

# Presentation to the Morgan Stanley Environment Day

3 May 2011



# Agenda

The logo for infigen, consisting of the word "infigen" in a lowercase, sans-serif font, enclosed within a white square border. The background of the slide features a purple and pink gradient with a dark horizontal line.

- **Renewable Energy Industry Context**
- Price Outlook and Scenarios
- A Specialist Renewable Energy Business
- Priorities and Outlook
- Questions

Presenters:

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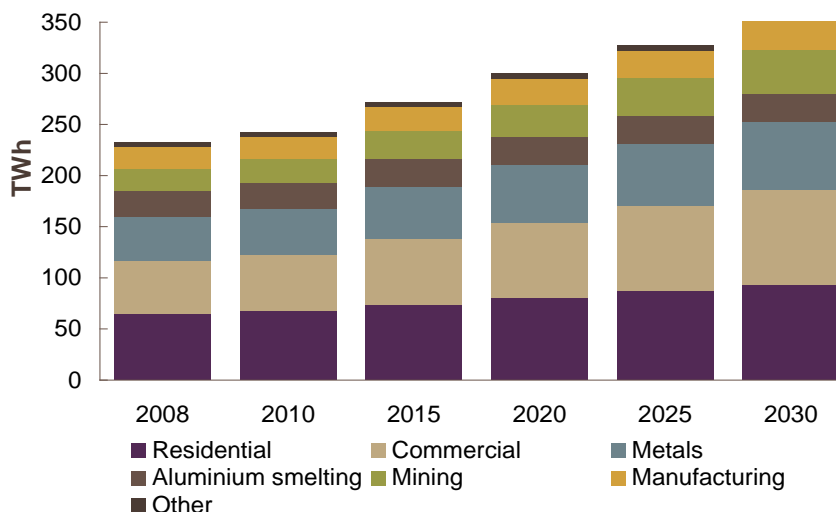
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# Growth in Electricity Demand in Australia

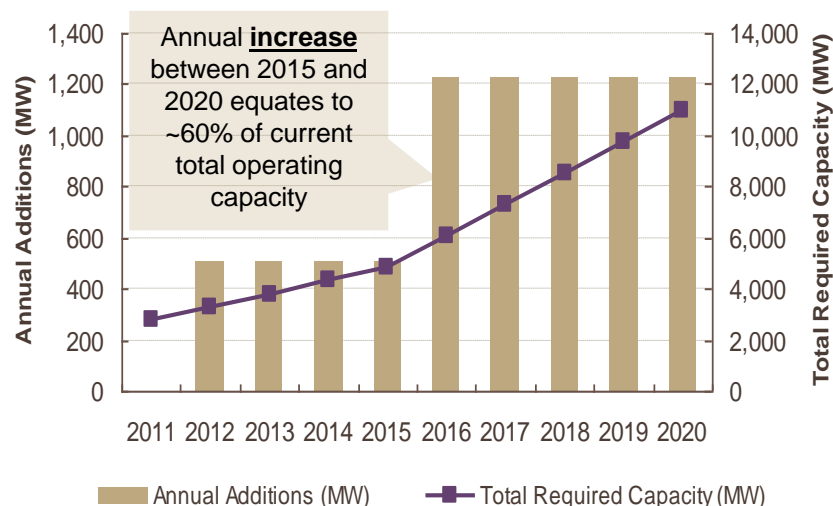
Renewable energy target is complementary to long term growth in electricity demand

Forecast Australian Electricity Consumption (TWh)



Source: ESAA Fact Sheet and ABARE Australian Energy National and State Projections to 2029-30

Wind Capacity Annual and Total Additions (MW)



