
Research Note: The impact of industry assistance measures under the Carbon Pollution Reduction Scheme - White Paper update

18 December 2008

The Australian government released its Carbon Pollution Reduction Scheme (CPRS) White Paper on 15 December, providing more detail on its plans for the scheme, to be introduced in 2010. Included in the White Paper is further detail on planned assistance to Emissions-Intensive Trade-Exposed (EITE) industries, notably an expansion in eligibility that will see the Liquefied Natural Gas (LNG) and petroleum refining industries eligible for assistance. Also included is greater clarity on the scope and recipients of assistance under the Electricity Sector Adjustment Scheme (ESAS), designed to compensate coal-fired electricity generators for losses in asset values as a result of the CPRS. This note updates research [previously undertaken](#) by Innovest to identify the major recipients and likely magnitudes of EITE and ESAS assistance. Innovest was again engaged by the Australian Conservation Foundation (ACF) to undertake this analysis. Our key findings are outlined below.

ASSISTANCE TO EMISSIONS-INTENSIVE TRADE-EXPOSED (EITE) INDUSTRIES

In the first year of the CPRS, we estimate that \$939 million in EITE assistance will go to companies in the aluminium smelting industry in the form of free permits, \$297 million will go to petroleum refiners, \$261 million to steel makers, \$251 million to alumina refiners, \$182 million to LNG producers, and \$157 million to cement makers (see Table 1 overleaf). These estimates are based on reported 2007 output levels, 2004-2008 average commodity prices, emissions intensity estimates from the Green Paper, and a carbon price of \$25.

By 2015, a significant number of additional LNG projects are set to be operating, and the government projects that permit prices will have risen to \$35/tonne. In 2015 we estimate that free permits worth \$1.26 billion will go to the aluminium smelting industry, \$684 million will go to LNG producers, \$399 million to petroleum refiners, \$350 million to steel makers, \$337 million to alumina refiners, and \$210 million to cement makers. This 2015 analysis takes account of the 1.3% p.a. 'carbon productivity' reduction in free permits explained in the White Paper, and assumes constant 2007 output levels for all industries except LNG, for which a large number of projects are expected to commence operation, including Gorgon, Browse, Sunrise and Thebe projects, and a number of coal-seam gas to LNG projects. These would more than double the current production of LNG in Australia.

AUTHORS

Drew Fryer
dfryer@innovestgroup.com

Mark Barraclough
mbarraclough@innovestgroup.com

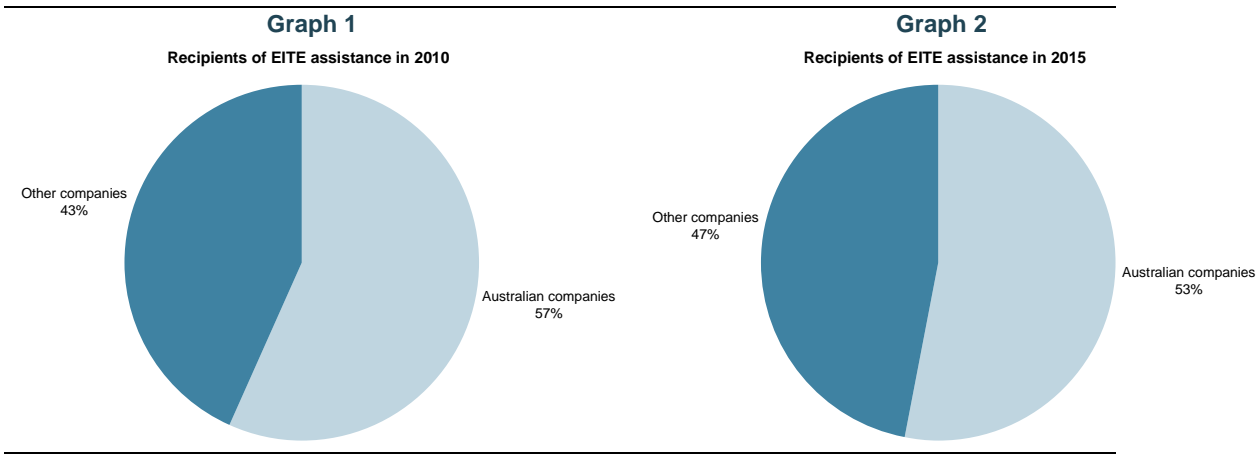
Regan Crooks
rcrooks@innovestgroup.com

In 2010, \$939m in free permits will go to aluminium smelters, \$297m to petroleum refiners, \$261m to steel, \$251m to alumina refiners, \$182m to LNG producers, and \$157m to cement makers.

