



Queensland **the Smart State**





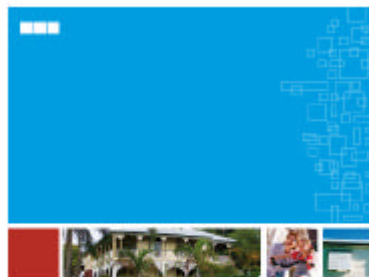
# **New requirements for energy efficient air-conditioners in Queensland**

*And other new sustainable housing measures*

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## ***Improving sustainable housing in Queensland*** **Discussion Paper**



Improving sustainable  
housing in Queensland

Discussion paper  
June 2008

A Smart State initiative





## Consultation on discussion paper

### *Wide-ranging community and industry consultation:*

- Launched by the Acting Premier the Honourable Paul Lucas MP Minister for Planning and Infrastructure on 15 June 2008.
- Three month state wide consultation process involving community forums and shopping centre displays in 12 locations.
- Nearly 300 response forms and written submissions received.
- View discussion paper at [www.dip.qld.gov.au](http://www.dip.qld.gov.au)



## What are the approved new measures?

### *Designing and building a sustainable home*

1. 5-star (out of 10) energy equivalent rated new houses from 1 March 2009
2. 5-star (out of 10) energy equivalent rated new units from 1 March 2010
3. Better recognition for outdoor-indoor areas
4. Preventing residential estate covenants restricting energy efficient design and fixtures



### *Creating an efficient home through fixtures and fittings*

6. Increased standards for water saving toilets and tap ware and energy efficient lighting in new houses and units
7. Phase-out electric hot water systems in existing homes from 1 January 2010
8. Sustainability declaration at point-of-sale for new and existing homes and units
9. Prevent the sale and installation of inefficient air-conditioners



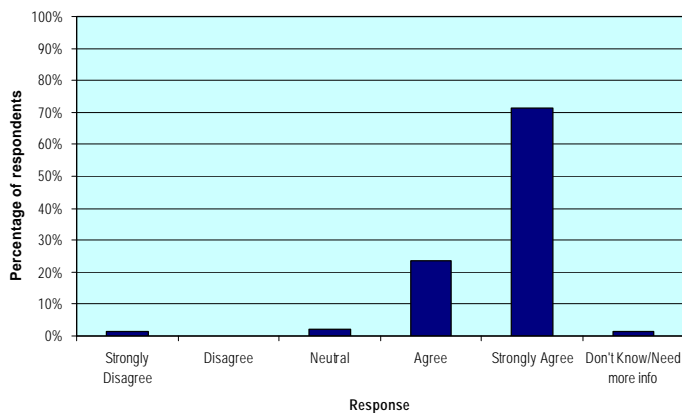
## Preventing installation or sale of inefficient air-conditioners

- Air-conditioners/space heaters use over a quarter (27%) of total household energy in a typical Qld home.
- High penetration of air-conditioners in Qld homes - number of households with air-conditioning or evaporative cooling more than doubled between 1994 and 2008 – from 32% to 67%\*.
- Elevated demands on energy infrastructure + increased greenhouse gas emissions.
- This policy does not discourage the use of air-conditioners but ensures that any sold and installed will be energy efficient.

\*Australian Bureau of Statistics

## Support for preventing installation or sale of inefficient air-conditioners

- Highest level of community support (**95%**) of any of the proposed measures.
- Key building industry groups also indicated support for this measure.



➤ 23% of respondents “agreed” and a further 72% “strongly agreed”.

➤ **Only 1% opposed the measure.**





## Implementation of the new policy - *Installation*

- Current version of Queensland Development Code (QDC) from **1 July 2009**:

<p><b>P3</b> In <i>class 1</i> and <i>class 2</i> buildings hard-wired <i>air-conditioners</i> must be energy efficient.</p>	<p><b>A3</b> In <i>class 1</i> and <i>class 2</i> buildings, hard-wired <i>air-conditioners</i> installed have an <i>EER</i> of at least 2.9.</p>
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## Definitions

- **Air-conditioner** means any single-phase or three-phase *air-conditioner* of the vapour compression type up to a cooling capacity of 65kW.
- **Energy Efficiency Ratio (EER)** means the tested average energy efficiency ratio for cooling as specified in 'AS/NZS 3823.2: 2005 Performance of electrical appliances – air-conditioners and heat pumps – energy labelling and minimum energy performance standard (MEPS) requirements'.

\*Note: The QDC will apply to air-conditioners up to 65kW. Minimum requirements for air-conditioning systems over 65kW are captured under Section J of the Building Code of Australia.



## Proposed amendments to QDC

- Latest proposed draft currently available on Dept's website (published 2 April 2009).
- Being considered end of April (for effect from **1 July 2009**).

### **P3**

In *class 1* and *class 2* buildings new and replacement *air-conditioners* must be energy efficient.

### **A3**

In *class 1* and *class 2* buildings, new and replacement *air-conditioners* have an *EER* of at least 2.9.