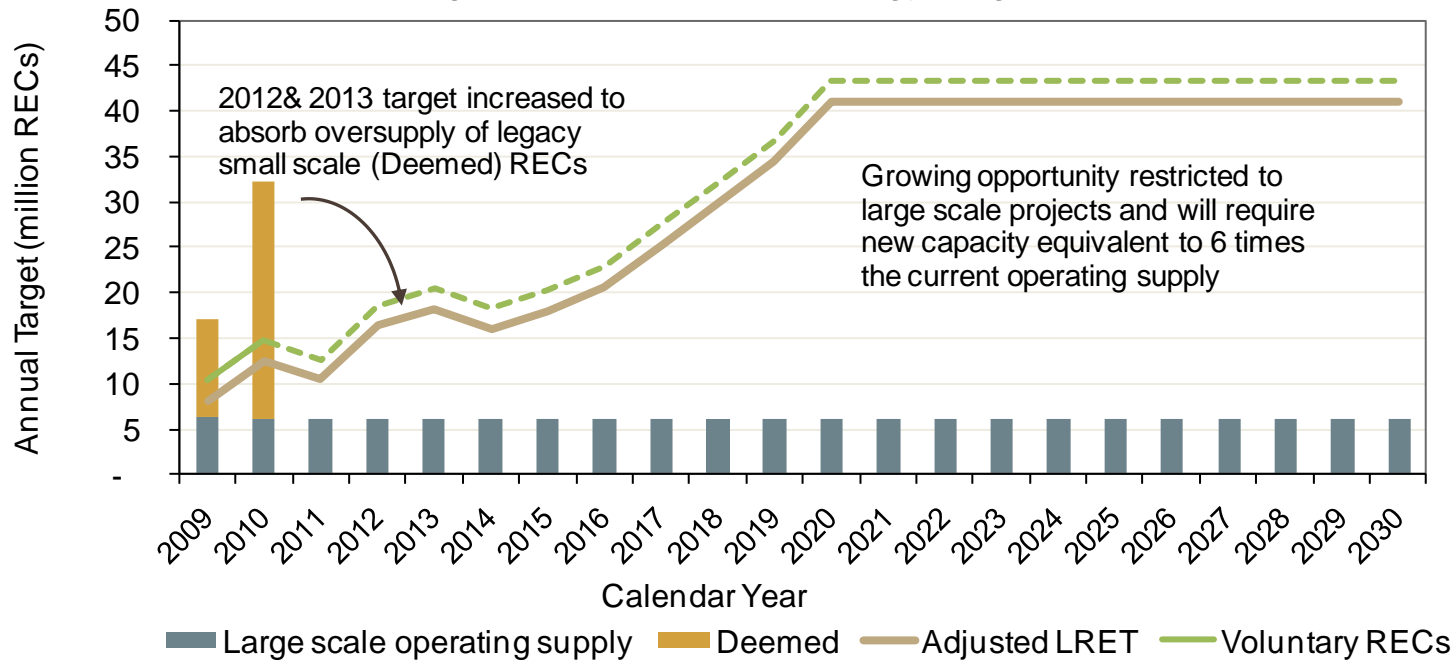
Source: Renewable Energy (Electricity) Act 2000. Amended up to Act no 69 (2010)  
 Note: Assumes 32% average capacity factor, wind contributes 75% of total LRET

- Demand driven by robust outlook for economy
- Average electricity consumption in the NEM is forecast to grow by 2.1% per annum over the next decade

- RET legislation underpins the mandated increased demand for renewable energy
- Wind energy expected to increase to >11 GW by 2020 from ~2 GW today
- Significant demand for carbon free electricity supply contracts driven by anticipation of a price on carbon and increase in voluntary green energy uptake

# Renewable Energy Target has bipartisan support

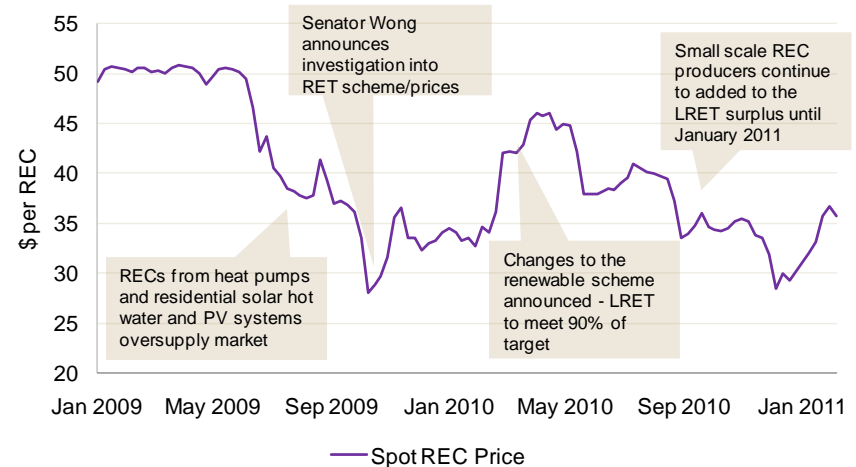
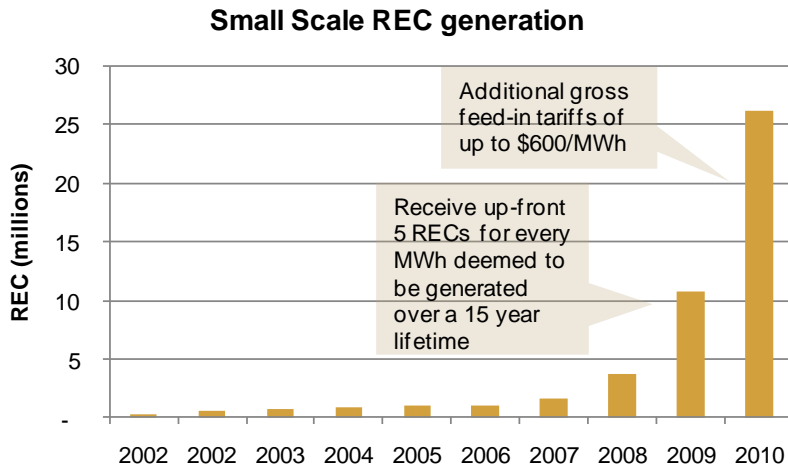
## Large Scale Renewable Energy Target



