

# Consultation Draft RIS: MEPS for Air Conditioners 2011

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Brisbane, Sydney, Adelaide

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# Outline of Presentation

- Background
- The Problem
- MEPS Options Considered
- Impacts
- Conclusions
- Seeking Feedback



# Background 1

- AC labelling introduced in 1987, National from 1992
- MEPS Introduced in 2001 for three-phase
- MEPS introduced in 2004 for single phase
- MEPS Increased in 2006/7
- MEPS Increased in 2010/11
  - Operational EER + COP Apr 2010
  - Annual EER and COP Apr 2011



# Background 2

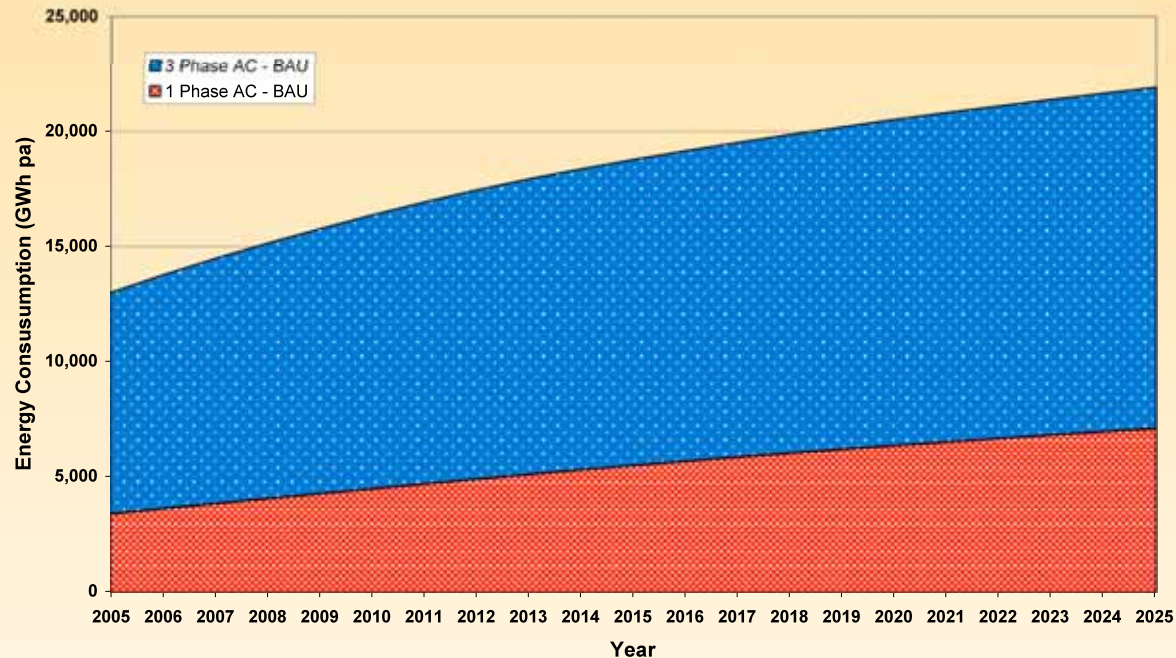
- Queensland
  - Minimum 2.9 EER from Sep 2009
- South Australia
  - State MEPS from Jan/Jul 2010
  - Range of 2.9 – 3.4 EER

# The Problem 1



- Households with refrigerative AC
  - In 1999 – 24%, In 2008 – 52%
- Energy Use increasing

AC Energy Consumption: Australia (2005 - 2025)