Table 1: Assistance to emissions-intensive trade-exposed sectors

Industry sector	Assistance in 2010-11 (nominal \$million at \$25 permit price)	Assistance in 2014-15 (nominal \$million at \$35 permit price)	Assistance rate (initial assistance as % of baseline emissions)
Aluminium smelting	939	1,261	90
Cement	157	210	
Steel	261	350	
Alumina refining	251	337	60
LNG	182	684	
Petroleum refining	297	399	
Total – six largest EITE industries	2,087	3,243	
Total available EITE assistance (25% of all permits)	2,808	4,411	

At a company level we estimate that in 2010, 57% of EITE assistance will go to Australian companies and 43% to companies from other countries. In 2015, 53% will go to Australian companies and 47% to other companies (Graphs 1 and 2).



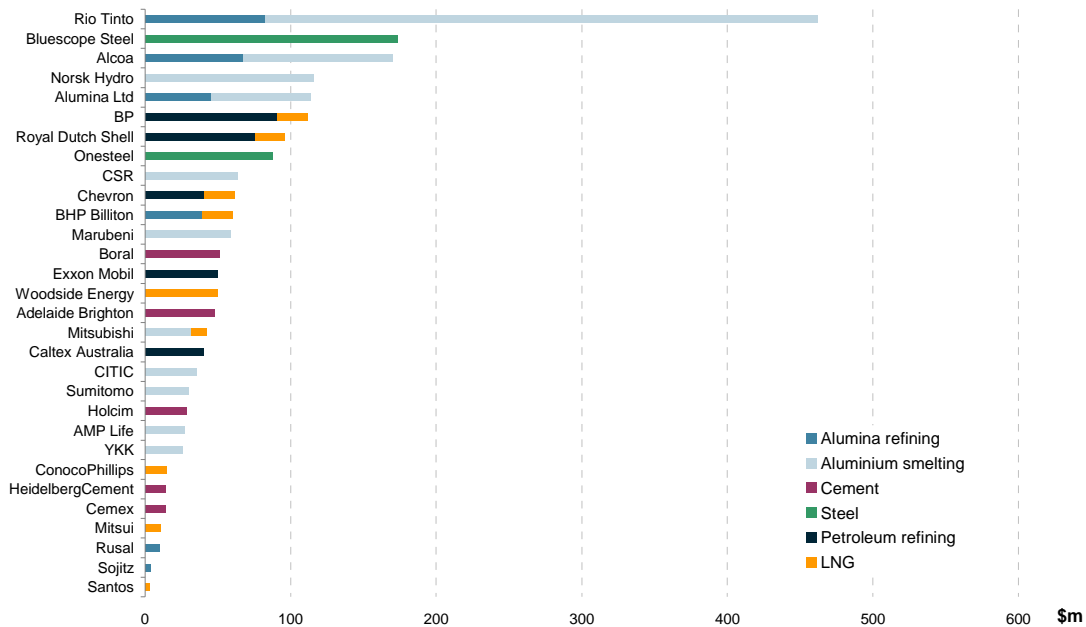
The largest recipients of EITE assistance in 2010 are expected to be Rio Tinto (\$462m), Bluescope Steel (\$174m), Alcoa (\$170m), Norsk Hydro (\$116m) and Alumina Ltd (\$113m). In 2015, the top five recipients are Rio Tinto (\$620m), Bluescope Steel (\$233m), Alcoa (\$228m), Royal Dutch Shell (\$186m) and Chevron (\$173m). Our estimates of the top thirty company recipients of EITE assistance in 2010 and 2015 are included in Graphs 3 and 4, and Tables 2 and 3 overleaf.

