

Green Commodity Costs


UTS - 9 March 2011

Outline

Government's Climate Change Goals

Commonwealth Incentives and Instruments:

- Small-scale Renewable Energy Scheme (SRES)
- Large-scale Renewable Energy Scheme (LRES)
- Carbon Announcement – Impacts 'Black' Electricity Prices



Discuss
Today

- State Gov't Incentives, Capital Subsidies and Rebates
 - e.g. GGAS, ESS, GEC, Feed-in Tariff's and SHW rebates

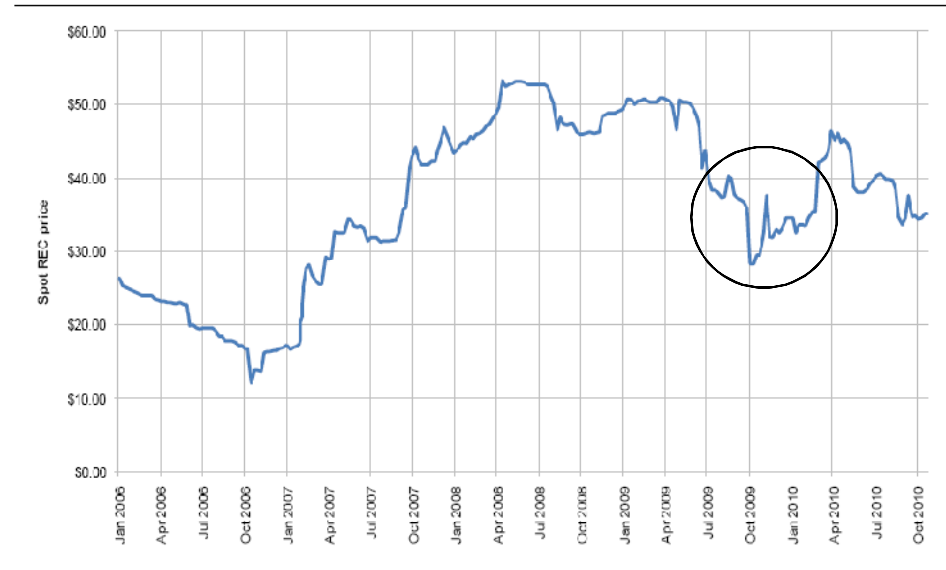


Some other
Time

Background

LRES & SRES

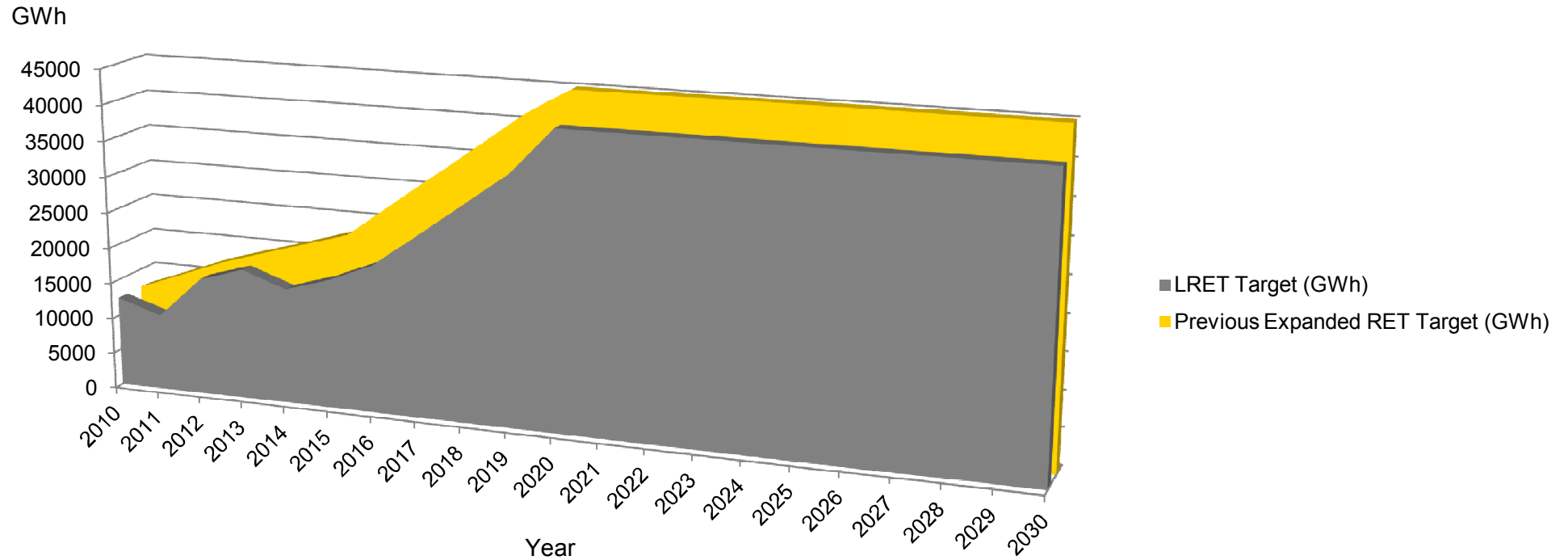
- Proliferation of small-scale renewables across the NEM in past 18 months:
 - Pursuant to State and Commonwealth Incentives:
 - Electricity Feed-in Tariff's;
 - Solar Multipliers and Deeming periods;
 - Capital Subsidies.
- Dampening of Forward Investment signals:
 - Increasing REC's registered;
 - Constraints in capital markets;
 - REC's used as collateral.