- Significant capacity required from large scale supply sources
- REC surplus working its way out of the system over the next 18 months to 2 years impedes early start
- The LRET ends in 2030. Without a carbon price to support zero emission technologies beyond 2030, insufficient returns will diminish the chances of building enough projects to achieve the target in the timeframe
- Current wholesale electricity prices will be insufficient to justify new-build renewables economics beyond the LRET scheme

# Good intentions - unintended consequences

Subsidies and incentives to encourage residential PV systems have temporarily increased electricity tariffs, depressed LREC prices, and stalled investment in large scale generation

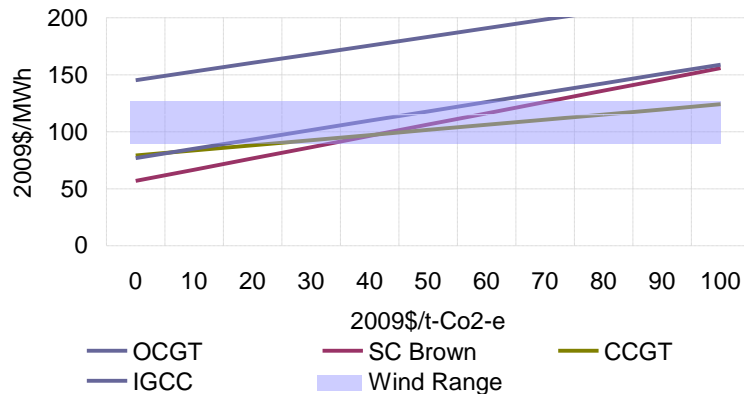


- Large and rapid increase in small scale generation reflective of overly generous subsidies
- Volatility introduced into the REC market where certainty once existed. Market participants react to supply/demand balance and proposed legislative solutions
- Exponential growth in solar PV installations resulted in the acceleration in delivery of the SRES target with temporary cost increases reflected in recent tariff determinations
- Large scale investment has stalled due to uncertainty and overhang of small scale RECs in scheme
- **Large scale projects can deliver the majority of the target at a reasonable cost with the support of good policy**

# Wind Energy leads RE Generation Technologies

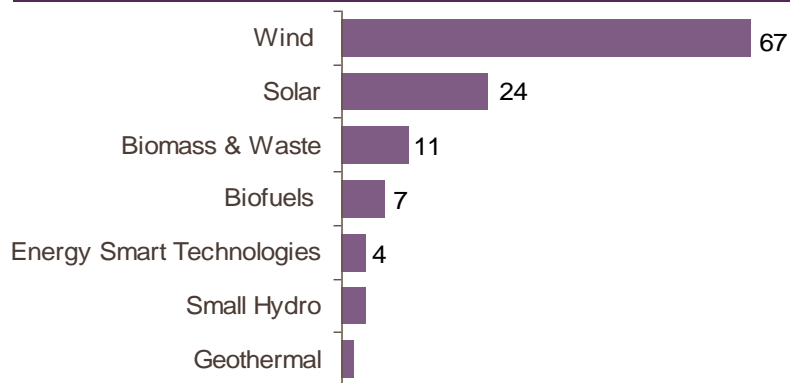
Wind energy is by far the most cost effective and proven utility scale renewable technology

## Comparative Cost Energy Generation



Source: ACIL Tasman: Fuel resource, new entry and generation costs in the NEM. April 2009; Wind Range - Infigen

