



# Residential Measures for the NSW Energy Efficiency Target

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# Contents

- Low voltage halogen lighting
- “Standby killers”
- Residential audits
- Aggregate metered baseline for residential
- Residential lighting control



# Low Voltage Halogen Lighting

- DRAFT – 50% developed
- Replace 50W “dichroic” lamp
- Replace magnetic transformer
- Must be “like for like”
  - No “design” required



# Replacement Technologies

Technology	Typical Circuit Power (W)	Typical Light Output (lm)	Typical Efficacy (lm/W)
Dichroic 50W + magnetic transformer (incumbent)	62.5	650	10.4
Dichroic 50W + electronic transformer	53.8	650	12.1
Dichroic 35W + electronic transformer	37.6	TBC	TBC
GU10 CFL	11	230	20.9
LED (replacement lamp)	4	80	20
Ceramic metal halide GU10	22	1000	45



# Eligible Replacements

- 35W dichroic lamp
- Electronic transformer
- 20W ceramic metal halide



# 35W Dichroic Lamp Only

- Magnetic transformer:
  - $\Delta\text{LCP} = (50\text{W} \div 80\%) - (35\text{W} \div 80\%) = 18.75 \text{ W}$
- Electronic transformer:
  - $\Delta\text{LCP} = (50\text{W} \div 93\%) - (35\text{W} \div 93\%) = 16.13 \text{ W}$
- 50/50 penetration magnetic/electronic
- Average power saving = 17.4W



## 35W Dichroic Lamp Only (2)

Replacement Lamp Life (hours)	Lifetime Energy Saving (MWh)
2000	0.035
3000	0.052
4000	0.070
5000	0.087
10000	0.174



# 35W Lamp and Electronic Tx

Replacement Lamp Life (hours)	Savings to end of 35W lamp life (MWh)	Savings beyond end of 35W lamp life (MWh)	Total (MWh)
2000	0.050	0.070	0.120
3000	0.075	0.061	0.136
4000	0.099	0.052	0.152
5000	0.124	0.044	0.168
10000	0.249	0.000	0.249



# 20W CMH

LCP of New Unit (W)	Replacement Lamp Life (hours)				
	6000	8000	10000	12000	15000
22	0.217	0.289	0.361	0.434	0.542



# Issues to be Resolved

- 35W light output
- 35W voltage rise

# “Standby Killers”

- Scoping underway
- Switch off devices when in standby mode





# Issues

- Significant theoretical savings
- Savings not yet proven
- Impacts of 1W standby MEPS
- What are practical issues?
- Currently no specification for product performance



# Next Steps

- Complete savings calcs
- Trial of products?
- Develop specification for product performance?



# Residential Energy Audits

- Scoping underway
- Energy Audits which generate NEETs?
- Several issues:
  - Quantity & persistence of emissions reductions
  - Double counting
  - Overlap with Commonwealth green loans
  - Focus on education, not just selling products



# Aggregate Metered Baseline for Residential

- Scoping underway
- Retailers, energy co-ops aggregate customers
- Encourage savings measures
- Monitor customers' consumption
- Issues:
  - Need large sample groups
  - Statistical proof
  - Double counting
  - Seasonal variation



# Residential Lighting Control

- Scoping underway
- Motion sensors, etc.
- Small savings potential



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