

# How Australia's energy efficiency schemes have unlocked potential

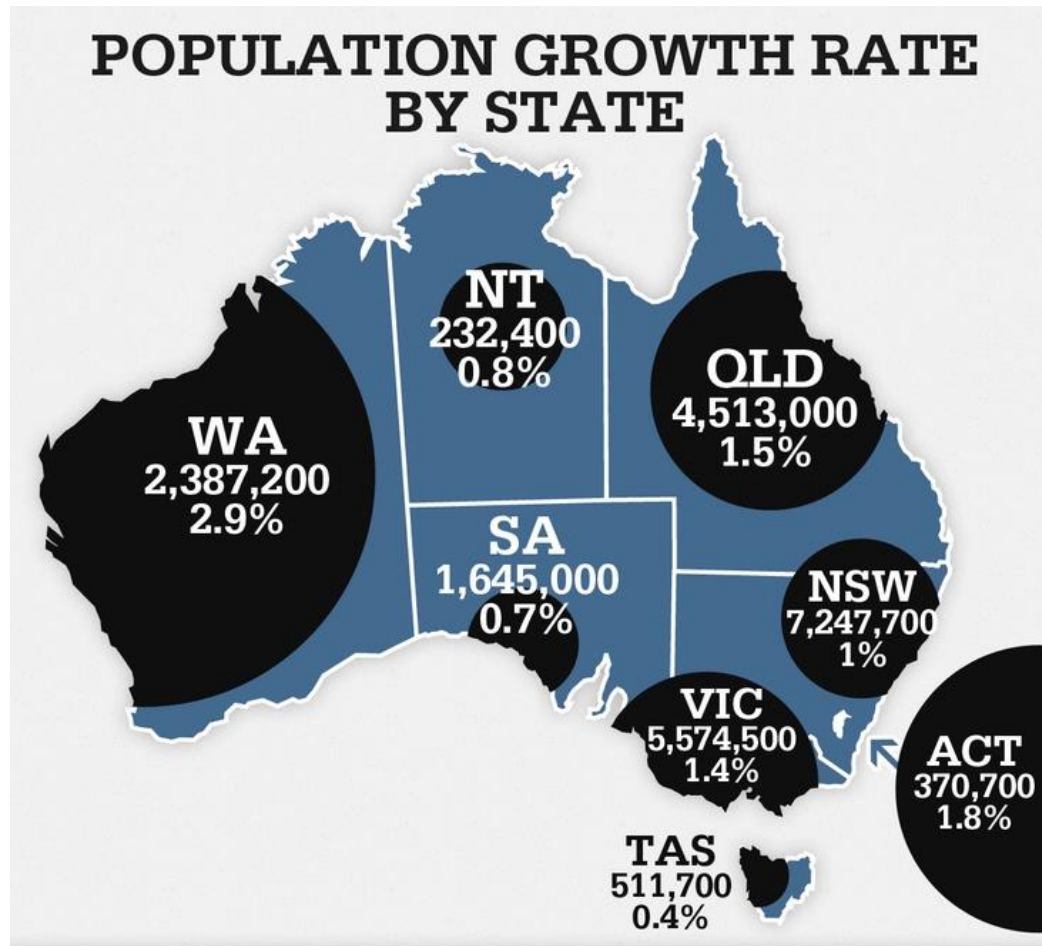
Experience of a Certificate Aggregator in the Australian Energy Efficiency Obligation Markets  
Asia Clean Energy Forum, June 2014