## New Investment by Technology (2009, \$bn)



Source: United Nations Environment Program (ENEP), Global Trends in Sustainable Energy Investment (2010)

Long term economics of wind energy are supported by:

- Low technology risk
- Zero carbon emissions
- Rising fossil fuel prices
- Mandated renewable energy targets
- Introduction of a carbon price

Investment in wind generation is substantially greater than competing technologies

- Demand and investment will improve economics and efficiency
- Solar investment is predominantly small scale residential and highly subsidised
- Other marginal technologies are fuel and/or geographically constrained

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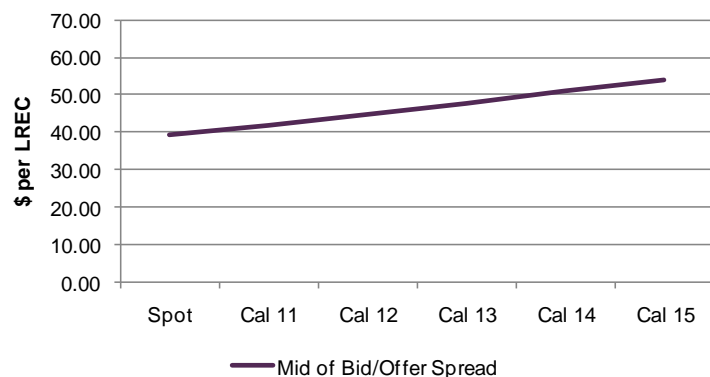
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# LREC and Electricity Price Outlook in Australia

A bundled LREC and Electricity price signal above \$100 per MWh is needed to support investment

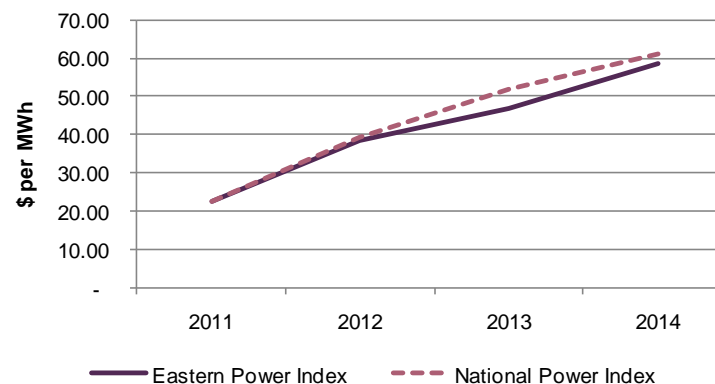
## Large Scale Renewable Energy Certificates