Data source: AFMA Environmental Products Curve (mean of mids, excluding outliers).

- Policy response – restoration of price signals:
 - Enhancements to 'Renewable Energy (Electricity) Bill 2010' enacted 24 June 2010;
 - Separate Small-Scale RECs from Large-Scale RECs;
 - Compliance under both SRES and LRES.

LRET Profile



- Difference in targets is accounted for by an estimate of Small-Scale Technology Certificate (STC) creation;
- Combined LRET/SRET may exceed previous expanded LRET;
- Targets adjusted by Office of Renewable Energy Regulator (ORER).

SRES attributes

- Effective 1 January 2011;
- Fixed Price of \$40 per STC;
- No Cap on STC creation from SGU's and SWH's;
- Liable parties that make 'relevant acquisitions';
- Quarterly STC surrender:
 - 35 per cent of annual cost due end of first quarter 2011.
- ORER determines Small-Scale Technology Percentage (STP):
 - By 31 March each year (released 1 December 2010 for this year);
 - Based on estimated STC's to be created in given year;
 - Impact of change in Solar Multiplier from 5 to 4 from 1 July 2011.

SRES cost estimates 2010/11 dollars

	2010/11	2011/12	2012/13
<i>STP</i>	14.80%	14.46%	12.74%
<i>Fixed Cost per STC (ex GST)</i>	\$40	\$40	\$40
<i>Adjustment Factor</i>	120%	n.a.	n.a.
<i>Incremental Cost of SRES</i>	\$7.10 per MWh	\$5.64 per MWh	\$4.85 per MWh

LRET Costs

Pursuant to change in Target – 2010/11 Dollars

Renewable Power Percentage (RPP) set by ORER:

	2010/11	2011/12	2012/13
<i>RPP (expanded RET - Frontier)</i>	6.10%	7.20%	8.10%
<i>RPP (LRET)</i>	5.80%	7.14%	9.17%
<i>Difference in RPP</i>	-0.30%	-0.06%	1.07%
<i>Forward Price</i>	\$37.50	\$41.03	\$43.20
<i>Incremental Cost of Change in Targets</i>	-\$0.11 per MWh	-\$0.02 per MWh	\$0.46 per MWh
<i>Current RET Cost</i>	\$2.29 per MWh	\$2.95 per MWh	\$3.50 per MWh
<i>Incremental Cost of LRET</i>	\$2.18 per MWh	\$2.93 per MWh	\$3.96 per MWh