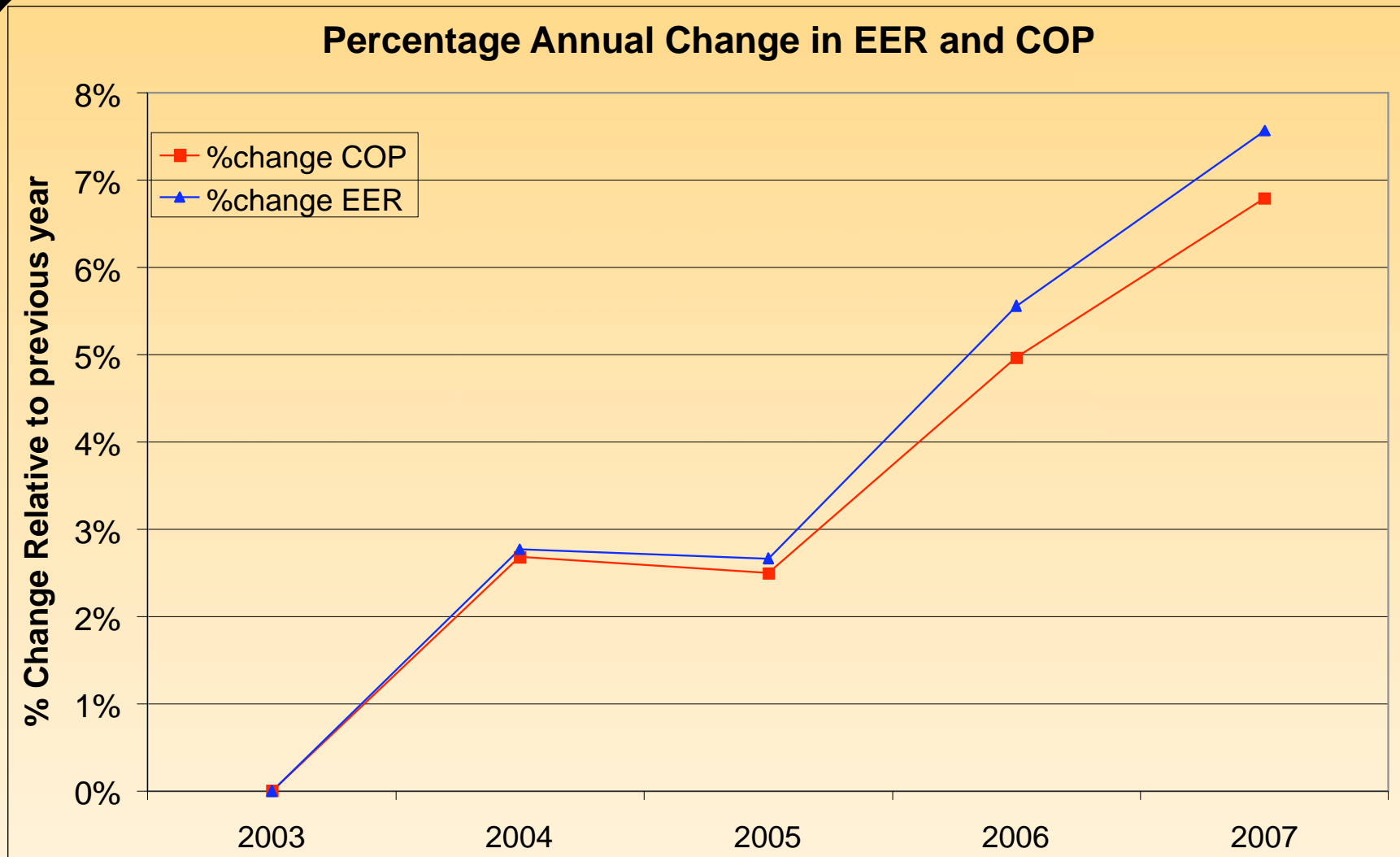


# The Problem 2



- Market Failure
  - Split incentive, where end-users are excluded from the purchase decision
  - Consumers lack information and computation skills to compare life cycle costs
  - Electricity markets failed to show cost-reflective prices (greenhouse gas emissions & peak demand impact)

# Effectiveness of MEPS



# MEPS Options - Levels

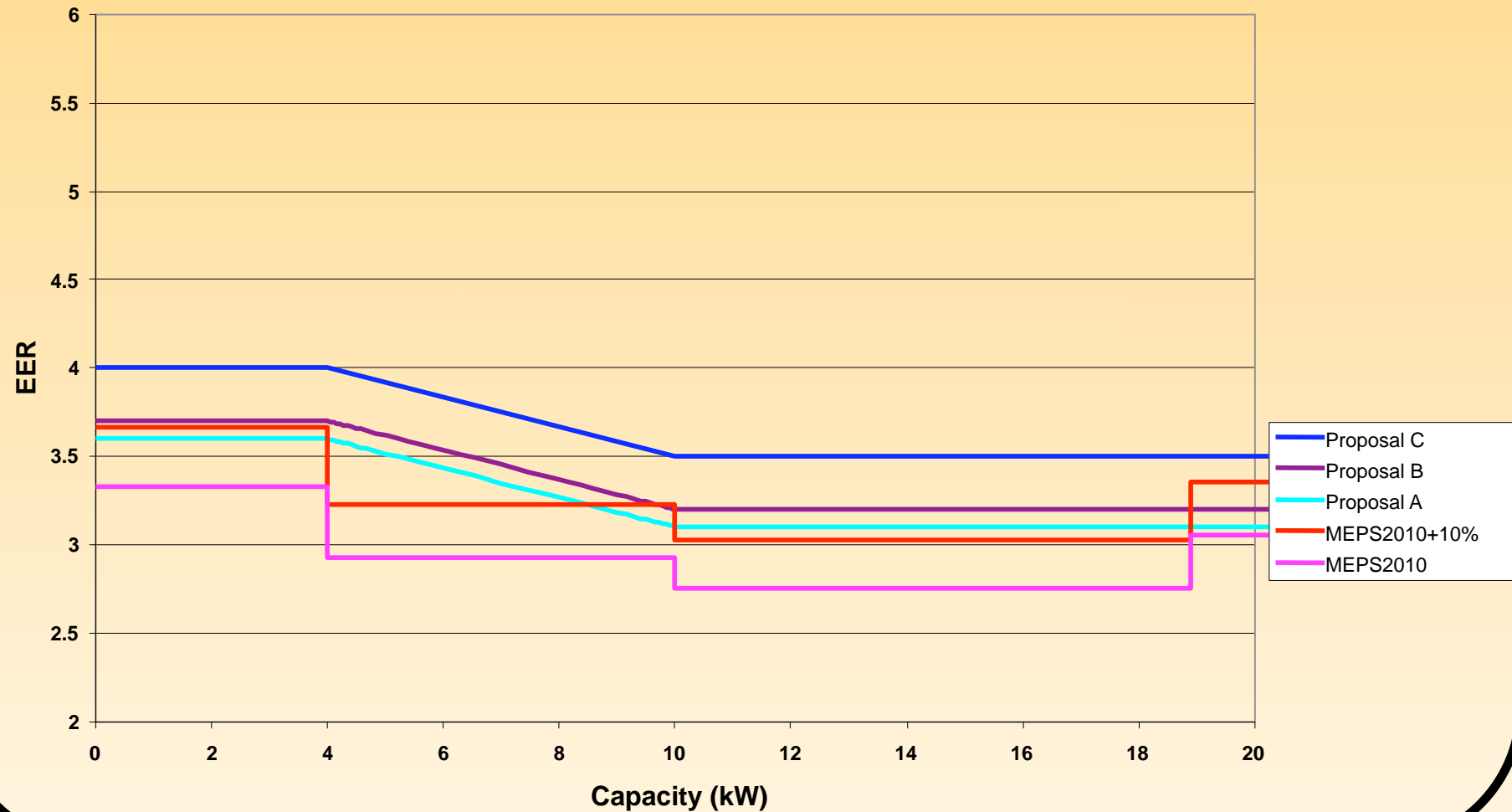


AC Category	MEPS 2010 (BAU)	QLD MEPS	SA MEPS	MEPS 2010 + 10%	Proposal A	Proposal B	Proposal C
<i>Date Implemented</i>	<i>Current (Apr 2010/ 2011)</i>	<i>Sep 2010/ Oct 2011</i>	<i>Sep2010/ Oct 2011</i>	<i>Oct 2011</i>	<i>Oct 2011</i>	<i>Oct 2012</i>	<i>Oct 2014</i>
Non-ducted Split <4kW	3.33	2.9	3.4	3.66	3.6	3.7	4.0
Non-ducted Split 4kW to <10kW	2.93	2.9	3.0	3.22	Slope	Slope	Slope
Non-ducted unitary <10kW	2.84	2.9	2.9	3.12	3.1	3.2	3.5
Ducted <10kW	2.75	2.9	2.9	3.03	3.1	3.2	3.5
Non-ducted split 10kW to 19kW	2.75	2.9	3.0	3.03	3.1	3.2	3.5
Ducted 10kW to 19kW	2.75	2.9	2.9	3.03	3.1	3.2	3.5
All 19kW to 39kW	3.05	2.9	3.1	3.35	3.1	3.2	3.5
All >39kW	2.75	2.9	2.9	3.03	3.1	3.2	3.5
Average % efficiency above MEPS2010		1.4%	3.3%	10%	11.8%	15.3%	25.2%