### Forward Price Curve



## Wholesale Electricity Price Index

### Forward Price Curve



Source: Mercari Environmental ECN Closing Rates on 19 April 2011

Source: d-cypha on 21 April 2011

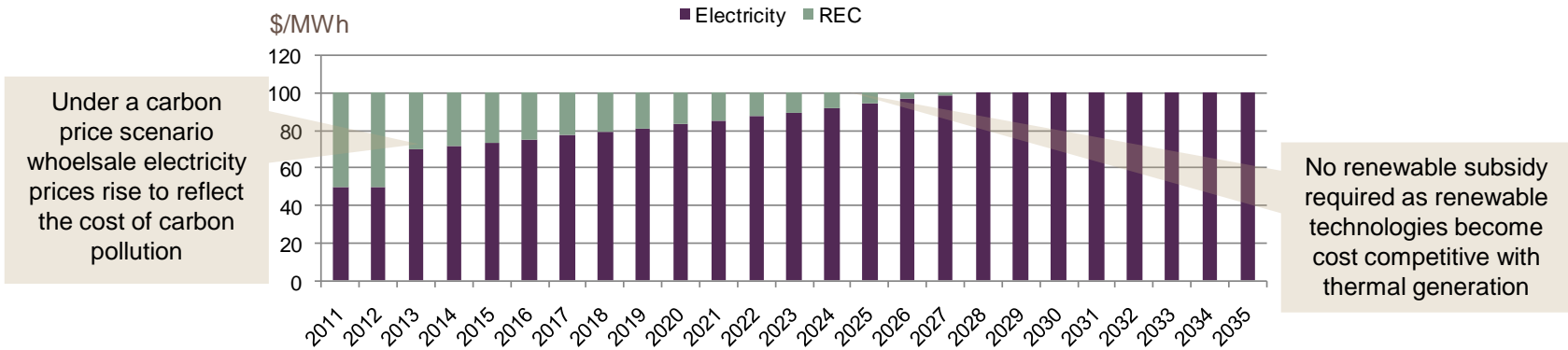
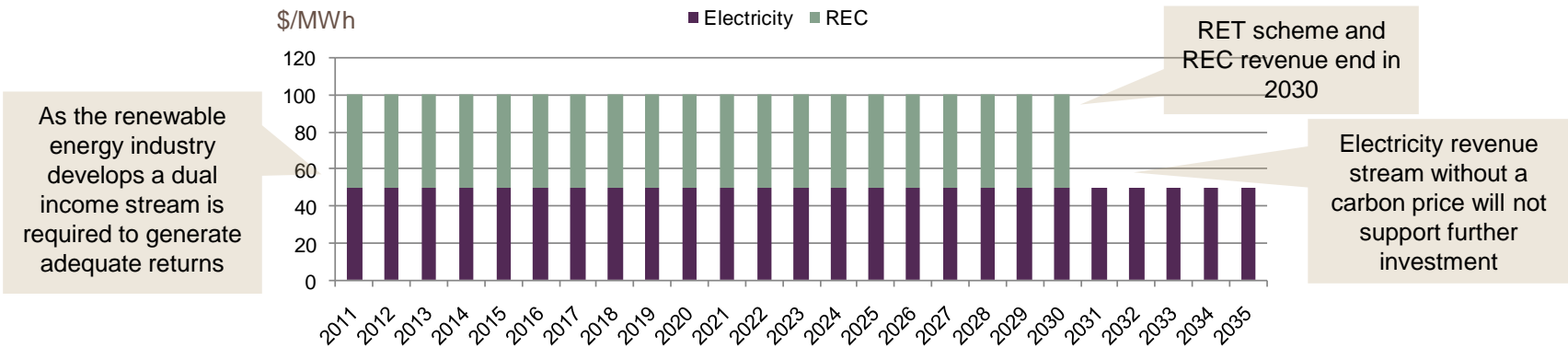
- Spot prices have recovered from the high \$20's in December
- Forward prices reflective of the cost of carry and support new build in 2014
- Forward traded volumes are thin and insufficient to support investment decisions
- Carbon price uncertainty is a contributor to stalled renewable investment

- Expected increase in wholesale electricity prices is due to demand and rising fuel costs
- LNG industry in Queensland progressing strongly and contributing to current and near term price softness
- New domestic coal and natural gas contracts are being priced at projected export parity levels
- Carbon tax flagged in 2012 for 3-5 years followed by a market mechanism. Few details available.



