Report to

Federal Treasury

Detailed Results of the Modelling of the Impacts of Emissions Trading on the Electricity Markets

December 2008



Ref: J1565 Detailed Results V2

Project Team

Walter Gerardi

Alison Demaria

Melbourne Office

242 Ferrars Street South Melbourne Vic 3205

Tel: +61 3 9699 3977 Fax: +61 3 9690 9881

Email: mma@mmassociates.com.au
Website: www.mmassociates.com.au

Brisbane Office

GPO Box 2421 Brisbane Qld 4001 Tel: +61 7 3100 8064

Fax: +61 7 3100 8064

Canberra Office

5 Patey Street Campbell ACT 2612 Tel: +61 2 6257 5423 Fax: +61 2 6257 5423

> ACN: 004 765 235 ABN: 33 579 847 254

AMENDMENTS

In this version of the detailed results report, corrections have been made as follows:

- Queensland gas capacity added to Figure 2.4
- Wind capacity converted from firm to non-firm (total) capacity in Figure 2.6.
- Changes to brown coal generation and capacity added to charts showing changes to generation and capacity relative to the reference scenario.
- Double counting of Gas CCS removed from charts showing changes to generation and capacity relative to the reference scenario.
- Explanatory footnote added on page 1.

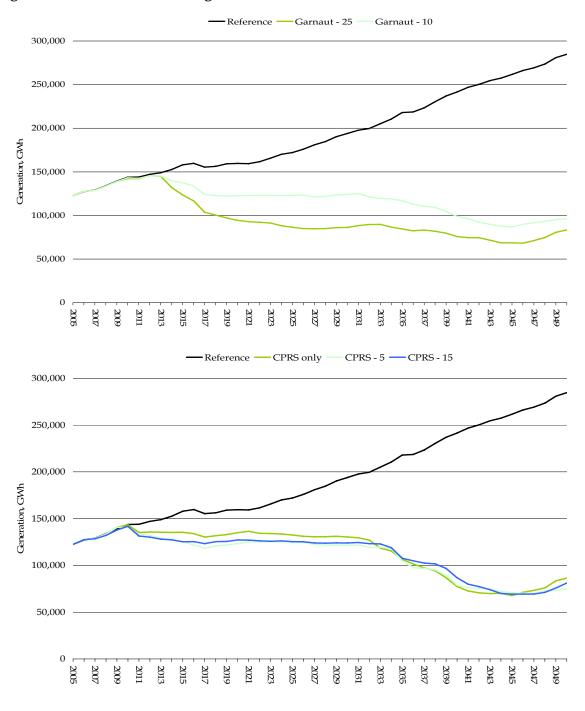
TABLE OF CONTENTS

1	COMPARISON OF KEY RESULTS ACROSS ALL SCENARIOS		1
	1.1	Generation	1
	1.2	Capacity	5
2	REFERENCE SCENARIO RESULTS		6
	2.1	Generation	6
	2.2	Capacity	7
3	GARNAUT -10 SCENARIO RESULTS		
	3.1	Generation	9
	3.2	Capacity	11
4	GARNAUT -25 SCENARIO RESULTS		14
	4.1	Generation	14
	4.2	Capacity	16
5	CPRS ONLY SCENARIO RESULTS		19
	5.1	Generation	19
	5.2	Capacity	21
6	CPRS -5 SCENARIO RESULTS		24
	6.1	Generation	24
	6.2	Capacity	26
7	CPRS -15 SCENARIO RESULTS		29
	7.1	Generation	29
	7.2	Capacity	31

1 COMPARISON OF KEY RESULTS ACROSS ALL SCENARIOS

1.1 Generation¹

Figure 1-1: National black coal generation, GWh



Please note: in this report, generation includes generation from the minor girds, embedded generation and remote power supplies as well as generation from the major grids (NEM, SWIS and DKIS). Capacity values refer only to capacity from the major grids (that is, it excludes capacity from the minor grids, remote power supplies and embedded generation, which mainly comprises gas and liquid fired capacity).