Green Commodity Costs - LGCs

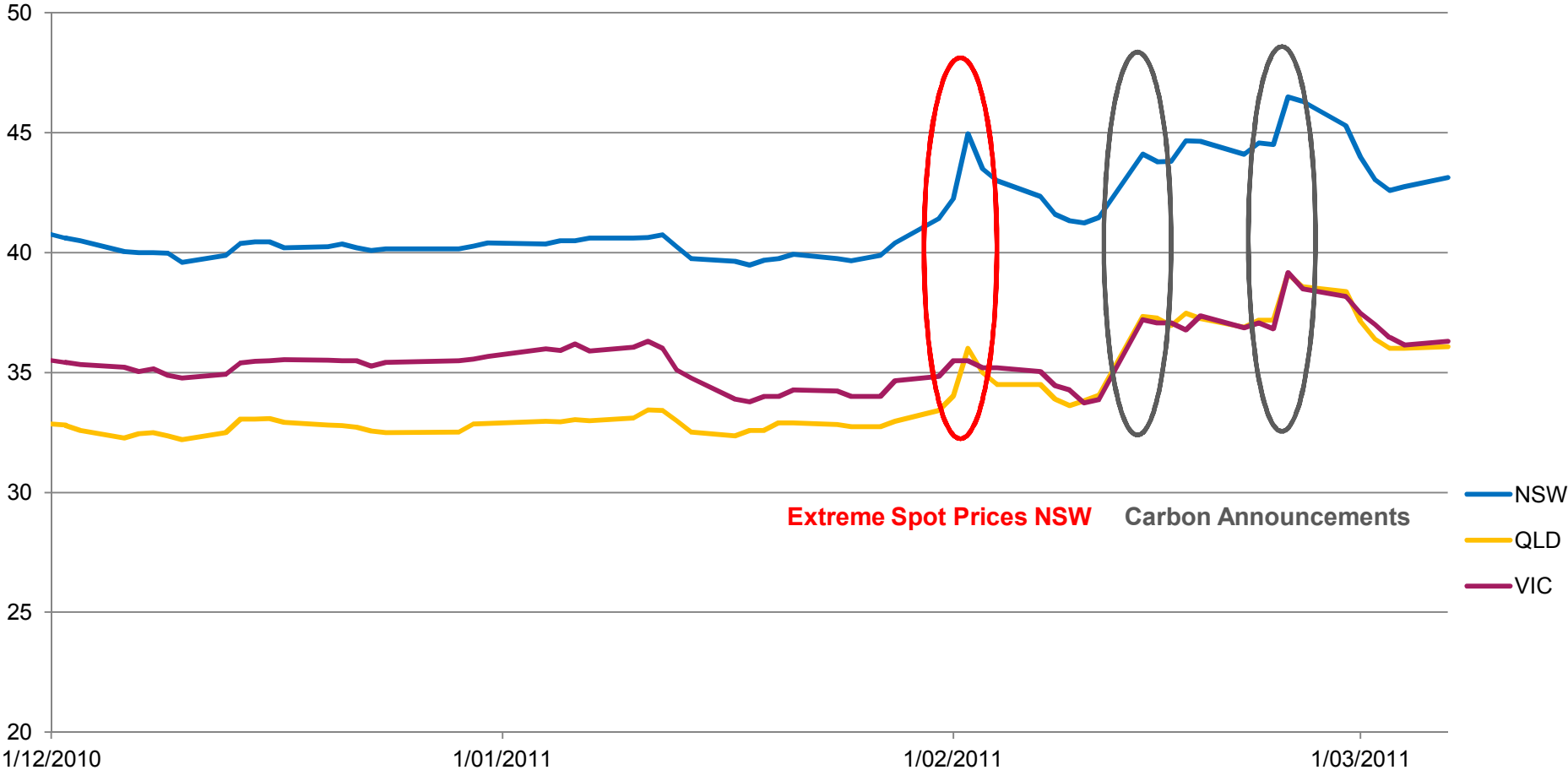
Pursuant to Carbon Announcement

- Green Commodity Inventories:
 - ensure compliance with Green Schemes and minimise short-fall risk.
 - encompass value, inventory risk and take up risk capital
- Green Commodity Curves reflect:
 - cash-cost-of-carry with ample inventories:
 - OTC Trading and Repo's of spot LGC's.
 - LRMC of new entry when inventory is required.
 - Interaction of 'Black' Electricity price:
 - Carbon Announcements impact Black Electricity Curves and LGC curves
 - Higher 'Black' electricity prices diminish need for subsidy in LGC prices – in theory
 - Multiple factors – e.g. Carbon Intensity Factors and Pass through, Expected Generation Mix, Marginal renewable plant economics and market considerations.

Spot	\$37.50
Cal11	\$40.46
Cal12	\$43.66
Cal13	\$47.11

Carbon Announcements

Electricity Futures Price Impacts – Base Cal12 Contract – Data from D-Cyphatrade



Financial Tools

The transition to Carbon Pricing

- General acceptance that uncertainty pertaining to carbon *delays* investment;
- Uncertainty is not *totally* resolved with a fixed carbon price. Regulatory and market uncertainty remains throughout the transition and beyond:
 - Some existing Green Schemes and incentives will still operate to complement *or* distort Carbon price signals;
 - Future Carbon Prices and pass-through impacts investment.
- Two timeframes to dealing with uncertainty:
 - Investment Timeframe – long run adjustment in energy mix;
 - Operating Timeframe – short run adjustments in fuel switching.
- Real Options Analysis:
 - Extract flexibility with investment decisions in the Long-Run
 - Optimise operations in the short-run across fuels and across peak, flat and off-peak.

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