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# A bit about Australia



Sources: ABS, McCrindle Research

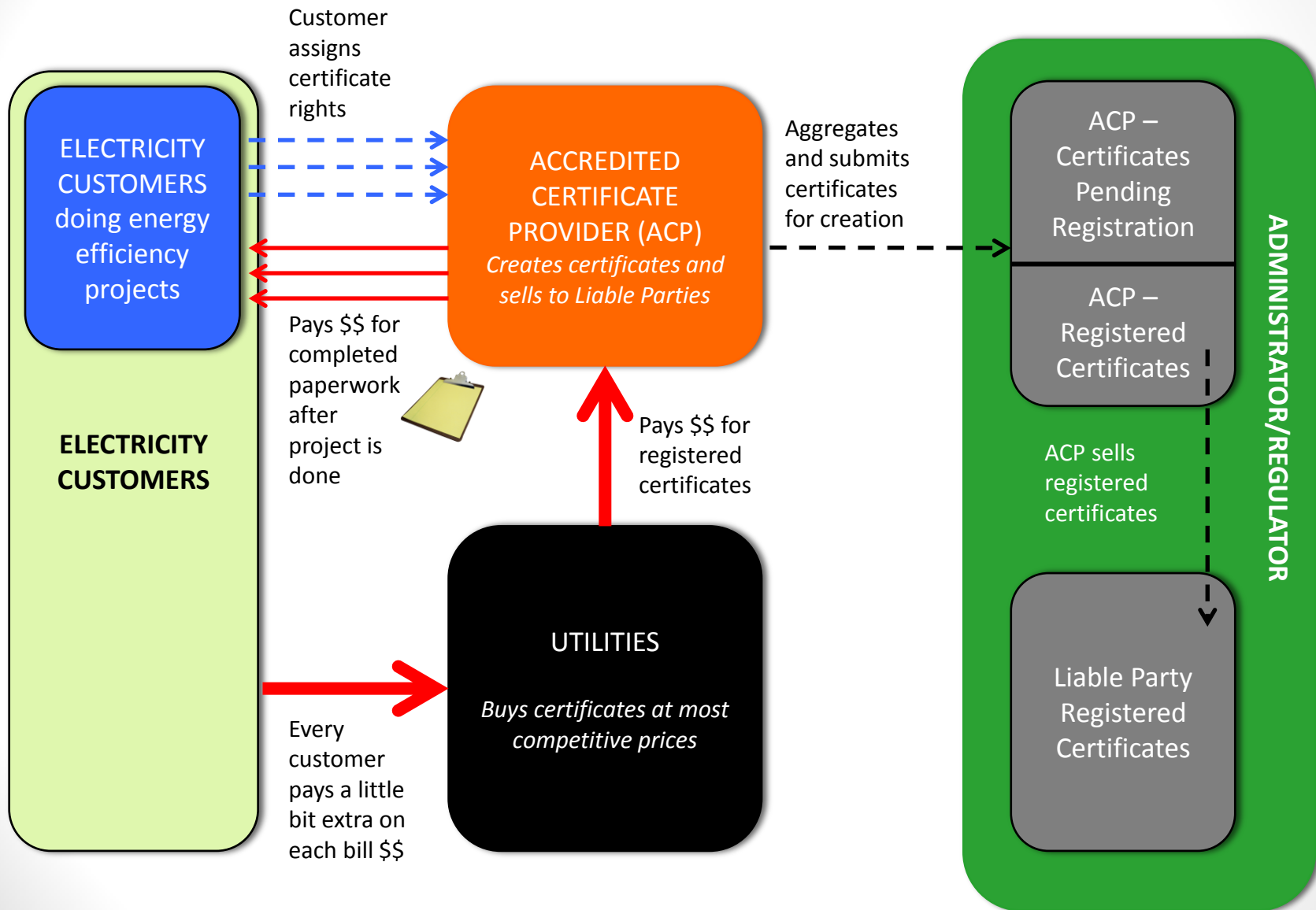
**mccrindle**  
research

know the times

# The big picture - NSW and VIC?

- **Objective:** Create a market to achieve greenhouse gas abatement through incentivising energy efficiency
- **How:** Government regulates and sets targets out to 2025 (NSW) and 2029 (VIC)
  - 2.3m certificates p.a. in NSW, 5.4m certificates p.a. in VIC, rising
  - Liability to purchase on Energy Retailers
  - 1 cert = 1 tonne CO<sub>2</sub>e (converted from MWh of energy savings)
  - Energy Retailers buy Certificates from an open market
  - Costs recovered from consumers
  - Penalties for non-compliance
  - Approved Methods include Deemed and Measured savings
  - Approved private sector actors create certificates after projects
  - Price floats based on supply and demand

