

Addendum 1

MEPS For Air Conditioners: 2011

July 2011

Introduction

This is an addendum to the *decision Regulatory Impact Statement (RIS)- Minimum Energy Performance Standards for Air Conditioners: 2011*, and must be read in conjunction with that document that was published in December 2010.

This Addendum updates the *decision* RIS for Air Conditioner MEPS scheduled for October 2011 that was issued by the Equipment Energy Efficiency Committee under the auspices of the Ministerial Council on Energy in December 2010. This Addendum now forms part of the published document.

In setting the context for this addendum it must be acknowledged that some members of the air conditioning industry expressed concern regarding both the process leading up to - and the contents of the decision *Regulatory Impact Statement - Minimum Energy Performance Standards for Air Conditioners: 2011* published in December 2010. It is in this context that additional consultation has been undertaken with industry and regulators and this addendum to the RIS takes account of the concerns raised and includes changes to the recommendations as a consequence.

Background

Following publication of the *Decision Regulatory Impact Statement* in December 2010, a number of air conditioner manufacturing companies led by the Air Conditioning and Refrigeration Equipment Manufacturers' Association (AREMA) made representation to Department of Climate Change and Energy Efficiency officials and the Minister of the Department of Resources Energy and Tourism in February 2011. During these representations industry sought changes in procedures used for development and publication of future MEPS, and relaxations to the December 2010 MCE decision. The relaxations industry sought were in three key areas:

1. Deferral of the October 2011 MEPS level requirement of 3.1 Annual Energy Efficiency Ratio (AEER) for some categories of ducted air conditioners
2. Deferral of the application of MEPS to multi-split systems until a year after publication of an international or an Australian/New Zealand test standard (whichever is first), and
3. Allowance of the continuation of simulation for products <30kW where small numbers of units are sold per year.

Following the initial representations made by industry, it was agreed that procedures for future MEPS could be improved through more effective consultation with industry. Measures are currently in place to address this request. A dialogue also commenced in regard to the three key areas outlined above. This dialogue included the supply of further written submissions, face to meetings and a formal workshop that was held in Sydney on 1 April 2011. Industry, state regulators, and members of the Energy Efficiency Working Group (E2WG) under the Ministerial Council on Energy have been engaged. This dialogue resulted in a negotiated outcome that meets the needs of the

industry, state regulators and energy efficiency policy makers.

Addendum Scope

This addendum is in 2 parts. Part 1 provides amendments to be read in place of the following sections of the published RIS that have been side-barred:

- a. **Executive Summary and Introduction** (to incorporate references to the addendum)
- b. **Section 7.1 Evaluation of MEPS Options** (to include both the initially proposed option and the finally negotiated option)
- c. **Section 7.2 Conclusion** (to include a revised paragraph on the summary of recommendations that incorporates the negotiated option); and
- d. **Section 8 Implementation and Review** (to include a revised paragraph on the proposed regulatory date).

Part 2 provides the justification for the amendments made. It specifically addresses the key issues raised by the air conditioning industry in relation to the air conditioner MEPS set out in the December 2010 Decision RIS. These issues are the request to:

1. to defer the October 2011 MEPS level requirement of 3.1 Annual Energy Efficiency Ratio (AEER) for some categories of ducted air conditioners.
2. to defer the application of MEPS to multi-split systems until a year after publication of an international or an Australian/New Zealand test standard (whichever is the earlier); and
3. to allow the continuation of simulation for products <30kW where small numbers of unit are sold per year.

Apart from side-bars referring readers to this addendum, all other aspects of the December 2010 Decision RIS remain unaffected by this addendum.

In addressing the issues raised by the industry, this addendum:

1. Provides a brief introduction and background
2. Summarises the scope of issues raised by the industry
3. Provides a summary of additional analysis undertaken in response to issues raised by industry, and
4. Summarises the consultation process used to verify both the issues raised by various parts of the industry and the additional analysis undertaken.

