



Proposal Form for Standards Development Projects

Version: 2.0
Issued: March 2010

GUIDANCE

How do I use this form?

- Use the Tab key to move to the next field and Shift+Tab to go back to the previous field.
- Guidance has been provided within free text fields - delete this information before typing your input.
- Additional documents (such as Net Benefit case or details of program of work) can be attached to the completed proposal on submission.

What information do I need to provide?

Section & Title	Requirement
1. Proponent Details	All proposals need to be submitted by an individual. Provide contact details to be used in any correspondence regarding the proposal.
2. Proposal Details	Specify the title, type, relevant sector(s) and type of work being proposed. If a program of work, further information can be provided in the appendix or attachments.
3. Summary and Demonstration of Net Benefit	Outline the need for, and Net Benefit impact of, the proposed work on the Australian community.
4. Harmonisation and Alignment	List existing related documents and alignment of proposed work to these.
5. Pathways for Standards Development	State the desired development pathway and who will fund the proposed work.
6. Requests for Standards Australia resourcing	Provide justification for requesting resource support from Standards Australia for this proposed work.
7. Stakeholder Support	Provide details of relevant stakeholders across interest groups, the consultation process undertaken and whether they support the proposal.
8. Risks and Dependencies	Highlight known risks and any dependencies that may impact successful completion of the proposed project/program.
9. Additional Information	Provide any additional information which may assist in consideration of the proposal.
10. Declaration	Confirm that all information within the proposal form is true and accurate.
Appendix A: Details of projects within a proposed program of work	Where appropriate, provide details of projects in order of priority for development where multiple projects or a program of work is being proposed.

How do I submit a completed proposal?

1. Complete a pre-submission check to ensure that:
 - ✓ All sections of the form are complete.
 - ✓ The Net Benefit case is fully articulated and, where possible, quantified.
 - ✓ Full stakeholder consultation has been conducted with evidence provided.
 - ✓ The declaration is complete.
 - ✓ All supporting documentation is attached to the proposal.
2. Submit completed proposal along with all supporting documentation by email to mail@standards.org.au
3. If for any reason, you are unable to submit this form by email, please contact Standards Australia (1800 035 822).

NOTE: Standards Australia reserves the right to make public information relating to Standards development projects, including information contained within submitted proposal forms and the attached Net Benefit Case in part or in full.

PROPOSAL FORM FOR STANDARDS DEVELOPMENT PROJECTS

Proposal Reference Number	<i>Standards Australia to Complete</i>
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1. Proponent Details

<i>Your name</i>	Phil Wilkinson
<i>Position</i>	Engineering Manager and Business Development
<i>Name of employer</i>	Australian Institute of Refrigeration Airconditioning and heating (AIRAH)
<i>Name of nominating organisation</i>	Australian Institute of Refrigeration Airconditioning and heating (AIRAH)
<i>Address</i>	Level 3 / 1 Elizabeth Street
<i>Suburb</i>	Melbourne
<i>State</i>	VIC
<i>Postcode</i>	3000
<i>Phone number</i>	03 8623 3010
<i>Fax number</i>	03 9614 8949
<i>Mobile number</i>	NA
<i>Email address</i>	phil@airah.org.au
<i>Web address</i>	www.airah.org.au

2. Proposal Details

<i>Proposal title</i>	Development of new standard "Residential airconditioning systems – Minimum application requirements for energy efficiency"	
<i>Proposal summary</i>	<p>This proposal relates to the creation of an Australian Standard for the application of vapour compression airconditioning and heat pump systems for residential airconditioning.</p> <p>The purpose of the standard is to specify minimum requirements for the selection and installation of airconditioning systems for residential applications to address operating energy efficiency and includes requirements to address system design and installation quality. The purpose of these requirements is to underpin the existing work in energy rating (MEPS and Star rating programs) and in electrical demand management for residential airconditioning.</p>	
<i>Project or program</i>	Project	<i>If program, include details in Appendix A.</i>
<i>Project type</i>	New	
<i>Product type</i>	Standard	
<i>Scale of proposed work</i>	Medium	This project is considered to be medium in size as the standard will not need to develop anything new, simply list the already established optimum design criteria and good installation practices in a standard targeted at the residential airconditioning