# Non-ducted Split MEPS Levels



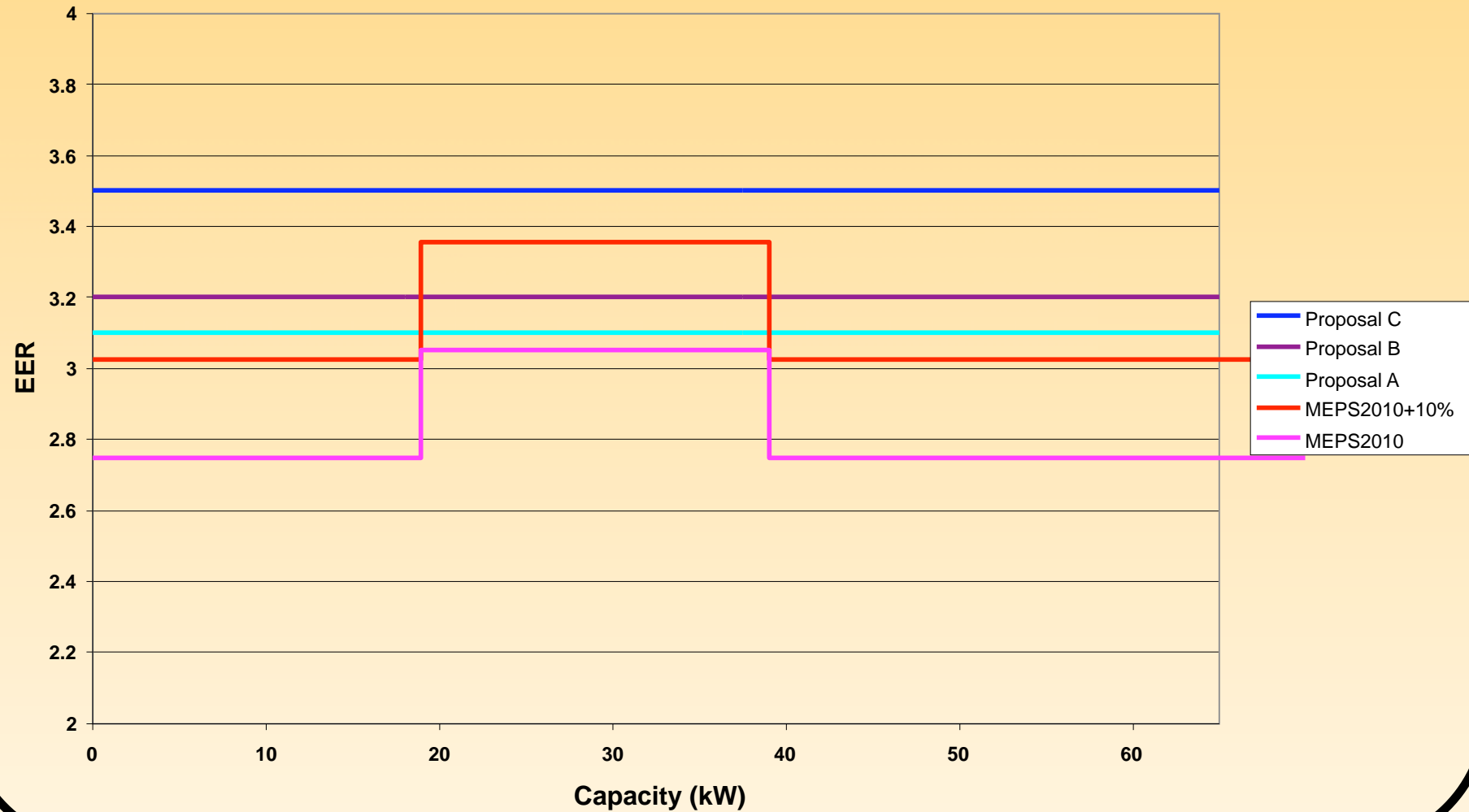
Non-ducted Split Models



# Ducted MEPS Levels



Ducted Models





# MEPS Options - Scope

- Changes to the use of Simulation for Air Conditioner Registration
  - not allowing simulation for air conditioners with a rated capacity of less than 30kW
- Removal of the Part-Load MEPS Compliance Requirement for Air Conditioners with Inverter Technologies
- New additions
  - Inclusion of Multi split air conditioners

# Impacts 1 – Summary



Scenario	Energy Saved (cumulative to 2025)	GHG Emission Reduction (cumulative to 2025)	Total Benefit	Total Cost	Net Benefit	BCR
	GWh	Mt CO <sub>2</sub> -e	\$M	\$M	\$M	
MEPS2010+10%	16,456	13.8	\$2,682	\$305	\$2,376	8.8
Proposal A	17,346	14.5	\$2,953	\$408	\$2,545	7.2
Proposal B	22,092	18.4	\$3,569	\$499	\$3,071	7.2
Proposal C	34,119	28.4	\$5,388	\$789	\$4,599	6.8
SA State MEPS (Interim 2010)	112	0.1	\$44	\$9	\$34	4.6
QLD State MEPS (Interim 2010)	38	0.0	\$10	\$2	\$8	4.9
SA State MEPS and MEPS2010+10%	16,568	13.9	\$2,725	\$315	\$2,410	8.7
QLD State MEPS and MEPS2010+10%	16,493	13.8	\$2,692	\$308	\$2,384	8.8
SA State MEPS and Proposal A	17,459	14.6	\$2,725	\$315	\$2,580	7.2
QLD State MEPS and Proposal A	17,384	14.6	\$2,963	\$410	\$2,554	7.2