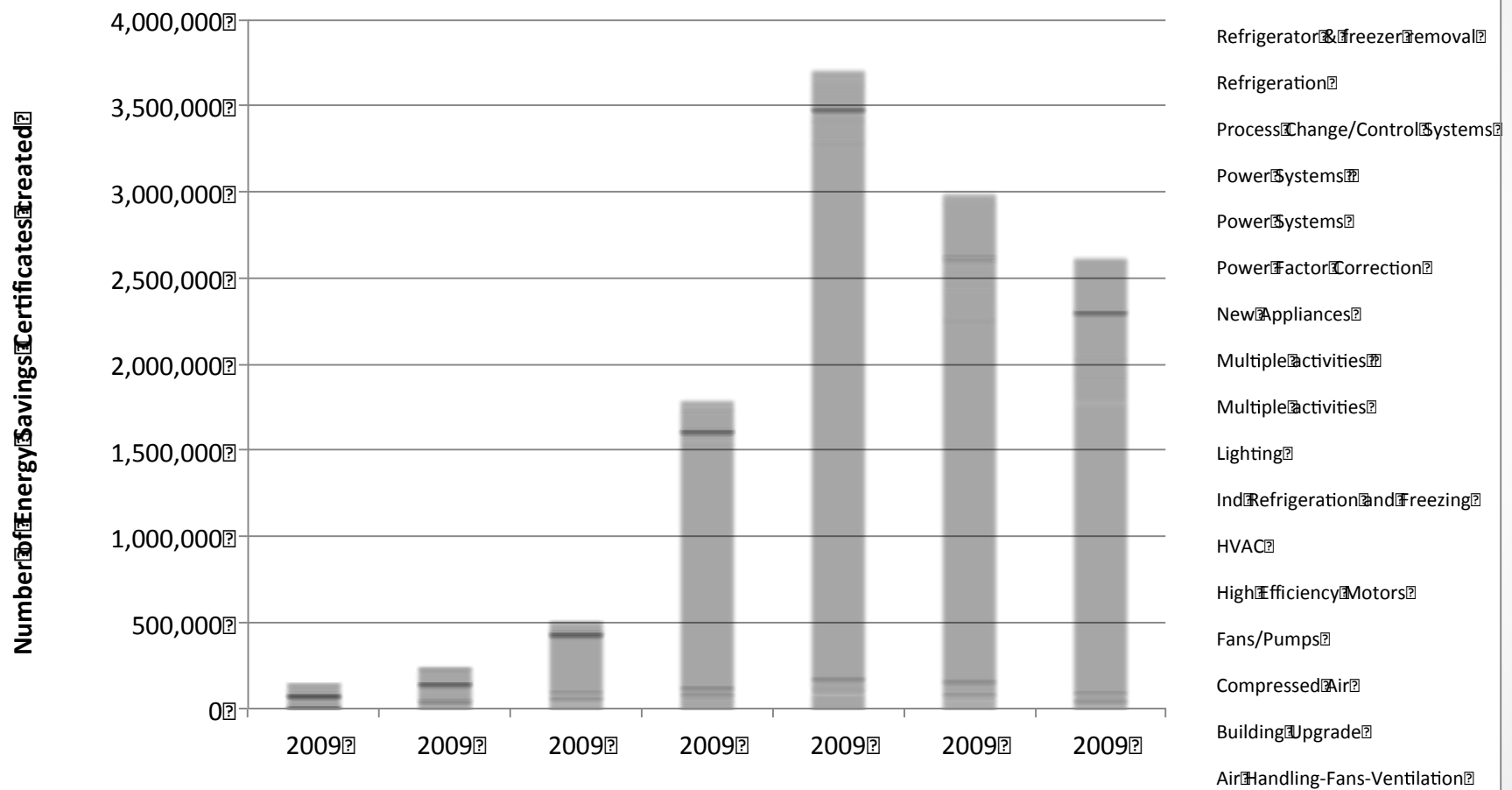
# Overview of schemes



# Comparing ESS & VEET

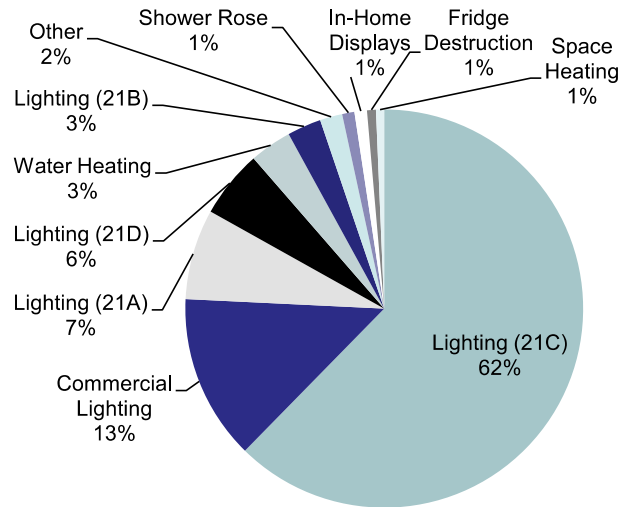
Metric	NSW Energy Savings Scheme (ESS)	Victorian Energy Efficiency Target (VEET)
Certificate name	Energy Saving Certificate (ESC)	Victorian Energy Efficiency Certificate (VEEC)
Start date	2009	1 January 2009 (7.5 years)
End date	2025	2029
Target	2.3m certificates p.a. (current year) (rising to ~3m p.a. in 2019)	5.4m Tonnes of CO <sub>2</sub> e p.a. (1 Tonne = 1 VEEC, rising to 6.5m in 2020)
Liable Parties	51	25
ACP / Aggregators	197	187