		sector.
<i>Sector</i>	4 Building and Construction	Also electrotechnology and energy
<i>Existing Standard or other SA product</i>	NA	
<i>Application</i>	Australia Only	
<i>Performance-based or prescriptive</i>	Prescriptive	
<i>Relationship to legislation</i>	<i>Is/will this Standard be referenced in legislation?</i>	Maybe in future
	<i>If yes, is this as a primary or secondary reference?</i>	Please Select
<i>Details of legislation</i>	May be referenced in energy efficiency legislation or building regulations in the future.	

3. Summary and Demonstration of Net Benefit

All Australian Standards developed by Standards Australia must demonstrate a Net Benefit, i.e. the Standard must have an overall positive benefit to the Australian community. All proposals for new work must describe a clear need for a Standards solution and the anticipated Net Benefit in the form of a Net Benefit case. Further guidance is available within the [SA Guide to Net Benefit](#).

<i>Need for the proposed work</i>	<p>This residential design and installation standard is required to support existing energy efficiency initiatives such as Energy Star, Minimum Energy Performance Standards and demand limiting initiatives for airconditioning equipment. The equipment efficiency has been addressed now the application of this equipment must be addressed to ensure that the anticipated benefits are realised.</p> <p>Oversizing and misapplication of residential airconditioning units is a barrier to improving system operating energy efficiency and reducing residential electrical demand. Accurate sizing of the airconditioning load and correct unit selection is critical to the continued energy efficient operation of systems. Oversized units operate less efficiently than correctly sized units. Poor design and installation practices often result in poor or sub-optimal overall system efficiency, even when high efficiency A/C units rated under AS/NZS 3823 are installed.</p> <p>Both oversizing and undersizing occur regularly within the residential sector and current retail practice in this area hardly addresses accurate unit sizing at all. In addition the introduction of demand response capability for A/C units under AS4755 may have a market tendency toward uninformed consumers installing bigger units (to compensate) and exacerbating the oversizing problem.</p> <p>The lack of a residential airconditioning design and installation standard means that the entities charged with regulating/licensing the air conditioning industry find themselves entirely ill equipped to take action against even the most flagrant examples of poor design and installation. The lack of any explicit and objective standard leaves these entities with no ability to measure a given installation by any</p>
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	<p>criteria of minimum performance (and the fact that most of these organisations have negligible in-house A/C technical expertise only exacerbates the problem).</p> <p>The goal of this project is to provide a national standard dealing with the minimum mandatory requirements for energy efficient residential airconditioning.</p> <p>The objectives of the project are to;</p> <ul style="list-style-type: none"> • Set a minimum standard for airconditioning system sizing. • Set a minimum requirement for system design, control and application. • Set a minimum standard for system installation, commissioning and handover. • Reiterate national licensing and mandatory regulations for refrigerant handling. • Include recommendations for energy efficient system operation and maintenance (in an informative Appendix).
<p><i>Summary scope of proposed work</i></p>	<p><i>Scope of Standard(s)</i></p> <ul style="list-style-type: none"> • The standard would apply to residential airconditioning systems with expected cooling capacities <30kW. • A standard (manual) load estimation procedure would be described, for cooling and heating loads. • Energy efficiency, energy labelling, demand management schemes. • Include systems with both fixed and variable capacity technology. • Practical steps to reduce airconditioning loads. • System assessment, lifecycle costs. • System installation minimum (quality) requirements, including noise regulations. • Practical steps to reduce system noise. • Minimum standards for system commissioning and handover, including operating instructions. • Advice on ventilation, indoor air quality, and other associated issues. • Recommendations for energy efficient operation and maintenance practices. <p><i>Exclusions</i></p> <ul style="list-style-type: none"> • Evaporative airconditioning, solar cooling
<p><i>Alignment with national public policy</i></p>	<p>The intention of this design and installation standard is to underpin the potential benefits of the existing Energy Star, Minimum Energy Performance Standards and demand limiting initiatives for airconditioning equipment.</p> <p>This standard would align with national public policy for energy efficiency, energy conservation and greenhouse gas reduction as well as legislation on ozone depletion and refrigerant handling.</p>