# Impacts 3 – Models Compliant



<b>MEPS Option</b>	<b>Non-Compliant Models</b>	<b>Compliant Models</b>	<b>Total Models</b>	<b>Percent Non-Compliant</b>
QLD State MEPS (Interim 2010)	289	2180	2469	12%
SA State MEPS (Interim 2010)	554	1915	2469	22%
MEPS 2010+10%	1714	755	2469	69%
Proposal A	1823	646	2469	74%
Proposal B	2049	420	2469	83%
Proposal C	2345	124	2469	95%

	<b>Non-Compliant Brands</b>	<b>Compliant Brands</b>	<b>Total Brands</b>	<b>Percent Non-Compliant</b>
QLD State MEPS (Interim 2010)	6	118	124	5%
SA State MEPS (Interim 2010)	11	113	124	9%
MEPS 2010+10%	77	47	124	62%
Proposal A	79	45	124	64%
Proposal B	84	40	124	68%
Proposal C	108	16	124	87%

# Impacts 4 - Other Changes



- Simulations >30 kW only
  - RIS used March Registration data - showed “20 – 30 %” use simulation
  - In July 2010, 10 (out of 70) use simulation for registration post Apr 2010 or 14%
- Part Load Allowance removal
  - Affects about 30 Models using July 2010 registrations ~ 3.7%
  - RIS used March Registration data - showed about 10 model were affected ~ 0.5%

# Charts of MEPS vs Models

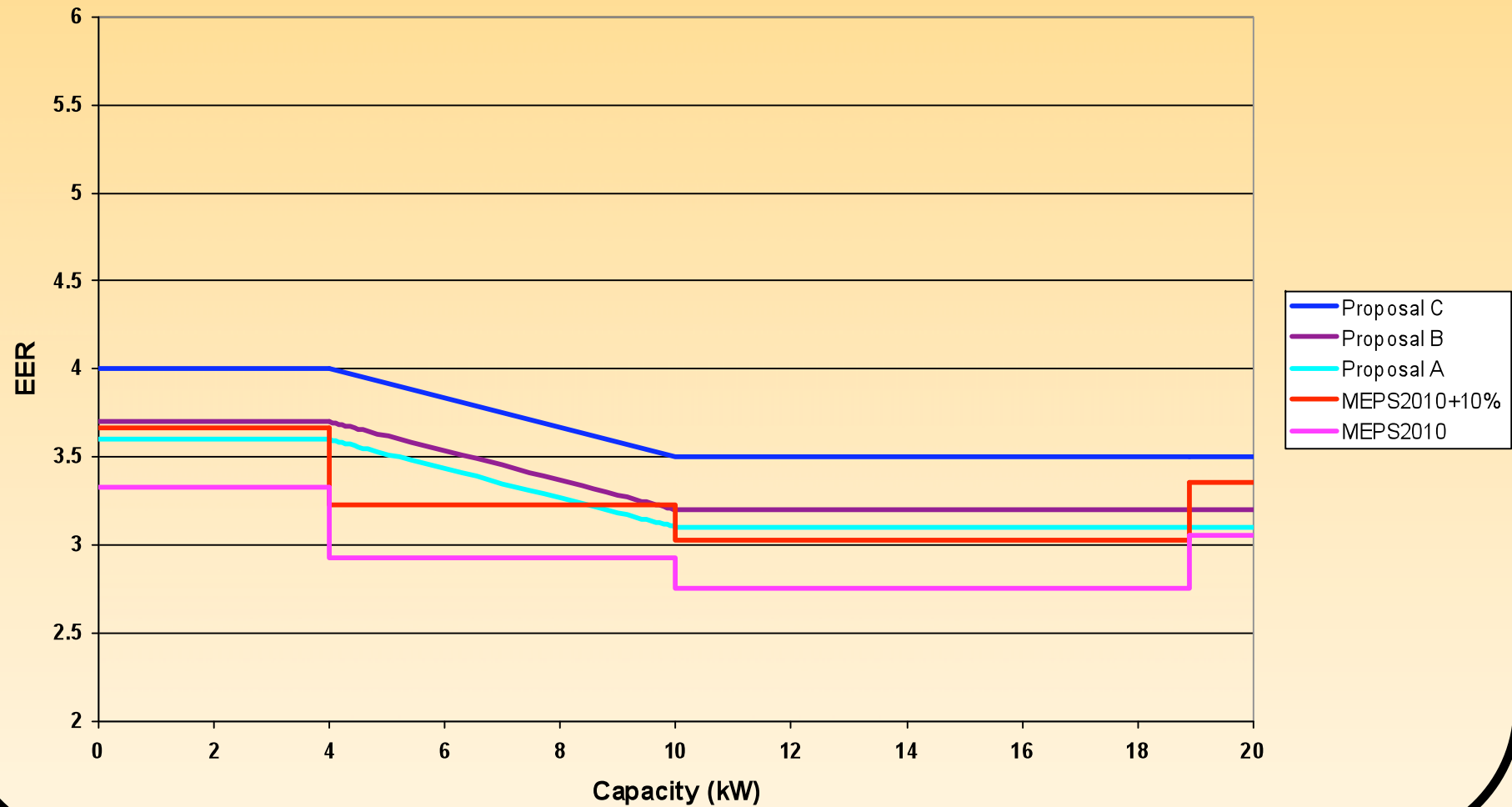


- Following charts show MEPS levels for each option and Models currently registered (~800 on 9 July 2010)
- Charts of operating EER by Capacity:
  - Non-ducted splits (single splits)
  - Non-ducted unitary (window wall)
  - Ducted (packaged units and ducted splits)
    - Operating + Annual EER

