approach be followed.

The process for engaging stakeholders under an alternative approach needs to be robust. There needs to be sufficient detail on the consultation process to be followed to provide industry with the necessary certainty on the process.

Industry has legitimate concerns about consultation that merely, “ticks the box”. For example, in the early days of the air conditioning RIS a consultant presented material on findings regarding the air conditioning industry at a meeting and asked for responses on the spot. While the Department did change approach when asked and allowed materials to be circulated and some time for reflection, this outcome was

not guaranteed. There needs to be protections against this sort of “faux consultation” in any revised process. Any proposed approach that deviates from a standards-based model needs to ensure industry has comfort that consultation will be genuine and input will be considered.

AREMA would also recommend the establishment of ACRA-like, industry-wide committees as part of the process. It suggests that the Department provide some certainty that these forums will meet at least several times during the development of new regulations on a particular sector.

In any alternative approach based on some sort of Technical Working Group (TWG) AREMA contends that there needs to be a percentage of places (perhaps 80%) reserved for industry participants. Additionally, AREMA proposes that and that guidance is given on how many members need to participate given the size and complexity of the sector being assessed. Additionally, AREMA proposes that the TWG:

- Should include an objective requiring members to collect and disseminate views of industry and other stakeholders in the TWG from those parties not present in the TWG.
- Should include a policy principle that all information should be shared widely with industry except in those rare circumstances where there is a compelling reason to keep it confidential.
- Should have an independent Chair, and not necessarily a Department official.
- Should ensure the Chair is obligated to advise the Department on when and how further consultation is required, and where proposed approaches are not supported by industry.
- Whilst the process of finalising both new MEPs levels and labelling requirements for air conditioners has not yet been finalised, the experience of AREMA members in this process - which did not proceed through the use of standards - has been extremely positive. There has been significant ongoing consultation through preparation of discussion papers, sharing of draft RIS and determination documents, use of the Air Conditioning and Refrigeration Advisory Committee (ACRA) meetings, special meetings to discuss key issues, meetings with specific industry players and participation at AREMA meetings and those of other industry associations. We have no doubt that the Department can use an alternative to a standards-based process fairly, with effective consultation and arrive at conclusions that not only can industry live with, but actively support.

Finally, AREMA appreciates the desire of regulators just to finalise the levels and get them implemented as soon as possible. However, there has been an ongoing drift to shorter timeframes between determination and commencement of the new requirements. AREMA contends that a three-year period be implemented from determination to application in order to provide industry with the capacity to redesign and introduce models into Australia.

Registration, families and cost recovery

For some category of products registration simply works. There are sufficient products sold with clear definition that allows registration to be comparatively easy and straightforward. This is not universally true, however, and there needs to be alternative approaches provided to manage these issues. The two exceptions that exist for AREMA's members are chillers and fans.

- Chillers can be one off sales and companies may only sell a few every year. Registering a model that is supported by only a handful of sales is simply not reasonable. Perhaps for these instances a moderate flat fee for the company could be levied and allow registration of up to 10 models with no more than 30 sales per year. These numbers are indicative only, but are meant to describe a process that could work. Similarly, perhaps in instances like this check testing should not be required, but rather demonstration of the energy modelling as check testing a chiller is expensive and difficult.
- There are up to tens of thousands of different fan models sold on the Australian market every year. If MEPs proceeds on fans, then an alternative approach will also be needed. AREMA notes that a possible approach would be that companies pay a flat fee for that covers all of their products and that they be obliged to share their modelling that is used to demonstrate the efficiency of the fan. This would mean there would be no registration or check testing, but funds to enable compliance testing would be available and if a company did not meet MEPs it could be pursued. The issue with this approach is that it is far less robust than what occurs in other sectors and there is a real issue with equity.

AREMA also contends that there is a fundamental flaw in the Department's logic in moving towards full cost recovery arrangements. We agree that there was a policy decision to move towards full cost recovery for registration costs and compliance activities for the GEMs program. However, we note that according to the Australian Government Cost Recovery Guidelines issued by the Department of Finance that, "cost recovery can promote equity, whereby the recipients of a government activity, rather than the general public, bear its costs."

As the discussion paper highlights, the benefits to the community from GEMs is dramatic and clear. The discussion paper states that,

From 2015 to 2020, the GEMS regulations are projected to deliver a further net benefit of between \$5.1 and \$11 billion. In this same period, the program is projected to deliver between 27 and 44 million tonnes of greenhouse gas emissions savings.

Government revenue based on savings of up to \$11 billion would far exceed the costs of this program. While some charge to register products is understandable moving to full cost recovery is not justifiable on the Department's own figures. Additionally, AREMA observes that its members do not directly benefit by being charged to register products. AREMA does recognise that placing the charge on products at a point of sale is an efficient

approach, however, a more equitable solution that reflects overarching policy would involve a co-funding model where Government's provided some funding for the program.



Compliance

AREMA strongly supports robust and active compliance and enforcement action. It is simply unjust to have responsible industry players meet the rules and have unfair competition from those cowboys outside of the mainstream that look to circumvent the law. We would propose that there is a significant ramping up of compliance efforts going forward particularly as the nature of energy efficiency measure shifts from driving technological advancement to protecting the baseline as described in the first section of this submission.

AREMA also notes the emphasis placed by the Department of Finance on ongoing and active engagement between Government and industry in those instances where cost recovery activity occurs. AREMA proposes that industry should be an active participant in setting the direction of the compliance program rather than a stakeholder who is occasionally consulted. In particular, AREMA proposes that the Department include relevant industry associations in discussions and decision-making processes on both the amount and focus of compliance activity on at least an annual basis. These activities are crucial to industry, they rely on industry feedback to be effective (eg intelligence led) and given that the policy linkages between registration and cost recovery this would be a fundamental and useful reform.

E3 has been considering the development of MEPs on fans for some time. Current discussions have become bogged due to two main problems which arise because this industry does not fit well under the current GEMs scheme. The two main issues are:

1. There are thousands of fan models, each one with a distinct efficiency performance level. These are not tested by the manufacturer but are estimated by propriety software that has been shown to provide accurate results. This industry structure means that a registration process, even on a family basis, is simply unworkable. For MEPs to proceed there would need to be an alternative approach that did not require registration by model number. This solution is a slippery slope, however, as it would require an approach similar to that used in the European Union as described above and would be significantly less robust than that used to cover other product categories.
2. Many fans are used within air conditioning and refrigeration equipment that is already covered by MEPs. These manufacturers, naturally, do not want the administrative and cost burden of registering a component of their equipment. Further, the scenario where a component failed a MEPs check-test but the equipment met its requirement would be difficult to resolve. The air conditioning company would accurately claim it had met its overall obligation. However, excluding fans included as components within air conditioning would create an uneven playing field in the market and would be significantly disruptive to fan manufacturers. It is unclear whether one could, or should, design a policy approach that only covers part of the market.

AREMA currently does not have a solution to these issues. The issues are profound, and perhaps are replicated in other industry sectors. AREMA proposes that fans be used as a case study to explore the benefits and limits of GEMs as a means of ensuring energy efficient products are placed within the Australian market.