PART 1

Amended Sections of the RIS

To reflect the issues raised by the industry, the additional analysis undertaken during March 2011 and the negotiated outcomes of the April 2011 forum some sections of the RIS have been amended at the request of the Office of Best Practice Regulation. Revised paragraphs have been included in the Addendum for the following sections:

- a. **Cover page** (to amend the title of RIS and publication date)
- b. **Executive Summary and Introduction** (to incorporate references to the addendum and a revised paragraph on the summary of recommendations that includes the negotiated option and proposals from industry)

- c. **Section 7.1 Evaluation of MEPS Options** (to include both the initially proposed option and the finally negotiated option)
- d. **Section 7.2 Conclusion** (to incorporate a revised paragraph on the summary of recommendations that includes the negotiated option and proposals from industry), and
- e. **Section 8 Implementation and Review** (to include a revised paragraph on the proposed regulatory date).

Cover Page

The title of the document is to read as follows:

“Decision Regulatory Impact Statement: Minimum Energy Performance Standards for Air Conditioners: 2011 and 2012.”

Executive Summary

The following words must be inserted as a new paragraph after the first paragraph of the Executive Summary on page E1:

“This document must be read in conjunction with Addendum A which was prepared to take account of new information that has become available since the publication of the Decision RIS.”

Read the following text as a replacement of the final paragraph under the ‘Conclusion’ sub-section of the Executive Summary:

- “Proposal A1 requirements be implemented by 1 October 2011, except for ducted systems in the 10-< 19kW range where a MEPS level of AEER 2.75 will be allowed until 1 April 2012.
- Multi-split air conditioners to be covered by new MEPS one year after the publication of a suitable International or Australian/New Zealand standard whichever is the earlier
- State and Territory Government regulators notify stakeholders if a delay is required for including multi-split air conditioners within the scope of these MEPS due to the publishing of the internationally accepted test methodology by Standards Australia
- Part load allowance should be retained but the introduction of a SEER MEPS metric should be researched
- Option C will be the indicative MEPS levels for 2014, but be subject to a further RIS and the investigation of a SEER metric
- Use of simulation will be permitted for products less than 30kW where less than 10 per year are sold and the company provides sales data for all models they sell in that category”.

Introduction

The following words must be inserted as the first paragraph after the section title ‘Introduction’:

“This decision RIS document has been amended to incorporate Addendum A that now forms part of this RIS and must be read in conjunction with this RIS”.

Section 7.1 Evaluation of and Conclusion

Read the following text as the final paragraphs of the sub-section Evaluation of MEPS Options:

“A further evaluation of Option A has been considered in light of the consultations documented in Part 2 of *Addendum A* taking account of availability of models. This led to the following proposals from key industry representatives led by AREMA:

- Simulation be permitted for products less than 30kW where less than 10 per year are sold and the company provides sales data for all models they sell in that category
- New MEPS for multi-splits will be implemented one year after the publication of a suitable Australian standard, and
- Allow a MEPS level of AEER 2.93 for products in the 10-<19kW range effective 1 October 2011 until October 2013. “

Section 7.2 Conclusion

Read the following text as the replacement for the final paragraph under this sub-section:

- “Proposal A1 requirements be implemented by 1 October 2011, except for ducted systems in the 10-< 19kW range where a MEPS level of AEER 2.75 will be allowed until 1 April 2012
- Multi-split air conditioners to be covered by new MEPS one year after the publication of a suitable International or Australian/New Zealand standard whichever is the earlier
- State and Territory Government regulators notify stakeholders if a delay is required for including multi-split air conditioners within the scope of these MEPS due to the publishing of the internationally accepted test methodology by Standards Australia
- Part load allowance should be retained but the introduction of a SEER MEPS metric should be researched
- Option C will be the indicative MEPS levels for 2014, but be subject to a further RIS and the investigation of a SEER metric
- Use of simulation will be permitted for products less than 30kW where less than 10 per year are sold and the company provides sales data for all models they sell in that category”.