# Non-ducted Split MEPS Levels



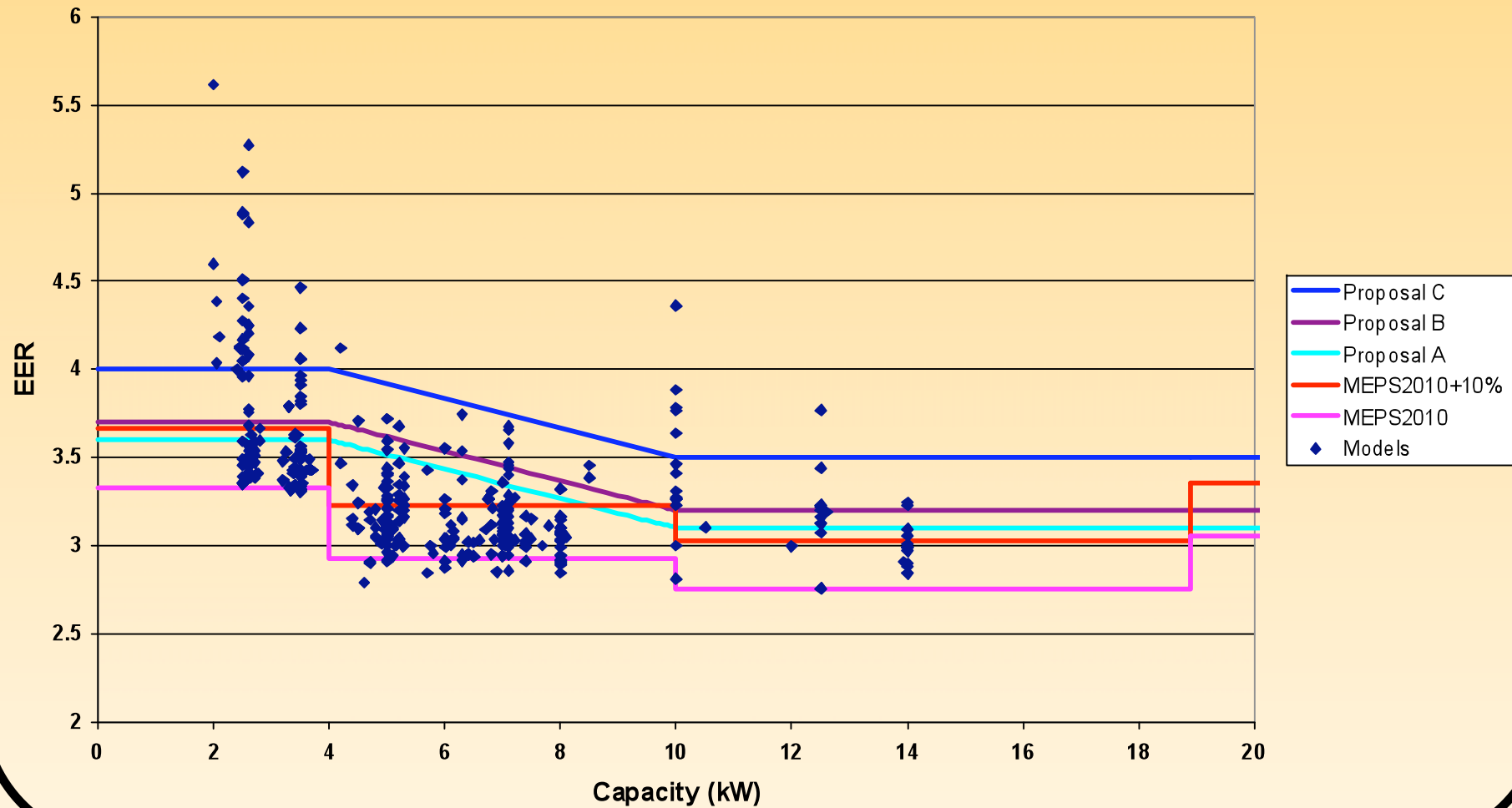
Non-ducted Split Models



# Non-ducted Split Current Models



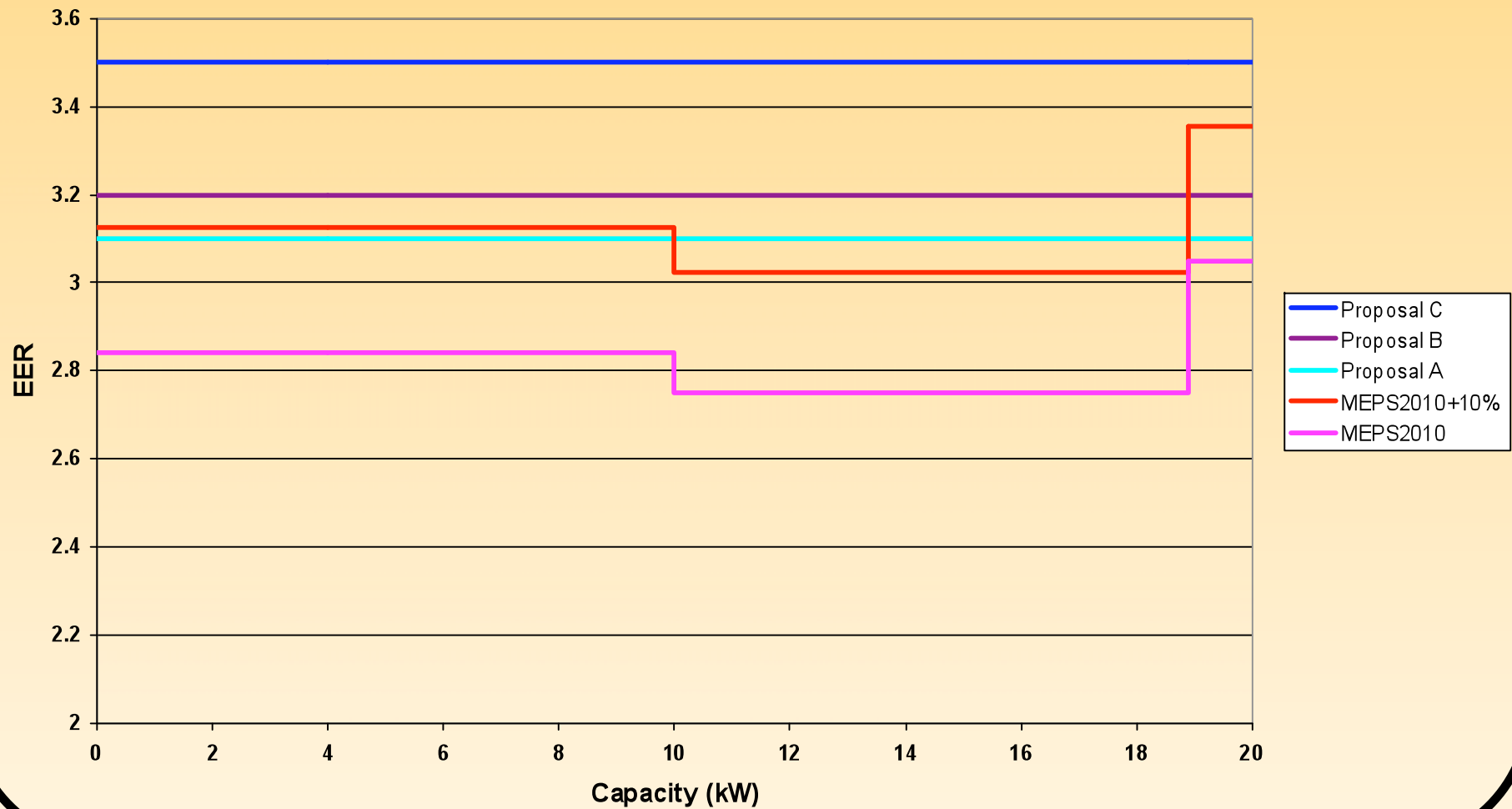
Non-ducted Split Models



# Non-ducted Unitary MEPS Levels



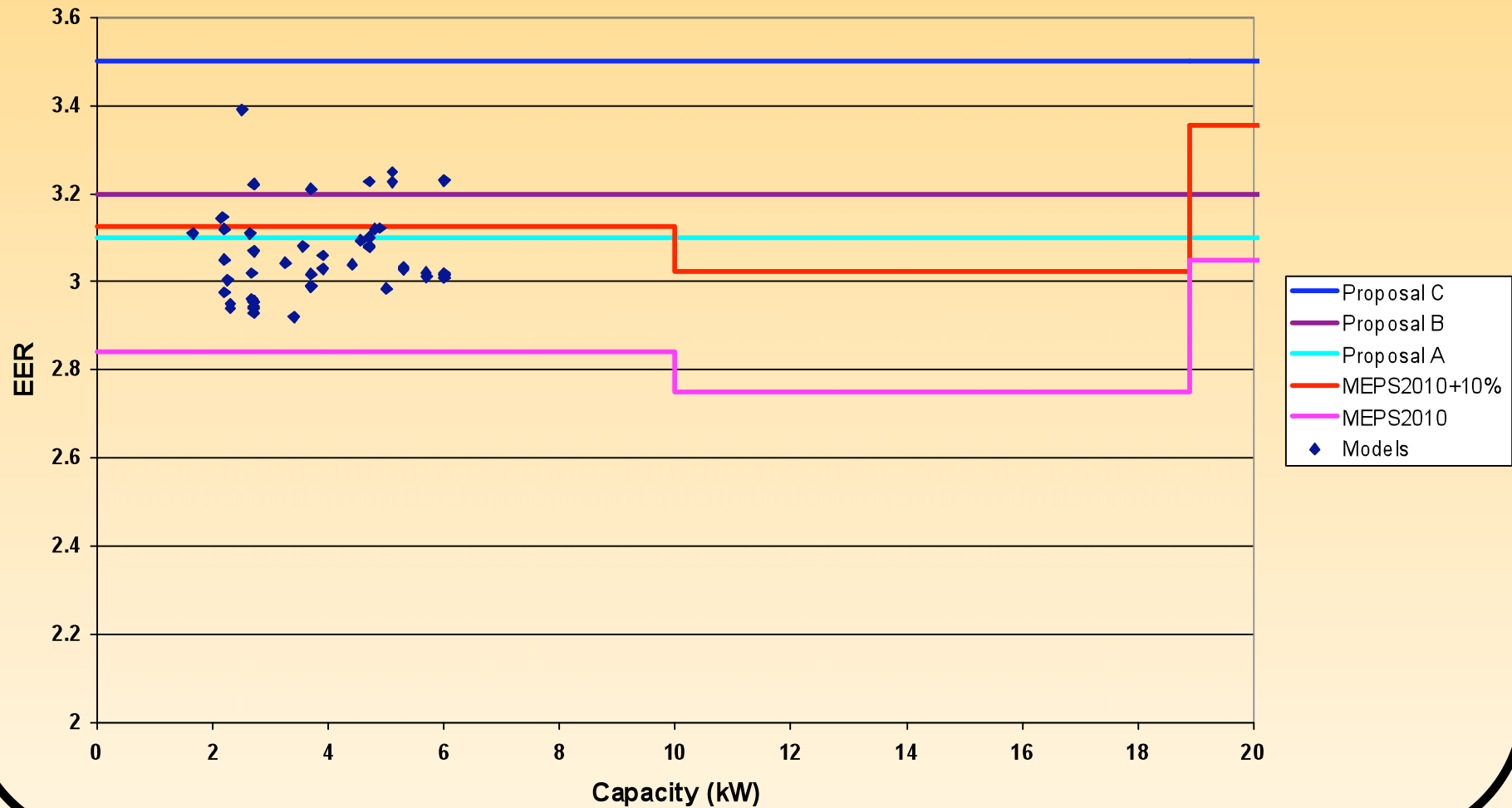
Non-ducted Unitary Models



# Non-ducted Unitary Models



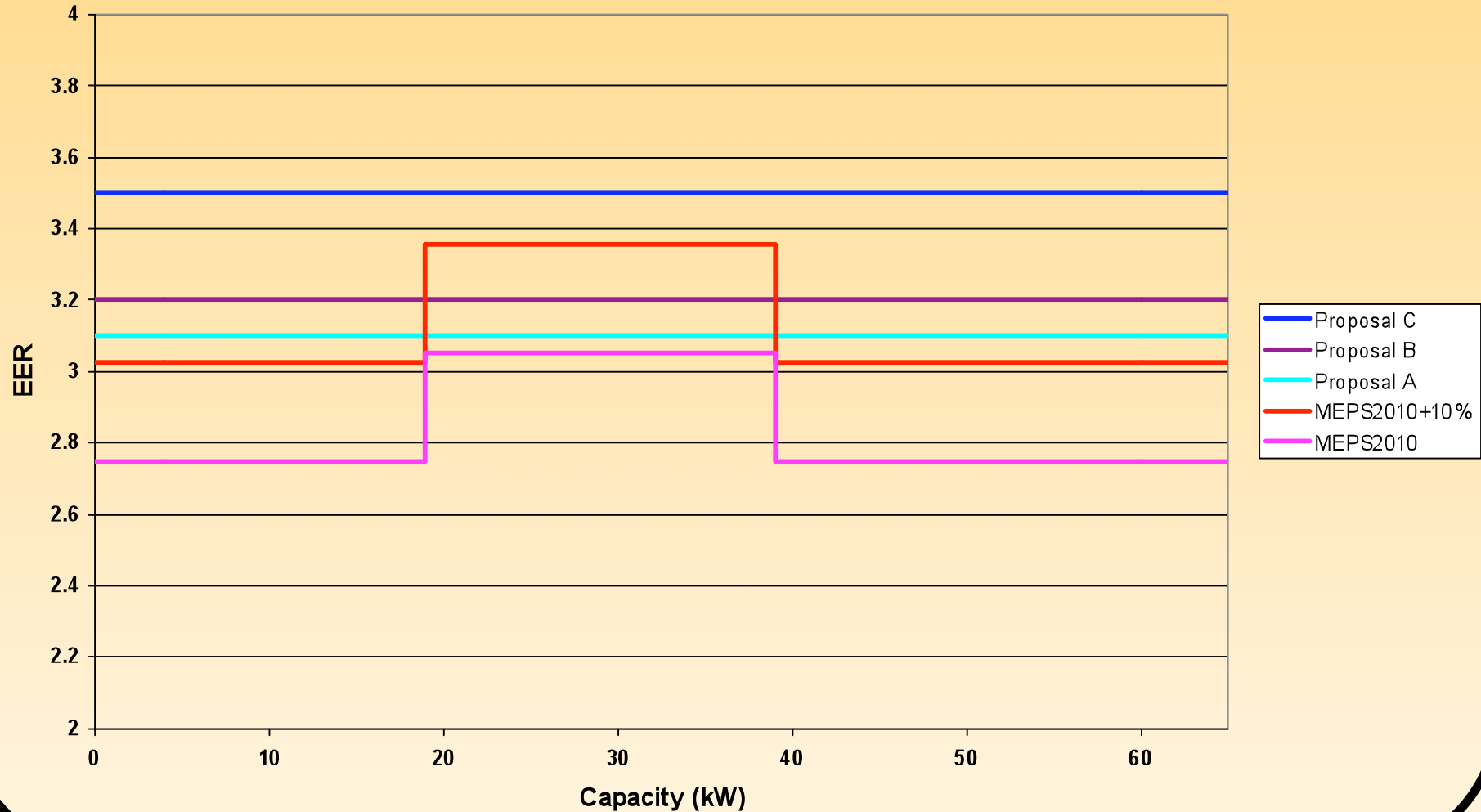
Non-ducted Unitary Models



# Ducted MEPS Levels



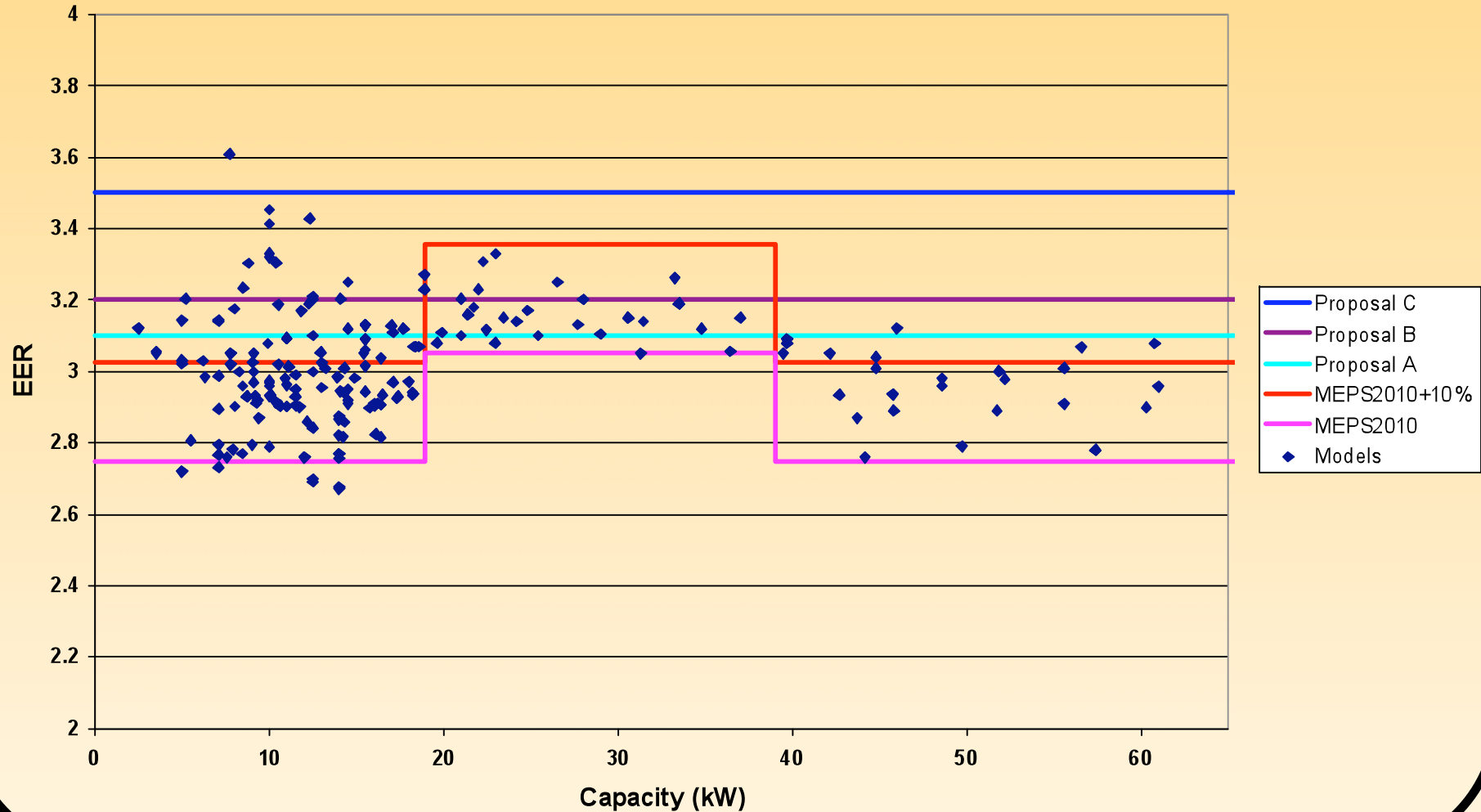
