

UPDATE: Proposed changes to air conditioner regulations

This paper provides an update to stakeholders following feedback on the supplementary consultation paper released in November 2016. It includes:

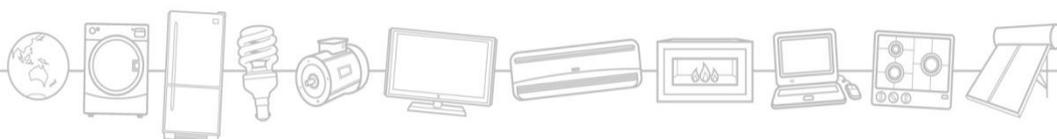
- the policy proposals for the Decision Regulation Impact Statement
- the proposed approach to implementing the new regulations
- details about testing requirements (including H2 testing)
- the approach to developing operating hours for commercial buildings
- the final design for the Zoned Energy Rating Label.

1. Decision Regulation Impact Statement

E3 is considering how it will proceed with the chiller proposals following feedback on the consultation regulation impact statement (RIS) and supplementary paper. For the chiller proposals, there are still several major issues to resolve and insufficient time to finalise them in order to include detailed proposals in a Decision RIS for consideration by the COAG Energy Council at its meeting in July. For this reason, E3 is proceeding with a Decision RIS for just air conditioners and will be developing revised proposals on chillers later in 2017.

The proposed options for air conditioners are unchanged following feedback on the supplementary consultation paper released in November 2016. The table below shows the policy proposals that will be included in the Decision RIS. The recommended option will be determined by the cost benefit estimates, which are yet to be finalised, but, based on the Consultation RIS modelling, Option C is likely to be the recommended option.

Policy Proposal	Option A	Option B	Option C
1. Energy efficiency information: Adopt the Seasonal Energy Efficiency Ratio (SEER) standard (AS/NZS 3823.4) for rating air conditioner energy efficiency. Remove the Energy Rating Label and replace it with the Zoned Energy Rating Label.	X	X	X
2. Portable air conditioners: for double duct portable air conditioners, reduce the Minimum Energy Performance Standard (MEPS) and apply the Zoned Energy Rating Label. For single duct portable air conditioners, apply the Zoned Energy Rating Label (tested to AS/NZS 3823.1.5).	X	X	X
3. Commercial/industrial air conditioners: include MEPS for air conditioners >65 kW capacity under the energy efficiency regulations (currently specified in Australia under the National Construction Code (NCC)).	X	X	X
4. Technical fixes: Resolve minor technical issues with air conditioner regulations.	X	X	X
5. Align Australia/New Zealand MEPS: Increase New Zealand's residential cooling MEPS to Australia's levels.	X	X	X
6. MEPS for single duct portable air conditioners: Apply MEPS to single duct portable air conditioners.		X	X
7. MEPS for commercial/industrial air conditioners: Increase MEPS levels for air conditioners >65 kW capacity.			X



2. Implementation of new regulations

The general approach described below is proposed as policy in both Australia and New Zealand. However, the specific details regarding dates for implementation and transitional arrangements apply to Australia only at this stage, though some differences for New Zealand have been noted. Implementation in New Zealand is subject to an additional step of Cabinet approval. EECA will keep New Zealand stakeholders informed of progress through this process.

The new MEPS and labelling requirements (previously incorporated in AS/NZS 3823.2) will be directly referenced in the new regulations. Industry will be invited to comment on at least one draft of the GEMS Determination, before it is finalised.

E3 will recommend the new requirements for most air conditioners start on 1 April 2019 for new products that need to be registered or re-registered. Transitional arrangements will apply to products that are already registered. The exceptions to the 1 April 2019 start date are double duct portable air conditioners (estimated start date of 1 October 2017) and air conditioners greater than 65kW capacity (1 October 2020).

- Previously unregistered products imported into or manufactured in Australia from the relevant start date will be required to comply with the new requirements.
 - The main 1 April 2019 start date will provide suppliers with a minimum 18 month lead time to undertake the additional testing and prepare the Zoned Energy Rating Label.
 - This timing is based on a COAG Energy Council decision in mid-2017 with a revised Greenhouse and Energy Minimum Standards (GEMS) Determination approved in the second half of 2017.
- Transitional arrangements will apply to products that are registered prior to the start date.
 - Suppliers will also be able to voluntarily register products to the new regulations, prior to the mandatory start date.
 - Not requiring all products to be registered to the new requirements from the start date recognises industry requests for a sufficient lead time to conform to the new requirements.
 - This approach is intended to allow the benefits of the new regulations to begin as soon as is practical, while minimising disruption and costs to industry.
- Suppliers will be required to provide a test report (including locking instructions, where applicable) with products registered to the new requirements, to improve the integrity of the regulations.
- As with the existing regulations, test labs do not need to be Australian, nor do they need to be National Association of Testing Authorities Australia (NATA) accredited.