Section 8 Implementation and Review

Discard the second paragraph under Transitional Arrangements and replace with the following text:

- “deferring the October 2011 MEPS level requirement of 3.1 Annual Energy Efficiency Ratio (AEER) for the 10-19 kilowatt (kW) ducted product range until 1 April 2012
- delaying the application of MEPS to multi-split systems until a year after publication of an international or an Australian/New Zealand test standard (whichever is the earlier); and
- allowing the continuation of simulation for products <30kW where less than 10 units are sold per year, as long as the company provides sales data for all models they sell in that category.”

PART 2

Summary of Issues Raised by the Industry

At a meeting in February 2011 representatives from the air-conditioning industry, approached DCCEE officials with a proposal to change the MEPS level and implementation dates for small ducted air conditioners in the less than 19 kW range. Industry also raised issues regarding the proposed removal of the use of software simulation to enable registrations for MEPS for air conditioners with capacities lower than 30 kW. Furthermore, industry proposed that new MEPS for multi-splits be implemented one year after the publication of a suitable Australian standard.

These issues were specifically outlined in an email to DCCEE from the AREMA Secretariat on 11 March 2011 as follows:

1. Simulation be permitted for products less than 30kW where less than 10 per year are sold and the company provides sales data for all models they sell in that category.
2. New MEPS for multisplits will be implemented one year after the publication of a suitable Australian standard, and
3. Allow a MEPS level of AEER 2.93 for product in the 10-<19 kW range effective 1 October 2011, until 1 October 2013

Further to the issues raised by industry on 11 March other representatives from the industry came forward not disagreeing with points 1 and 2 above, but raising serious concerns about the proposed two year delay outlined in point 3. These concerns were based on the fact they had made investments in air conditioner technology that would enable them to meet the proposed 3.1 AEER MEPS level in some models in the 10-<19 kW range by October 2011. However, the following excerpt from a submission supplied from one of the companies wishing to press ahead with the October 2011 implementation of the new MEPS indicates they may have had limited capacity to meet consumer demand:

"We are now in something of a quandary – do we push forward with the compressor development or do we cut our losses and stop? We would obviously prefer to continue but we need to have some sense that there will be market for the more efficient products when they are available. In our view dropping the level below 3.1 is a retrograde step but it would be helpful to have implementation pushed back to January 1, 2012."

The issues raised and information supplied by industry was considered by DCCEE, state regulators and the Energy Efficiency Working Group (E2WG) officials. Following this consideration it was agreed that points 1 and 2 as outlined in the industry request of 11 March were practical suggestions and would have no material impact on the outcomes of this initiative and should be recommended to the MCE for consideration. However, the divergent views expressed by different parts of the industry indicated point 3 was worthy of further analysis.