Other industries may also be eligible for EITE assistance apart from those analysed in this note, though there is so far a lack of certainty regarding the exact activities covered or the scale of assistance to be offered. This assistance may cover parts of the pulp and paper, chemicals, plastics, iron and steel, glass, and other non-ferrous metals sectors. Australia's silicon and lime industries are also expected to receive EITE assistance, but were omitted from our analysis because of their relatively small size. The EITE assistance estimated for the six sectors in Table 1 would constitute 19% of total permits in 2010-11 and 21% in 2014-15, slightly below the 25% the government is making available initially for EITE industries. From 2015, agricultural sectors may also be included under the CPRS, in which case dairy and beef cattle, sheep and pig farming, and

sugar cane are all likely to be eligible for EITE assistance. The inclusion of agriculture, together with additional free permits for expanded production or new entrants in EITE sectors, could see 45% of permits provided for free by 2020.

Graph 3

Emissions-Intensive Trade-Exposed industry assistance in 2010



Graph 4

Emissions-Intensive Trade-Exposed industry assistance in 2015

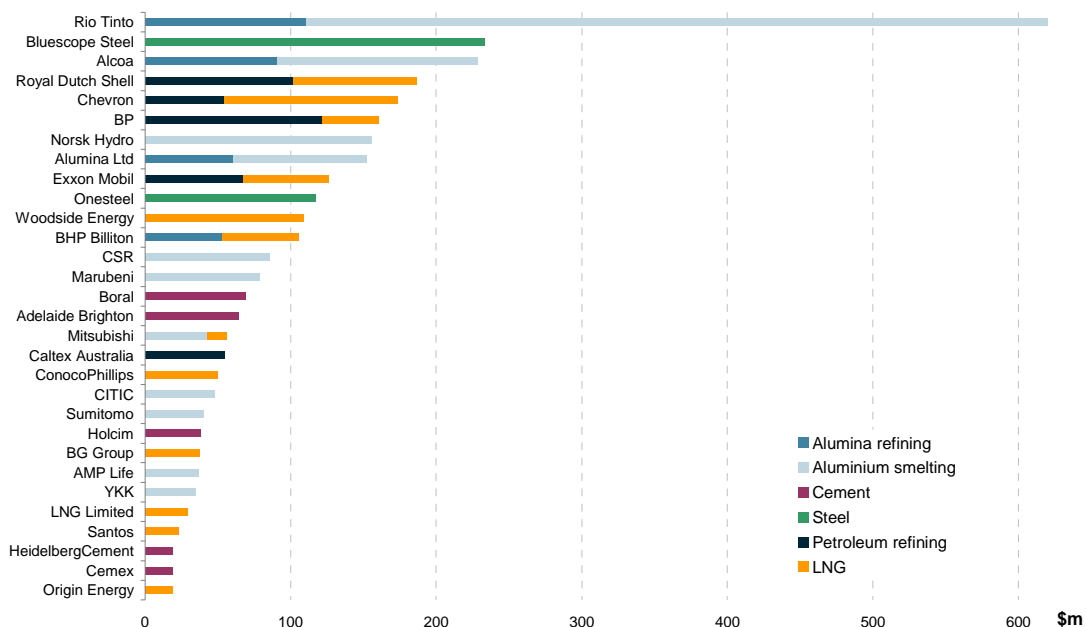


Table 2: Thirty largest recipients of EITE assistance in 2010

	Entity	Country	Assistance (nominal \$m in 2010)
1	Rio Tinto	Australia/UK	462
2	Bluescope Steel	Australia	174
3	Alcoa	US	170
4	Norsk Hydro	Norway	116
5	Alumina Ltd	Australia	113
6	BP	UK	111
7	Royal Dutch Shell	UK/Netherlands	96
8	Onesteel	Australia	87
9	CSR	Australia	64
10	Chevron	US	61
11	BHP Billiton	Australia/UK	60
12	Marubeni	Japan	59
13	Boral	Australia	52
14	Exxon Mobil	US	50
15	Woodside Energy	Australia	50
16	Adelaide Brighton	Australia	48
17	Mitsubishi	Japan	42
18	Caltex Australia	Australia	40
19	CITIC	China	36
20	Sumitomo	Japan	30
21	Holcim	Switzerland	29
22	AMP Life	Australia	27
23	YKK	Japan	26
24	ConocoPhillips	US	15
25	Cemex	Mexico	14
26	HeidelbergCement	Germany	14
27	Mitsui	Japan	10
28	Rusal	Russia	10
29	Sojitz	Japan	4
30	Santos	Australia	3