- Application of P3: *Installation of an air-conditioner in a class 1 or class 2 building.*



## Definitions

- ***Air-conditioner*** means any single-phase or three-phase *air-conditioner* of the vapour compression type up to a cooling capacity of 65kW\* that is required to have a tested average EER.
- ***Energy Efficiency Ratio (EER)*** means the tested average energy efficiency ratio for cooling as per 'AS/NZS 3823.2 Performance of electrical appliances – air-conditioners and heat pumps – energy labelling and minimum energy performance standard (MEPS) requirements'.
- ***Installation*** means, for an *air-conditioner*, placing in position for use in the building and includes connecting to the building's electrical wiring either directly by a permanently fixed connection or by using a plug to access a general purpose outlet.



## Why use Energy Efficiency Ratio (EER) instead of star rating?

- **AS/NZS 3823.2** - only single-phase non-ducted air-conditioners required to display an energy star label.
- Number of stars on energy label calculated using EER.
- Using EER in QDC will capture all types of residential air-conditioners that are tested in accordance with MEPS requirements under AS/NZS 3823.2.
- An EER of 2.9 is generally equivalent to 4-stars on a current energy star label.
- Star ratings due to change in near future (e.g. 2010).



## Queensland - national comparison

Type	Capacity	Current MEPS (EER)/equivalent star rating	Proposed 2010 MEPS (EER)/equivalent star rating)	Qld 1 July 2009 EER/equivalent star rating
Window/wall	< 10kW	2.75 / 3.5★	2.84 / 3.5★	2.9 / 4★
	10 – 19kW	2.75 / 3.5★	2.75 / 3.5★	
Split system	< 4kW	3.05 / 4.5★	3.33 / 5★	2.9 / 4★
	4 – 10kW	2.75 / 3.5★	2.93 / 4★	
	10 – 19kW	2.75 / 3.5★	2.75 / 3.5★	
Ducted	< 19kW (single phase only)	2.5 / 2.5★	2.75 / 3.5★	2.9 / 4★
	< 10kW (three phase only)	2.5 / 2.5★	2.75 / 3.5★	
	10 - 19kW (three phase only)	2.75 / 3.5★	2.75 / 3.5★	
All (large)	19 - 39kW	3.05 / 4.5★	3.05 / 4★	2.9 / 4★
	39 - 65kW	2.75 / 3.5★	2.75 / 3.5★	



## Current availability of compliant models

Type	Capacity	Percentage (and no.) of models that meet new Qld standard*			
		Including grandfathered models*		Excluding grandfathered models*	
Window/wall	< 10kW	20% (132)	<b>20% (137)</b>	62% (122)	<b>62% (123)</b>
	10 – 19kW	28% (5)		100% (1)	
Split system	< 4kW	45% (786)	<b>33% (1495)</b>	100% (685)	<b>74% (1320)</b>
	4 – 10kW	24% (585)		57% (545)	
	10 – 19kW	34% (124)		67% (90)	
Ducted	< 19kW (single phase only)	25% (180)	<b>32% (610)</b>	30% (165)	<b>47% (524)</b>
	< 10kW (three phase only)	33% (26)		63% (24)	
	10-19kW (three phase only)	36% (404)		64% (335)	
All (large)	19-39kW	52% (231)	<b>46% (278)</b>	98% (181)	<b>79% (221)</b>
	39-65kW	28% (47)		42% (40)	



## Compliance with new QDC

- Installation of air-conditioners is prescribed as 'self assessable' building work under Schedule 1 of the *Building Regulation 2006*:

***“installation, repair, maintenance or alteration of an air conditioner for cooling or heating a class 1 or class 2 building, other than an air conditioner that is an integral part of the building.”***

(e.g. of an air conditioner that is an integral part of a building - air conditioner that is part of the fire safety system or mechanical ventilation system for the building)

- Homeowners responsibility to ensure compliance.
- Maximum penalty – 165 penalty units (\$16,500).
- Enforced by local government.





## What about air-conditioners that have already been imported/manufactured?

- Under s30 of the *Building Act 1975*, all building work must be in accordance with the QDC – i.e. any new or replacement air-conditioner installed on or after **1 July 2009** will need to comply with new QDC requirements.
- No ‘grandfathering clause’ (as per MEPS).
- Under s37 (1) (a) of *Building Act 1975* – where the “lawful carrying out of building work” has commenced prior to an amendment, the previous code may still apply (case by case basis) – it is suggested that legal advice be obtained to determine relevance to particular situations.



### Example:

- A manufacturer has received an order in March 2009 for 30 air-conditioners for a new development. The systems are due to be supplied in August 2009 and installed in the new houses between August – September 2009. They have an EER of 2.75.
- The builder will not be able to have the air-conditioners installed as they do not have a minimum EER of 2.9 and the installation process will not have commenced prior to 1 July 2009.



## Implementation of the new policy - Sale

- Introduction of new legislation **as soon as possible** to ban sale of residential air-conditioners in Qld that do not have an EER of 2.9 or higher.
- Exemption from *Mutual Recognition Act 1992* to prevent air-conditioners that do not meet the new requirements from being imported from other States.



## Education and awareness of new standards

- Detailed technical guideline being developed to supplement the QDC
- Factsheet to be available on website – [www.dip.qld.gov.au](http://www.dip.qld.gov.au)
- Building and Plumbing Newsflashes – updates published by Building Codes Queensland regarding building and plumbing legislation (To join mailing list: [buildingcodes@dip.qld.gov.au](mailto:buildingcodes@dip.qld.gov.au))
- Marketing and media releases
- Industry newsletters, e.g. newsletter published by DEWHA
- AIRAH forums – April and June



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