# Renewables and a Carbon Price are complementary

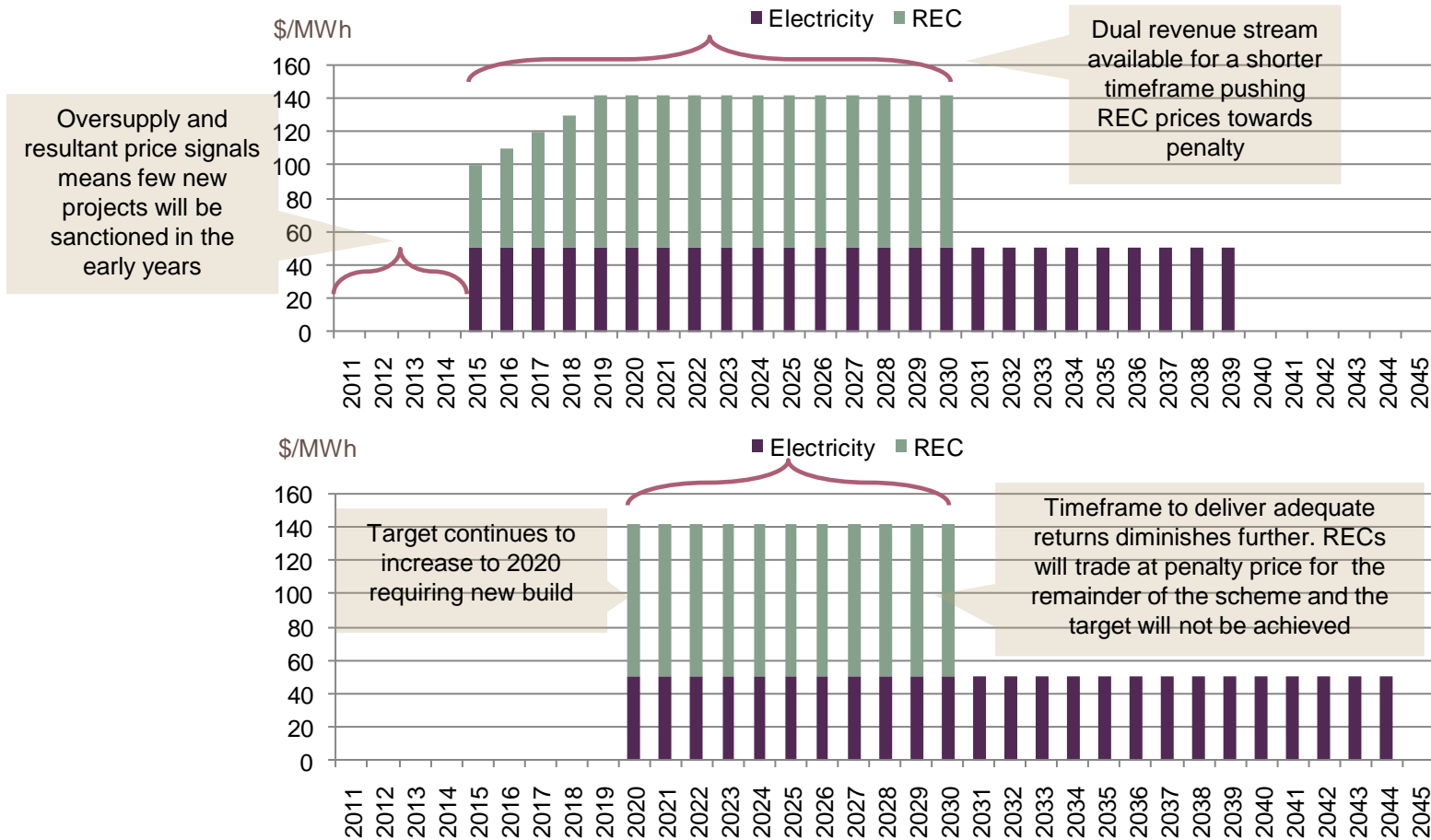
The expanded Renewable Energy Target and a price on carbon were always intended to be complementary measures to address climate change



- Illustrative examples only

# The cost of uncertainty...

Good policy is required as achieving the Renewable Energy Target will become difficult and more expensive unless there is investment certainty