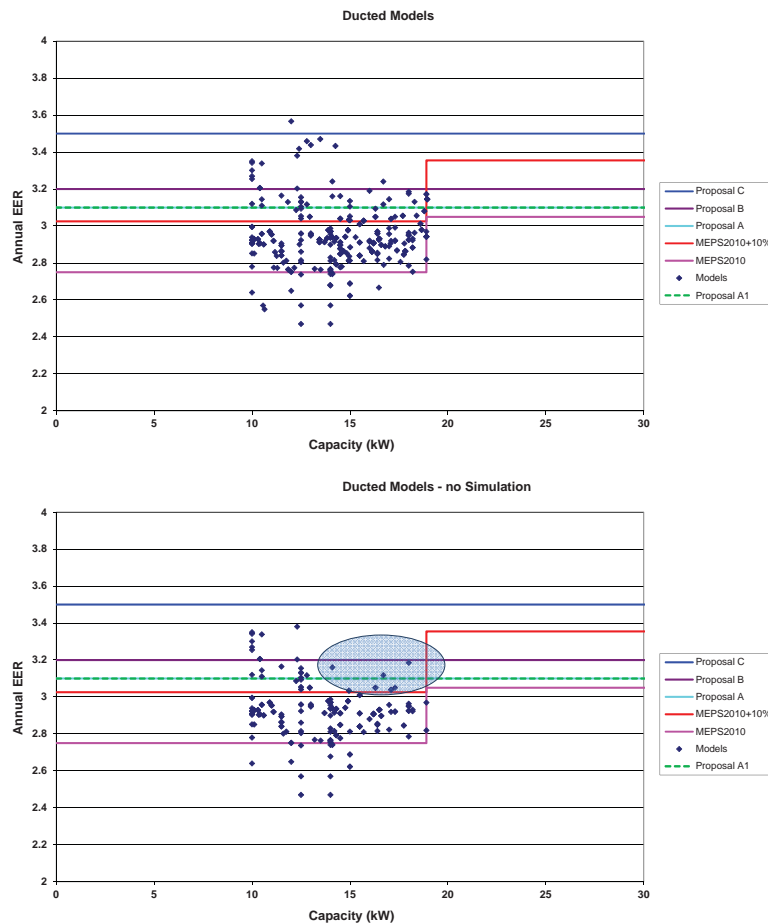
Summary of Additional Analysis

The additional analysis undertaken in March 2011 focused on the potential impacts that may arise as a consequence of the new information that was provided by industry in support of their proposal in

point 3 of their 11 March request (a lower interim MEPS level for the 10 to 19 kW ducted air conditioner category for a period of 2 or 3 years to enable the local industry to adapt to the new requirements).

The efficiency of the single split ducted units between 10 to 19 kW is shown in Figure 1, first with all registrations and then with simulations excluded and an oval showing the category between 13 and 19 kW with very few registrations.

Figure 1: Single Split Ducted 10 -19 kW – All registrations + No Simulation



The potential impact of implementation of an interim MEPS level and delay to the MEPS level of 3.1 Annual EER by 2 or 3 years was examined. The model can currently determine the impact of changes to MEPS for the category 0 to 19 kW ducted air conditioners. Hence, the impact will be less than the figures shown in this paper. Further effort and time would be required to modify the model to examine the 10 to 19 kW category of ducted air conditioners.

The following scenarios were modelled:

- A1 – MEPS 2011 implemented in October 2011, including a minimum 3.1 Annual EER for all ducted <19 kW
- A2 – all ducted <19 kW that meet 2.9 Annual EER in October 2011 with delay of 2 years for the minimum 3.1 Annual EER (Oct 2013)

- A3 – all ducted <19 kW that meet 2.93 Annual EER in October 2011 with delay of 2 years for the minimum 3.1 Annual EER (Oct 2013)
- A4 – all ducted <19 kW that meet 2.9 Annual EER in October 2011 with delay of 3 years for the minimum 3.1 Annual EER (Oct 2014)

Table 1 provides the impact of the various changes on the current MEPS proposal, A1. The impact of proposal A2 – a MEPS level of 2.9 for 2 years, effectively reduces the cumulative energy savings to 2025 by 4.5%. Proposal A3 would result in reduced energy savings over the same period of 3.7%.

Table 1: Summary Impact Data for Scenarios

Scenario	Energy Saved (cumulative to 2025)	GHG Emission Reduction (cumulative to 2025)	Total Benefit	Total Cost	Net Benefit (energy & peak demand savings)	BCR
Units	GWh	Mt CO₂-e	\$M	\$M	\$M	
Proposal A1	10,506	8.8	\$2,248	\$1,015	\$1,233	2.22
Proposal A2	10,028	8.4	\$2,131	\$992	\$1,139	2.15
<i>Difference (A1 to A2)</i>	<i>478</i>	<i>0.4</i>	<i>\$116</i>	<i>\$22</i>	<i>\$94</i>	<i>0.07</i>
Proposal A3	10,121	8.5	\$2,148	\$998	\$1,149	2.15
<i>Difference (A1 to A3)</i>	<i>385</i>	<i>0.3</i>	<i>\$100</i>	<i>\$16</i>	<i>\$84</i>	<i>0.06</i>
Proposal A4	9,722	8.1	\$2,075	\$981	\$1,094	2.11
<i>Difference (A1 to A4)</i>	<i>784</i>	<i>0.7</i>	<i>\$173</i>	<i>\$34</i>	<i>\$140</i>	<i>0.10</i>

Note: Cumulative values account for the effects on products installed up to 2025, and their associated lifetime energy savings/greenhouse gas emission reductions to 2040. Amounts calculated with a 7% discount rate.