Registered certificates	15+ million	31+ million
Installations	Not available	3,221,186
Technologies/fuels eligible	All technologies / electricity and gas	Limited - lighting, hot water, HVAC, pool pumps, others/ Electricity only
Product approvals	Not available	30,000+
Methodologies	Deemed + Measurement-based	Deemed only
Sectors	Industrial, commercial, residential	Industrial, commercial, residential

# ESS – Lighting dominates



# VEET – lighting also dominates

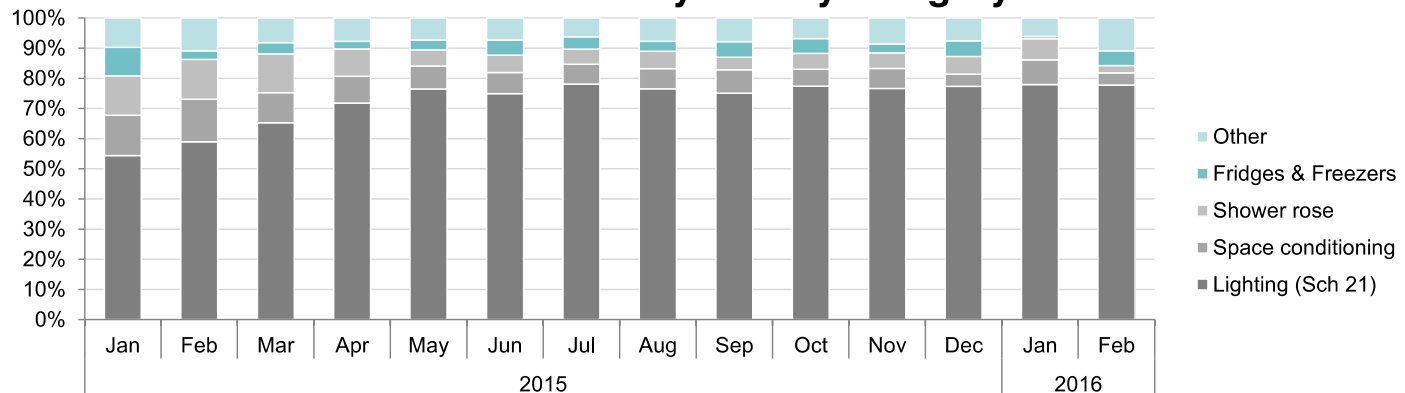
Cumulative Certificate Creation  
(Cal 2014-2015)