	<p>COAG National Strategy on Energy Efficiency (2009)</p> <p>Carbon pollution reduction scheme and emission trading schemes</p> <p>Ozone Protection and Synthetic Greenhouse Gas Management Act and Regulations</p>
<i>Net Benefit</i>	<p>The potential impacts, costs and benefits identified for this project are as follows:</p> <ul style="list-style-type: none"> • <i>Public Health and Safety</i> Where residential airconditioning is correctly designed and applied indoor air quality and the control of mould and dust is generally improved, leading to improved public health outcomes. Correctly designed systems use less energy which create flow on public health benefits from the positive environmental impacts of reduced energy use. • <i>Social and Community Impact</i> Providing a standard that sets a minimum criteria for residential design and installation will help to protect airconditioning consumers from inappropriate or inadequate design. Increasing residential consumer information and knowledge regarding the effects that inadequate system design and installation will have on operating costs and energy efficiency should improve social and community outcomes from these systems. • <i>Environmental Impact</i> Increasing energy use and the associated greenhouse gas emissions has been identified as one of the most pressing challenges for the modern Australian (and global) society. This standard seeks to assist with efforts to reduce energy use by setting minimum criteria intended to improve overall system operating efficiency and to ensure that the potential benefits of increased equipment efficiency are realised in practice. The residential airconditioning electrical energy usage has been estimated at between 4.5 to 5 PJ , (that's 5,000,000,000,000,000 or 5 quadrillion Joules of energy) per year in Australia. All successful efforts to reduce this level of electricity usage will help to reduce power generation requirements and reduce the associated environmental impacts associated with electricity generation and distribution. The proposed standard should also reiterate the national and state regulations for refrigerant handling. Some refrigerants used in residential airconditioning systems have the potential to deplete ozone and increase greenhouse gasses if allowed to escape into the atmosphere. Eliminating refrigerant leakage has a positive environmental effect assisting with reduced ozone depletion and reduced greenhouse gases. • <i>Competition</i> The introduction of a standard for residential airconditioning should level the

playing field for system suppliers and installers increasing competition in the market and providing better outcomes for consumers.

- *Economic Impact*

Reducing the electrical demands of residential airconditioning systems has been proven, by government studies, to generate significant economic benefits.

The Australian residential air-conditioning market has a total annual turnover of approximately AUD\$3.8 Billion, and industry estimates that the number of new airconditioners purchased is in the region of 1,300,000 units per year. The proposed standard addresses the need to reduce consumer-based GHG emissions by facilitating the correct and efficient selection, design, installation and operation of airconditioning systems. This will reduce ongoing energy and operating costs to consumers and increase system life cycle times, reducing the churn and disposal costs associated with system replacement.

A recent report commissioned by Energy Networks Australia (ENA) on climate change impacts on energy network infrastructure concludes that the total cost of climate change on Australian energy networks over the next 5 years will exceed \$2.5 billion. Of this, up to 57% will relate to the cost of augmenting electricity transmission and distribution infrastructure to accommodate additional air conditioning demand. This increased load and associated peak demand issues are of major concern to the energy industry and efforts aimed at improving the energy efficiency and the correct specification and installation of residential air conditioning are considered essential.

The reduction in peak electrical demand associated with the efficient application of residential airconditioning systems has the potential to produce enormous national economic benefits in terms of reduced costs associated with energy infrastructure and energy distribution demands.

Market Failure

Australian Governments have decided that the energy efficiency of residential equipment must improve at rates well beyond what the market has delivered in the past. This has led to the mandatory energy efficiency rating for airconditioning equipment.

The benefits that are intended to be realised by the selection and installation of energy efficient airconditioners that comply with the government mandated Energy Star and MEPS programs may be undermined by poor unit application and installation practices. The market failure relates to the fact that the full benefits of the scheme may not be realised unless the market also addresses design and installation quality at least in respect of energy use outcomes.