Table 3: Thirty largest recipients of EITE assistance In 2015

	Entity	Country	Assistance (nominal \$m in 2015)
1	Rio Tinto	Australia/UK	620
2	Bluescope Steel	Australia	233
3	Alcoa	US	228
4	Royal Dutch Shell	UK/Netherlands	186
5	Chevron	US	173
6	BP	UK	160
7	Norsk Hydro	Norway	156
8	Alumina Ltd	Australia	152
9	Exxon Mobil	US	126
10	Onesteel	Australia	117
11	Woodside Energy	Australia	109
12	BHP Billiton	Australia/UK	106
13	CSR	Australia	86
14	Marubeni	Japan	79
15	Boral	Australia	69
16	Adelaide Brighton	Australia	64
17	Mitsubishi	Japan	56
18	Caltex Australia	Australia	54
19	ConocoPhillips	US	50
20	CITIC	China	48
21	Sumitomo	Japan	40
22	Holcim	Switzerland	38
23	BG Group	UK	38
24	AMP Life	Australia	37
25	YKK	Japan	35
26	LNG Limited	Australia	29
27	Santos	Australia	23
28	Cemex	Mexico	19
29	HeidelbergCement	Germany	19
30	Origin Energy	Australia	19

THE ELECTRICITY SECTOR ADJUSTMENT SCHEME (ESAS)

The White Paper makes several changes to the formula for ESAS assistance originally set out in the Green Paper in July, moving to a model that provides eligibility only for generators with an emissions intensity above 0.86 tonnes CO₂-e/MWh, and in proportion to historical electricity output instead of capacity. The assistance will comprise 130.7 million free permits with an estimated nominal value of \$3.9 billion, allocated over the first five years of the CPRS. The yearly size and value of this permit allocation is outlined in Table 5.

Table 5: Yearly allocations of ESAS assistance

Year	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Permits allocated (million)	26.14	26.14	26.14	26.14	26.14	130.7
Price (nominal \$)	25	26.43	29.26	32.32	35.37	-
Value (nominal \$m)	653.5	690.9	764.9	844.8	924.6	3,878.7

To accurately estimate ESAS assistance for each generator, three years of data on electricity output are required, from 2004-05 to 2006-07, along with emissions intensity data. This data is not made publicly available by all generators. Where unavailable we have estimated these figures on the basis of age, type and location of the generator.

On this basis we expect the lions share of ESAS assistance to go to the large Victorian brown coal-fired generators, notably the owners of Hazelwood (with 25.5% of free permits available or \$990m over five years), Yallourn (19% or \$738m), Loy Yang A (17.4% or \$677m), and Loy Yang B (8.9% or \$344m). These results are listed in full in Table 6. By our estimates, the ten remaining major coal-fired generators not listed in Table 6 are unlikely to be eligible for ESAS assistance.¹

Table 6: ESAS assistance by generator

	Generator	State	Fuel type	ESAS assistance (% of total)	ESAS assistance (nominal \$m over 5 yrs)
1	Hazelwood	Vic	Brown coal	25.5	990
2	Yallourn	Vic	Brown coal	19.0	738
3	Loy Yang A	Vic	Brown coal	17.4	677
4	Loy Yang B	Vic	Brown coal	8.9	344
5	Gladstone	Qld	Black coal	3.9	152
6	Bayswater	NSW	Black coal	3.4	131
7	Liddell	NSW	Black coal	3.4	130
8	Northern	SA	Black coal	2.6	103
9	Muja	WA	Black coal	2.4	95
10	Thomas Playford B	SA	Black coal	2.3	88
11	Morwell	Vic	Brown coal	2.0	78
12	Anglesea	Vic	Brown coal	1.8	70
13	Wallerawang	NSW	Black coal	1.7	67
14	Swanbank B	Qld	Black coal	1.3	49
15	Tarong	Qld	Black coal	1.0	40
16	Munmorah	NSW	Black coal	0.9	37
17	Vales Point	NSW	Black coal	0.8	30
18	Callide B	Qld	Black coal	0.6	22
19	Collinsville	Qld	Black coal	0.4	14
20	Redbank	NSW	Black coal	0.3	13
21	Worsley	WA	Black coal	0.2	9
Total				100	3,879

¹ The ten generators that are estimated to be ineligible are Blueswaters, Callide C, Collie, Eraring, Kogan Creek, Kwinana, Milmerran, Mt Piper, Stanwell and Tarong North.