The exceptions to the proposed 1 April 2019 start date are:

- a start date of 1 October 2020 for the proposals covering air conditioners greater than 65kW
 - this recognises the increase in MEPS will require the re-design of some products
- a start date the day after a revised GEMS Determination is signed, for the proposal to lower the MEPS for double duct portable air conditioners. For example, if the new regulations are signed on 30 September 2017, the lowered MEPS will apply from 1 October 2017. For administrative reasons the estimated 1 October 2017 date will not apply in New Zealand – the regulations for double duct portables will be changed at the same time as other products.
 - E3 is proposing to reduce the MEPS for double duct portables as soon as is practical in Australia, because the absence of these products from the market is an unintended

consequence of the regulations and should be rectified as soon as possible (EER/COPs of 2.50 to 2.99 for these products will result in half a star on the existing label).

Registration and fees

In Australia, suppliers will be able to vary existing registrations that go beyond 1 April 2019 to include new mandatory information, such as an updated test report, with additional test points for the Zoned Label or SEER rating. Suppliers varying an existing registration will pay a fee of \$250¹ that reflects the administrative cost to the GEMS Regulator of processing the information.

- A reduced registration fee leading up to the start date was considered, but this approach will not cover the administrative costs of processing a registration application.
- The SEER test standard AS/NZS 3823.4:2014 contains several mandatory and voluntary test points (the number of tests depends on the product type).
- Registrations can be varied with optional test data at any stage for a fee of \$250.
- Note that, if the registration is varied, all products covered by the registration will be required to comply with the new GEMS Determination, which includes display of the Zoned Label for units already available in shops.

Transition arrangements

Products newly in scope

Products newly in scope of the GEMS Act and New Zealand regulations (i.e. single duct portables and air conditioners >65kW) that have been manufactured in or imported into Australia/New Zealand prior to the relevant start date and are unable to meet the new requirements (i.e. fail to meet the new MEPS) will be grandfathered. These products may be offered for sale until sold out. Products able to comply with the new requirements (i.e. can meet the new MEPS) must be registered, before they can be offered for sale. The Zoned Label will not be required for single duct products manufactured in or imported into Australia prior to 1 April 2019.

Products currently in scope

In Australia, the MEPS level requirements for products within the scope of the GEMS Determination have not changed, so these products cannot be grandfathered (i.e. offered for sale indefinitely until sold out). However, transitional arrangements will allow existing products to continue to be sold for the remainder of their registration period (e.g. a product registered on 1 July 2015 could continue to be sold until 30 June 2020). This will include continued use of the Energy Rating Label for labelled products. Following expiry, registration to the new Determination will be required.

In New Zealand, any product that meets the current requirements that are manufactured in New Zealand or imported before the law change may continue to be sold until stock runs out. This will include continued use of the Energy Rating Label for labelled products. Any products that are manufactured in New Zealand or imported after the law change must meet the new requirements and use the new labels.

¹ Note the fees charged under the GEMS Act in Australia are under review. These fees do not apply to registrations with the New Zealand regulator.

Transition to the Zoned Label

Under the GEMS Act, E3 can provide a transition period for the new requirements.

- E3 proposes to allow products to continue to use the previous Energy Rating Label for the remainder of their five year registration in Australia. This includes the ability to manufacture and import into Australia for the full five year registration period.
 - Use of transitional arrangements will minimise the cost to suppliers and retailers.
 - This approach recognises the difficulty for suppliers in re-labelling products that have moved through the supply chain and are being sold through retail stores and other channels.
 - This approach will also reduce the burden on the E3 registration team, by not requiring every available product to be re-registered by the start date.
- While there is some risk of consumer confusion, due to the previous label and Zoned Label being displayed at the same time, it is not expected to be prolonged, because many suppliers have indicated they would like to move to the Zoned Label as soon as they can.
 - Training and education material will be made available to retailers and consumers to help explain the Zoned Label changes and reduce any confusion.
 - The Energy Rating website will provide a calculator to estimate the conversion of a star rating on the previous label to the Zoned Label.
 - This conversion can only apply to the cooling cycle of a product. The estimates will use the already registered T1 cooling performance and cooling inoperative power consumption figure (P_{noc}) and apply the default values for a fixed speed product (as per Table 1 of AS/NZS 3823.4.1) to yield the Total Cooling Seasonal Performance Factor (TCSPF) and its corresponding star rating.
- Suppliers will be able to voluntarily apply the Zoned Label the day after the Determination is signed (e.g. 1 October 2017), prior to the mandatory 1 April 2019 start date for new registrations or re-registrations.
 - If the Zoned Label is applied, the existing Energy Rating Label will not be required.