-

Figure 1-2: National brown coal generation, GWh

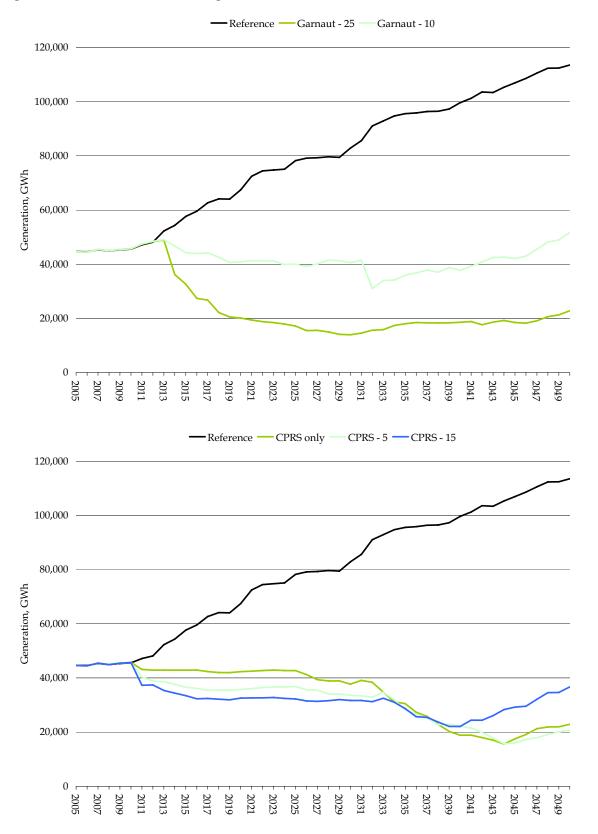


Figure 1-3: National gas generation, GWh

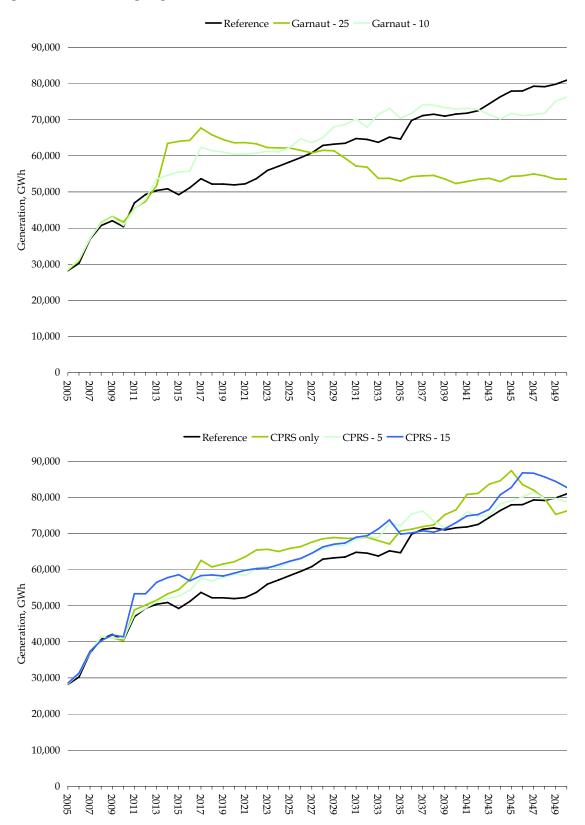


Figure 1-4: National renewable generation, GWh

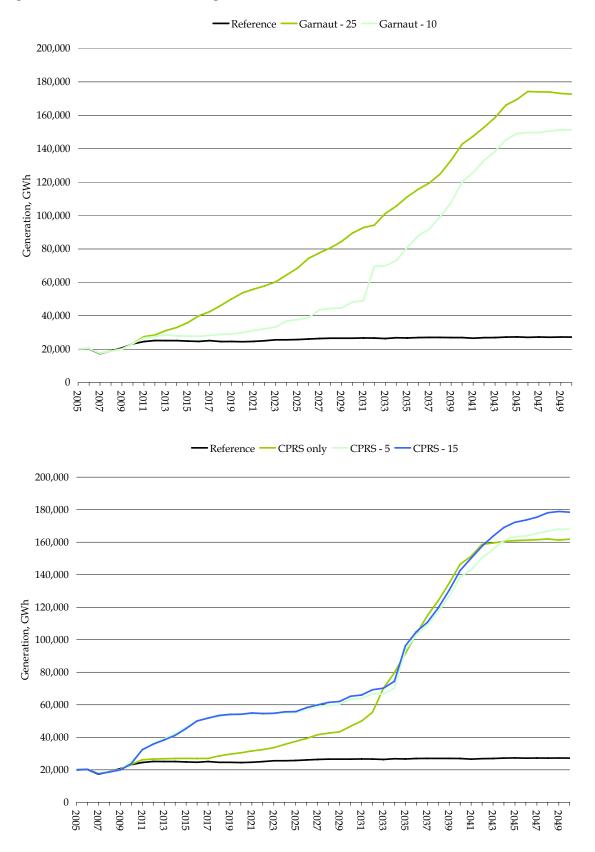


Figure 1-5: National capacity mix by technology, 2020