Looking instead at the recipients of ESAS assistance in terms of the underlying equity holders of each of the eligible generators², the largest recipients of ESAS assistance are International Power Plc (with 29.7% of assistance or \$1,152m over five years), CLP Power International (19% or \$738m), the New South Wales government (10.2% or \$396m), and AGL Energy and Tokyo Electric Power (with 5.7% or \$220m each). For the full list of likely recipients, refer to Table 7.

Table 7: ESAS assistance by equity holder

	Generator	Country of origin	ESAS assistance (% of total)	ESAS assistance (nominal \$m over 5 years)
1	International Power Plc	UK	29.7	1,152
2	CLP Power International	Hong Kong	19.0	738
3	NSW government	Australia (govt)	10.2	396
4	AGL Energy	Australia	5.7	220
5	Tokyo Electric Power	Japan	5.7	220
6	Babcock & Brown Power	Australia	5.3	204
7	Qld government	Australia (govt)	2.9	112
8	Transfield Services	Australia	2.8	109
9	Mitsui & Co (Japan)	Japan	2.7	103
10	WA government	Australia (govt)	2.4	95
11	MTAA Superannuation	Australia	2.2	87
12	Commonwealth Bank Group	Australia	2.0	79
13	HRL Limited	Australia	2.0	78
14	Rio Tinto	Australia/UK	1.6	64
15	NRG (US)	US	1.5	57
16	Alcoa (US)	US	1.1	42
17	Westscheme Super.	Australia	1.0	39
18	Alumina Limited	Australia	0.7	28
19	Statewide Super	Australia	0.4	17
20	Mitsubishi	Japan	0.3	11
21	BHP Billiton	Australia/UK	0.2	8
22	YKK	Japan	0.2	7
23	Marubeni	Japan	0.2	6
24	Sumitomo	Japan	0.2	6
25	Sojitz	Japan	0.0	1
26	Itochu	Japan	0.0	0.5
Total			100	3,879

The largest recipients of ESAS assistance are estimated to be International Power Plc with \$1,152m over five years, CLP Power International with \$738m, the NSW government with \$396m, and AGL Energy and Tokyo Electric Power with \$220m apiece.

² As a concrete example of this methodology, this attributes assistance to owners in proportion to their shareholding in each generator – in the case of Hazelwood this means 92% is attributed to International Power Plc and 8% to Commonwealth Bank.

ABOUT INNOVEST

Innovest Strategic Value Advisors was founded in 1995 with the mission of integrating sustainability and finance by identifying non-traditional sources of risk and value potential for investors. Our analysis is designed to assist our clients in constructing and managing portfolios that out-perform the market. We do this by tracking company performance and strategic positioning on over 120 factors that are not captured or explained by the traditional, accounting-driven securities analysis. **To learn more about Innovest please see the contact information listed below, or visit us online at www.innovestgroup.com. We look forward to assisting you.**

New York

Mr. Peter Wilkes
Managing Director
+1 212 421 2000 ext. 216
pwilkes@innovestgroup.com

Paris

Mrs. Perrine Dutronc
Managing Director
+33 (0)1 44 54 04 89
pdutronc@innovestgroup.com

Toronto

Ms. Michelle J. McCulloch
Director, Corporate Development
+1 905 707 0876 ext. 240
mjmculloch@innovestgroup.com

London

Mr. Andy White
Managing Director
+44 (0) 20 7073 0469
awhite@innovestgroup.com

San Francisco

Mr. Pierre Trevet
Managing Director
+1 415 332 3506
ptrevet@innovestgroup.com

Sydney

Mr. Bill Hartnett
Managing Director
+61 2 9940 2688
bhartnett@innovestgroup.com

Tokyo

Mr. Hiromichi Soma
Director
+81 3 5976 8337
hsoma@innovestgroup.com

**Innovest Uncovering Hidden
Value for Strategic Investors**

www.innovestgroup.com