Ducted Models



# Ducted Current Models



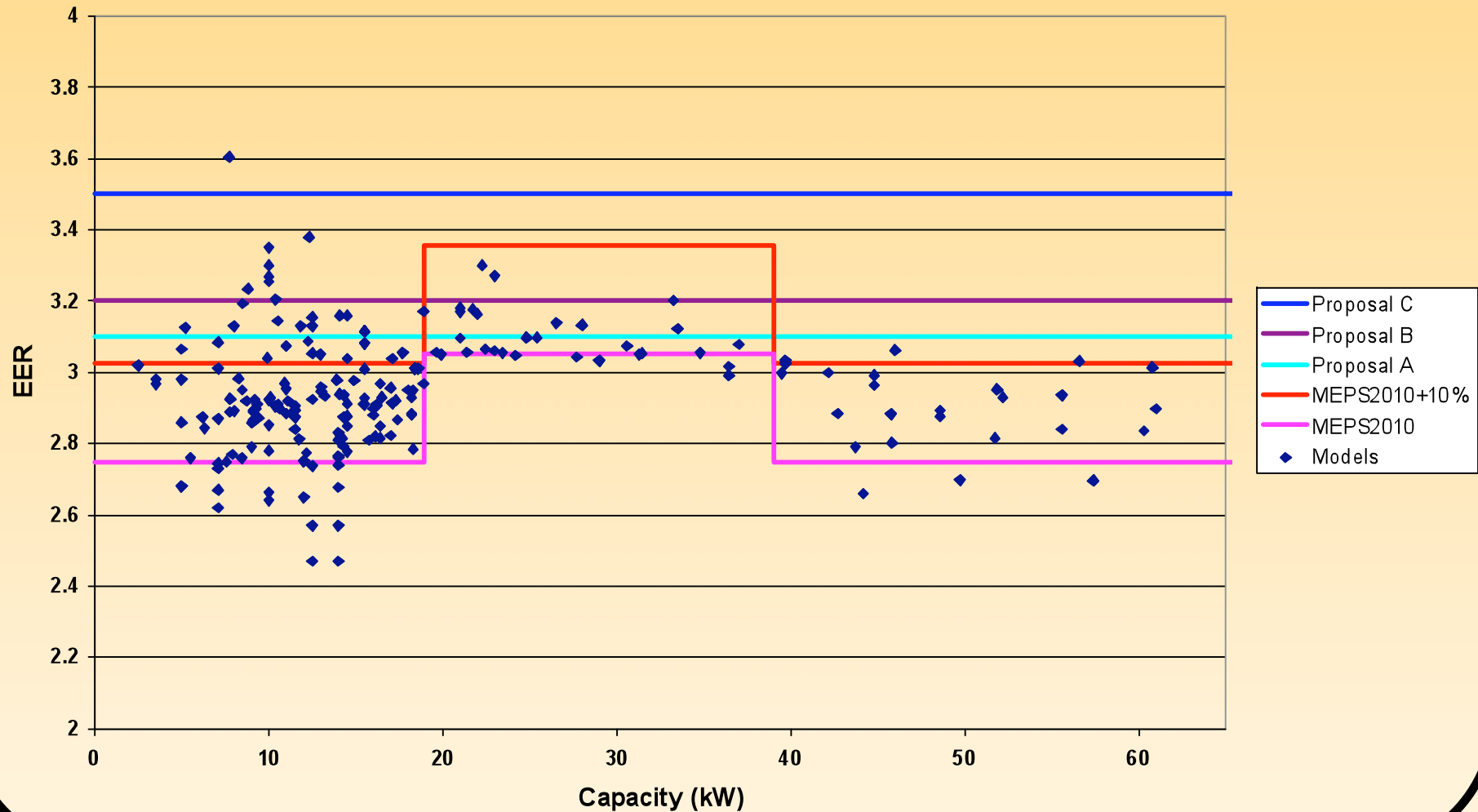
Ducted Models



# Ducted Current Models - AEER



Ducted Models





# Conclusions

- The most effective MEPS, in terms of total net benefits, is Proposal C, which introduces more stringent MEPS levels in 2014, after first implementing Proposal A MEPS in 2011.
- Also eliminates the discontinuity in the levels of the existing MEPS
- MCE proposed MEPS+10% option in 2009, This Proposal and alternatives to be put to MCE for decision.



# Seeking Feedback

- Preferred options for MEPS
- Impact of the proposed MEPS on air conditioner prices
- Impact on MEPS on products in particular product categories
- Impact of the proposed MEPS on customer choice:
  - range of products and/or
  - product features that may be affected;
- Impact of the MEPS on the industry
  - competitiveness of the industry
  - whether any industry section in particular may suffer from reduced competition.



# Seeking Feedback 2

- Other Impacts - implementation arrangements for MEPS
  - changes to use of simulations within the test method
  - removal of part load allowance
  - Inclusion of Multi-split AC
- Impacts of extending the Interim State based MEPS (SA and QLD) nationally
  - And the potential costs and benefits of these MEPS commencing Oct 2010.