3. Simplified testing requirements

H2 testing

E3 acknowledges feedback that H2 testing (i.e. testing performance at an outdoor temperature of 2° C) is difficult. In an effort to manage the time and cost of this crucial test, without unreasonably compromising its accuracy, the following two H2 testing options will also be permitted for any size, configuration or electrical phased product:

- the air enthalpy method as outlined in AS/NZS 3823 parts 1.1, 1.2 and 1.4.
- a shortened calorimeter test (three complete defrost cycles).

Use of default SEER values

The supplementary consultation paper outlined options for using default SEER values and this has been extended as a result of feedback.

- Fixed speed products will have the option of using the default values for the 29 °C SEER test point of AS/NZS 3823.4.1.
 - These defaults are based on the 35 °C capacity multiplied by 1.077 and the 35 °C power input multiplied by 0.914.

- Variable speed products will also have the option of registering for a cooling SEER as a fixed speed product, using the default values for the 29 °C SEER test point.
 - Variable speed products <30 kW will also have the option of being treated as a fixed speed for the heating cycle, performing the H2 test at 2 °C using the same locking instructions as the H1 test at 7 °C.

This approach means that any cooling only product will continue to be able to be registered using just the T1 35 °C test. A reverse cycle product <30 kW will be able to be registered using the current T1 and H1 results and a new physical test for H2. The SEER results obtained by undertaking the minimum amount of testing will understate the performance of these products, so it is likely to be in a supplier's interest to test their products more thoroughly.

Certifying and simulating performance for products >30 kW

The supplementary consultation paper outlined options for certifying the performance of products >30 kW. These included the use of AHRI and Eurovent certification and the use of overseas test standards. E3 will accept EN 14511 and AHRI Standard 340/360 (for the cooling cycle) for products greater than 30 kW, along with any regional adoptions of the ISO test standards ISO 5151:2010 (non-ducted), ISO 13253:2011 (ducted) and ISO 15042:2011 (multi-split). Declarations of inoperative power consumption and true power factor will also be required. All registered performance must be based on Australia and New Zealand's electrical supply voltage and frequency of 230 V single phase or 400 V three phase at 50 Hz, and the T1/H1 rating conditions. The supplementary consultation paper also outlined a framework for the use of simulation software. The Decision RIS will recommend the use of these options.

Removing the maximum cooling test requirement

Feedback on the supplementary consultation paper agreed the maximum cooling test for labelled products was no longer justified or necessary. The Decision RIS will recommend its removal.

4. Operating hours for commercial buildings

Following the recommendation to rate products >30 kW with a cooling SEER, feedback agreed the creation of commercial use temperature bins will be required. These bins will be developed through the Standards Australia/New Zealand committee and published on the Energy Rating website by the middle of 2017. The agreed bins will be published in the regulations and the standard can be amended in the future.

Different bins will mean products >30 kW will not be directly comparable to products <30 kW by SEER ratings or the Zoned Label. To minimise confusion, products greater than >30kW will be prohibited from physical labelling. SEER ratings based on the commercial operating schedule will be available on the registration database and comparisons using either the commercial or domestic temperature bins will be possible for all products, through the online calculator tool.

5. Zoned Energy Rating Label

Following the publication of the Consultation RIS and the supplementary consultation paper in 2016, the department commissioned more research on some elements of the Zoned Label. The report from this round of testing is available on the [Energy Rating](#) website.

The research (a mix of quantitative and qualitative) focused on particular elements of the label identified from previous testing. These included the 7 °C and 2 °C heating capacities, as well as the noise declaration symbol. Final revisions were made to the label based on the results of this testing. The final version of the label is shown below. Please note there will be minor differences between product types, particularly in the noise declaration symbol. Ducted products will be required to display only outdoor noise and portable products will only be required to display indoor noise.

The E3 registration system will automatically generate a downloadable and printable file of the Zoned Energy Rating Label applicable to each registration. All relevant data inputs will be pre-filled based on the approved registration data, meaning applicants will not have to develop their own labels.