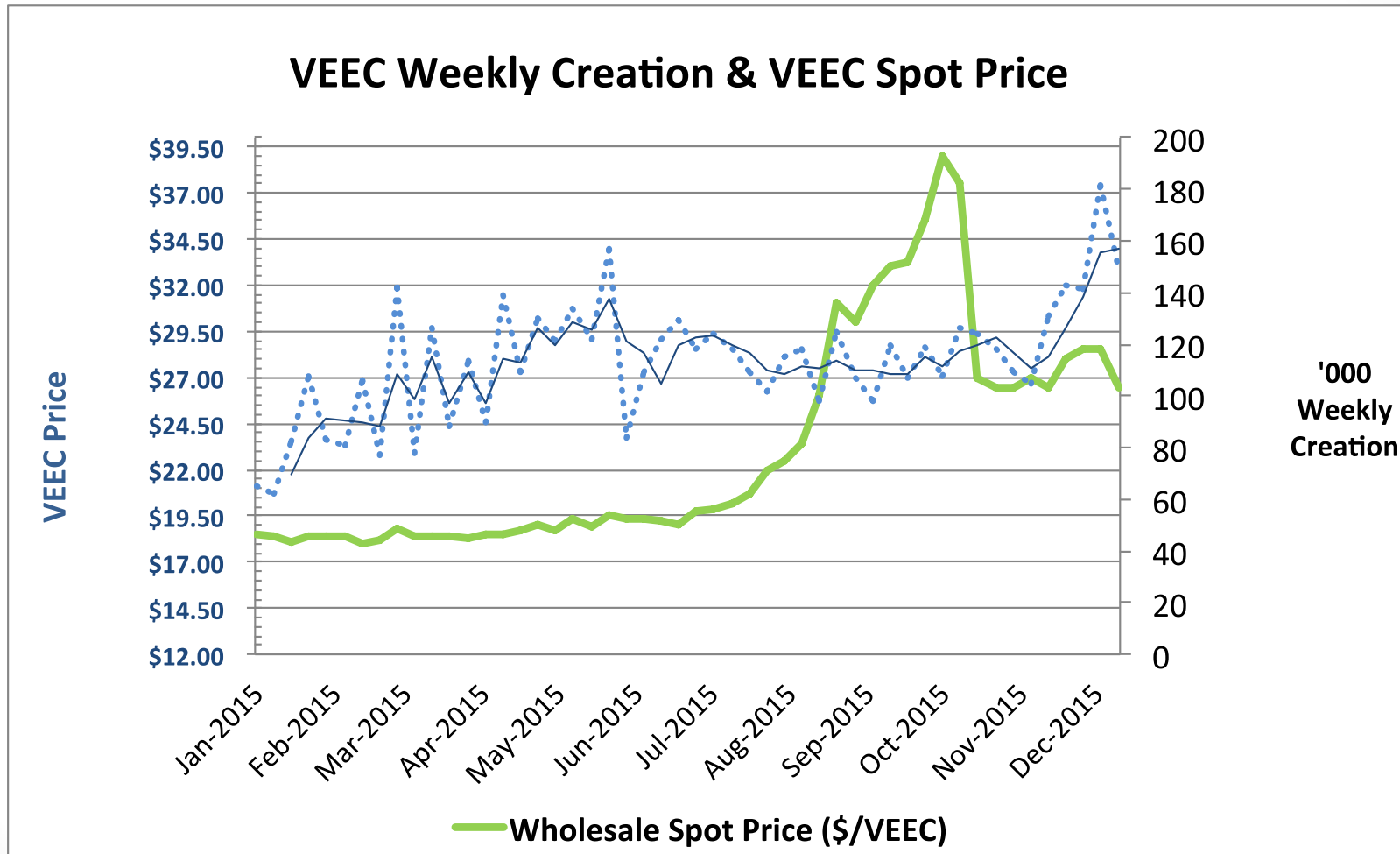
	2016 (YTD)	2015	2014
Lighting (21C)	619,801	3,860,935	1,111,411
Commercial Lighting	133,401	290,768	256,369
Lighting (21A)	72,954	334,111	778,001
Lighting (21D)	54,571	148,428	319,451
Water Heating	33,994	186,644	215,339
Lighting (21B)	27,509	570	0
Shower Rose	9,992	74,394	152,425
In-Home Displays	10,072	22,955	30,871
Fridge Destruction	7,200	56,943	47,760
Space Heating	6,586	67,137	76,479
Weather sealing	6,140	32,846	276,506
HE Television	5,945	41,568	26,347
Standby Power Controller	5,732	8,286	178,866
HE Pool Pump	191	878	1,265
Gas Heating Ductwork Replacement	19	221	34
HE Refrigerators and Freezers	10	47	128
HE Clothes Dryer	4	27	57
<b>Total</b>	<b>994,121</b>	<b>5,126,758</b>	<b>3,472,258</b>