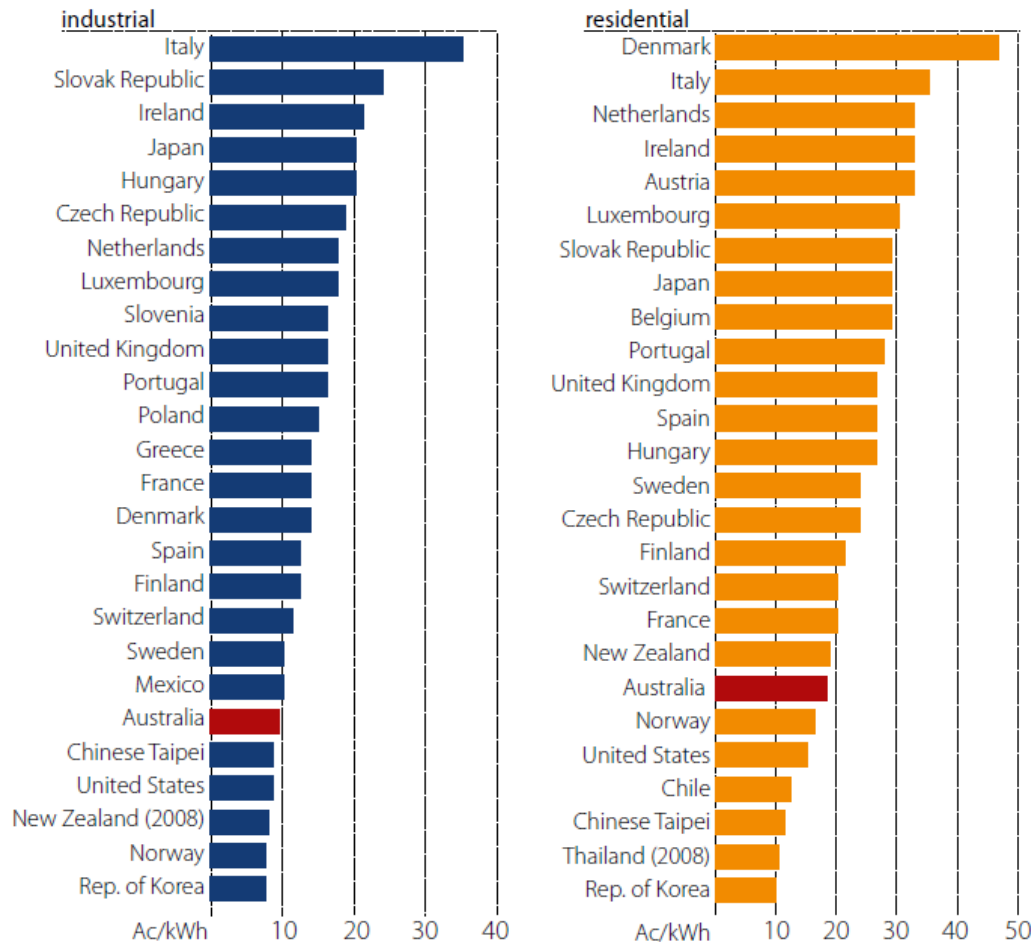


- Illustrative examples only

# Electricity Price Increases – still competitive

The cost of the RET is a minor contribution to overall electricity supply prices

World electricity prices, selected countries, 2009 a



- Australia has low electricity prices compared with most other OECD countries
- A carbon impost will increase wholesale electricity prices but will not materially change Australia's relative competitiveness
- EITE's largely compensated
- Despite network upgrade costs adding significant costs to residential tariffs the overall cost of electricity supply to Australian households remains low
- The cost of the large scale renewable energy target currently accounts for **approximately 2%** of the cost of residential supply

a Australian prices estimated using 2004 prices from IEA Energy Prices and Taxes, and ABS index of electricity prices for households and businesses.  
Sources: IEA, *Energy Prices and Taxes 2010*; ABS.

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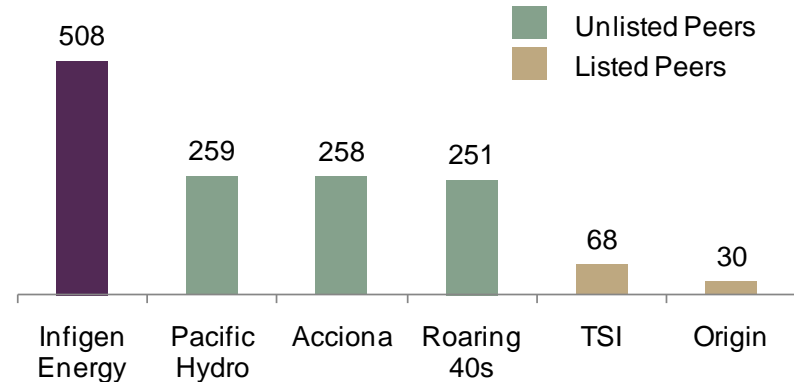
# Leading Australian Specialist Renewable Energy Business



## Milestones

- Generated >1.1 million MWh in FY10, equivalent to powering over 140,000 homes
- Completed construction of 140MW Capital Wind Farm – *largest wind farm in NSW*
- Completed 39MW expansion of Lake Bonney Wind Farm – *now largest wind farm in Australia*
- Construction of 48MW Woodlawn Wind Farm in NSW underway with completion expected by end 2011
- Acquired and developed in-house Australian energy markets capability
- Further progress on Infigen's large high quality and diverse development pipeline
- Established partnership with Suntech Power and short-listed for Solar Flagships program
- Operates over 2,100MW of wind energy generation globally

## Australian Wind Farm Owners (operating MW)



Source: Ecogeneration (2011) and company websites.



# Major Australian Projects

Owner and operator of long term assets – average remaining life c. 22 years



## LAKE BONNEY 1, SA

**Status:** Operational March 2005  
**Installed Capacity:** 80.5MW  
**Revenue:** Fully contracted until 2015  
**Warranty:** Ended March 2010  
**Capacity Factor:** 28%



## ALINTA, WA

**Status:** Operational January 2006  
**Installed Capacity:** 89.1MW  
**Revenue:** Energy contracted until 2026  
**Warranty:** Ended January 2011  
**Capacity Factor:** 44%



## LAKE BONNEY 2, SA

**Status:** Operational September 2008  
**Installed Capacity:** 159.0MW  
**Revenue:** Market  
**Warranty:** Ends September 2013  
**Capacity Factor:** 30%



## CAPITAL, NSW

**Status:** Operational November 2009  
**Installed Capacity:** 140.7MW  
**Revenue:** Majority contracted until 2030  
**Warranty:** Ends January 2015  
**Capacity Factor:** 36%