If these changes are implemented, i.e., MEPS for ducted air conditioners of less than 19 kW is 2.9 Annual EER, the sales weighted increase in equivalent Operating EER MEPS levels from the 2010 levels is 11.6%. Proposal A1 resulted in an overall increase of 12.1% in terms of equivalent Operating EER when compared to the 2010 MEPS levels. Therefore, these changes still result in MEPS levels that meet the COAG target of a 10% increase in MEPS levels when considering the Operating EER.

Table 2 and Table 3 show the percentage of models that are non-compliant with the interim MEPS levels used for Proposal A2 and A3 (a minimum Annual EER of 2.9 and 2.93 respectively). Table 3 shows the impact of the various proposals if non-simulation registrations are considered.

Table 2: Various Proposals – Percent Non Compliant Models, All Approved Registrations

<i>Capacity</i>	<i>Non-Compliant Models</i>	<i>Compliant Models</i>	<i>Total Models</i>	<i>Percent Non-Compliant</i>
MEPS Proposal A1				
<10	101	22	123	82%
10-19	296	51	347	85%
Proposal A2 - 2.9 Annual EER				
<10	60	63	123	49%
10-19	121	226	347	35%
Proposal A3 - 2.93 Annual EER				
<10	72	51	123	59%
10-19	184	163	347	53%

Table 3: Various Proposals – Percent Non Compliant Models, non Simulation Approved Registrations

<i>Capacity</i>	<i>Non-Compliant Models</i>	<i>Compliant Models</i>	<i>Total Models</i>	<i>Percent Non-Compliant</i>
MEPS Proposal A1				
<10	82	18	100	82%
10-19	189	29*	218	87%
Proposal A2 - 2.9 Annual EER				
<10	43	57	100	43%
10-19	78	140	218	36%
Proposal A3 - 2.93 Annual EER				
<10	55	45	100	55%
10-19	126	92	218	58%

*Almost all compliant units are below 14 kW

In summary this analysis indicated that between 85% and 90% of the currently registered air conditioners in 10- <19 kW range would become non-compliant on the basis of the proposed October 2011 MEPS. With this information in mind, combined with representations from those sections of the industry that could supply compliant products, it was agreed that a formal workshop should be hosted to consult directly with a wide range of impacted stakeholders.

Summary of Consultation Process

Following the analysis undertaken in March 2011, a fully inclusive air conditioner industry forum was facilitated to allow a transparent and robust discussion of claims that were being made by industry in light of the representations that underpin the analysis, as well as the results of the analysis.

An industry forum was held on 1 April 2011 at the Stamford Hotel, Sydney Airport. DCCEE and DRET attended the meeting and invited peak industry bodies with an interest in air conditioners (AREMA, CESA, AMCA) and asked them to forward the invitation to their members. The forum was well attended. See attendees list (Attachment 1). Relevant industry participants that were impacted by the MEPS for air conditioners were present at the forum. The majority of attendees contributed to

the robust discussions concerning the proposed deferral of the commencement date of AC MEPS levels with respect to the 10-19kW ducted product range. Arguments for both deferred and on time implementation were presented during the forum and all parties were provided with ample opportunity to discuss the merits and concerns associated with issues raised.

During the meeting a consensus formed around the need to compromise between maintaining reasonable levels of consumer choice in the 10-19 kW range of air conditioners and the need to recognise the potential commercial impact on those companies that had made progress towards meeting the October 2011 implementation date.

Through negotiation it was recognised that the proposed 2-year deferral of MEPS was too long, while the on-time implementation of MEPS in October 2011 would unreasonably limit consumer choice. On this basis a compromise implementation date of April 2012 was agreed for the 10-<19 kW category of air conditioners.

At the conclusion of the meeting, there was a specific request made by DCCEE for any parties who disagreed with the negotiated compromise position to disclose their disagreement. No parties disagreed.