% installations

## Installations by activity category



# VEEC/ESC pricing is volatile



# End user examples

## School gymnasium

72 x 400W MH replaced with  
38 x 250W LED

Project cost ~ \$30,000

Energy savings = \$11k p.a.

VEECs = \$9k once off

Wattly fee ~ \$2k

Net benefit = \$18k in Y1

## Office

271 x T8 (36W) replaced by  
271 x LED tube (18W)

Project cost = \$12,000

Energy savings = \$4k p.a.

VEECs = \$6k once off

Wattly fee ~ \$2k

Net benefit = \$8k in Y1

## Factory

41 x 400W MH replaced with  
41 x 200W quality LED, daylight &  
motion sensors

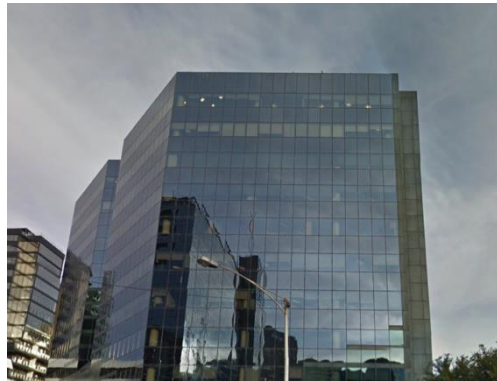
Project cost = \$27,500

Energy savings = \$11,000 p.a.

VEECs = \$10k once off

Wattly fee ~ \$3k

Net benefit = \$18k in Y1



# Challenges in operation

- Scheme administration
  - Setting the targets and penalty rate at the right level
  - Accrediting products quickly
  - Accrediting people/companies quickly – who can you trust?
  - Quality assurance for participating companies
  - Maintaining integrity in the savings (methods, audits) but low transaction costs
  - Policy certainty with a change in government
  - Length of time to get ACPs accredited (8-12 months)
  - Length of time & cost to get product approved

# Challenges in operation

- Lighting installations
  - Poor quality light and fixtures
  - Rogue installers
  - Duplicate installations
  - Products discarded after installation (e.g. standby power controllers)
  - 'Free' product not valued and not necessarily long term
  - Power Factor resulting from LED tube retrofit
  - Incomplete paperwork
- Government regulation very important

# ...but White certificates schemes work!

- Drives enormous activity
- locked in 40+million Tonnes CO<sub>2</sub>e of abatement over next 10y
- Several million installations
- Regulated market incentivises private sector
- Easy projects with low transaction costs are first
- There are overall economic benefits
- Schemes are broadening
- M&V capacity important for project-based activities
- **Market has developed tools and systems for efficient delivery that could be deployed elsewhere**

# *Helping business reduce energy costs*

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