## LAKE BONNEY 3, SA

**Status:** Operational June 2010  
**Installed Capacity:** 39.0MW  
**Revenue:** Market  
**Warranty:** Ends September 2013  
**Capacity Factor:** 31%



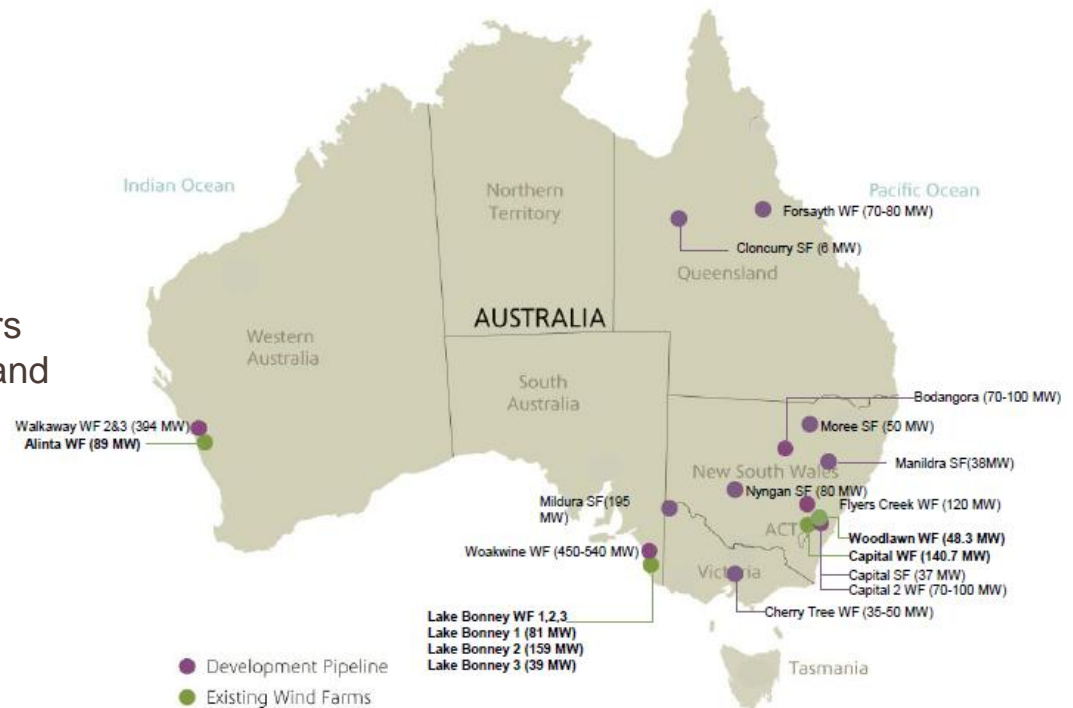
## WOODLAWN, NSW

**Status:** Under Construction  
**Total Capacity:** 48.3MW  
**Revenue:** N/A  
**Warranty:** 5 years  
**Capacity Factor:** 39%

# Portfolio will benefit from rising energy prices

Higher fossil fuel prices, a rapid and large increase in REC demand and a carbon price will put upward pressure on bundled prices

- Existing merchant portfolio set to benefit from higher prices
- PPAs begin to roll off into a short market
- High quality and diverse development pipeline positioned for improved market conditions
- Consolidation of electricity retailers post NSW privatisation leaves two large retailers with large liabilities, very short positions and limited in-house development capability
- Smaller retailers will also struggle to self supply
- Market demand for voluntary RECs continues to increase with customers totalling over 825,000 including 42,000 commercial customers



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# Priorities & Outlook

## INFIGEN

- Well positioned in the Australian renewable energy industry to capitalise on expected improvement in market conditions
- Proven track record in Australia provides a competitive advantage

## INDUSTRY CONDITIONS

- Fuel oversupply in energy markets is keeping merchant electricity prices low
- REC market is showing signs of recovery but has a long way to go to provide a new build signal
- Portfolio and pipeline can benefit from the introduction of a carbon price

## NEAR TERM PRIORITIES

- Continued focus on operational cost containment & corporate cost reduction
- Maintain and improve site availability above 95%
- Deliver Woodlawn on time and within budget
- Continue to progress pipeline towards a construction ready status

## FY11 GUIDANCE

- Production guidance reaffirmed (4,582 – 4,878 GWh)
- Revenue guidance reaffirmed (\$277.8 – 295.3 million)
- Operating costs currently within guidance

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