The introduction of demand response capability for A/C units under AS4755, promoted through offered incentives by energy utilities, may be accompanied by the perverse market tendency by some to sell the customer a bigger unit to

	<p>compensate (e.g. “if the reduction at peak times is 25% then buy a ~25% bigger unit”). This tendency can be considered a market failure in terms of the aims of the demand response program.</p> <p>Retailers, particularly high street retailers, market airconditioners based largely on price. Little emphasis is placed on matching unit capabilities to the load or suitability of the unit for the intended application. This can be considered a market failure in that the market is providing energy efficient units but not ensuring that they are installed appropriately for efficient operation.</p> <p>No standard means no way minimise these tendencies or market failures.</p>
<i>Summary and conclusion</i>	<p>The introduction of a standard that addresses the quality of residential airconditioning design and installation is an essential step to fully realising the potential benefits and positive impacts of the existing schemes that address equipment efficiency and demand response capabilities. Without a standard these potential benefits may not be realised due to poor design and installation practices.</p>

Note: Where a more detailed Net Benefit case is required this may be attached separately.

4. Harmonisation and Alignment

<i>Related documentation</i>	<p>No known standards cover selection and installation of airconditioners for energy efficiency in residential applications.</p> <p>Relevant standards include AS/NZS 3823 series and AS/NZS 4755 series. also standards for ducts, pipes, plumbing, refrigeration etc.</p>
<i>Alignment and avoidance of duplication</i>	<p>The proposed standard will refer to the other standards as appropriate and there will be no duplication.</p>

5. Pathway for Standards Development

<i>Preferred development pathway</i>	Standards Australia driven*	
<i>To be funded by</i>	Standards Australia*	

**Note: The Standards Australia driven pathway is only open for those proposals seeking prioritisation by SA for project resources.*

6. Requests for Standards Australia resourcing (Leave blank if not applicable)

<i>Funding declaration</i>	Not aware of any direct or indirect funding available.
<i>Validation for SA resourcing</i>	<p>The positive impact that this standard can have on existing energy efficiency initiatives, the potential economic benefits and the clear link with established public policy in this area should all provide compelling reasons why Standards Australia should provide resources to facilitate this work.</p>

8. Risks and Dependencies

<i>Risks</i>	No risks to the development of this standard have been identified.
<i>Dependencies</i>	No fundamental assumptions or dependencies identified.
<i>Indicative timelines</i>	<i>Estimated time to complete draft for public comment</i> e.g. 12 months <i>Estimated time to publication</i> e.g. 24 months

Note: Identified risks should pertain to the proposed program/project and any threat to a successful outcome, not to the risk of the proposal not being approved. This should follow a risk assessment process that is consistent with AS/NZS ISO 31000:2009.

9. Additional Information

<i>Comments</i>	
<i>Supporting documentation</i>	Full list of responses from the AIRAH Industry Survey for this project proposal is attached.

10. Declaration

Please read and complete the declaration, then forward this proposal and your attached documents to Standards Australia at mail@standards.org.au. The named proponent is deemed to have approved the information contained within this proposal and constitutes this declaration. This is required prior to formal consideration of this proposal.

The information provided in this application is true and accurate to the best of my knowledge. I believe the proposed Standard will result in Net Benefit* to Australia.	
<i>Name of Proponent</i>	Phil Wilkinson
<i>Date</i>	

* As defined in Standard Australia's Guide to Net Benefit.

Appendix A: Details of activities within the proposed program of work

Where a program has been specified in Section 2, please provide details of projects in order of priority for development. If preferred, details can be provided in a separate file and attached to this proposal.

<i>Priority</i>	<i>Title</i>	<i>Committee</i>	<i>Pathway</i>	<i>Designation</i>	<i>Scale of project</i>	<i>Project type</i>	<i>Product type</i>	<i>Comment</i>
<i>e.g.</i>	<i>Revision of Standard for XXXXXX</i>	<i>AB-123</i>	<i>Collaborative</i>	<i>AS 1234:2009</i>	<i>Small</i>	<i>Revision</i>	<i>Standard</i>	<i>Updating 5-6 obsolete references in Standard.</i>
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