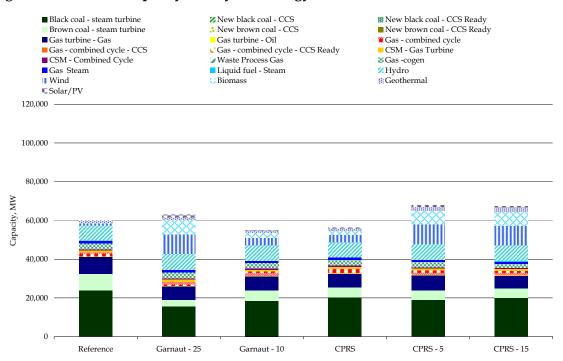
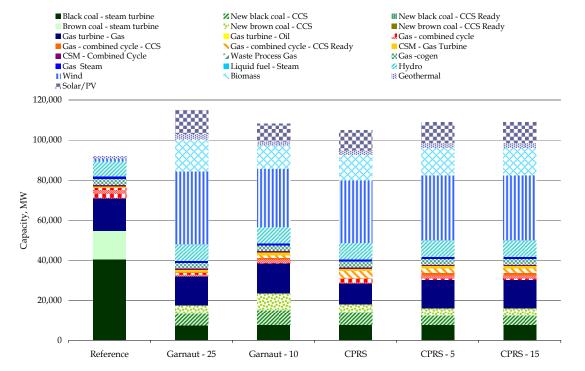


Figure 1-6: National capacity mix by technology, 2050



2 REFERENCE SCENARIO RESULTS

Figure 2-1: Coal generation, Reference case

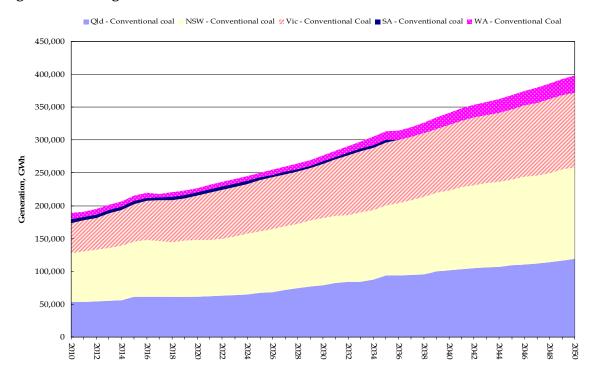


Figure 2-2: Natural gas generation, Reference Case

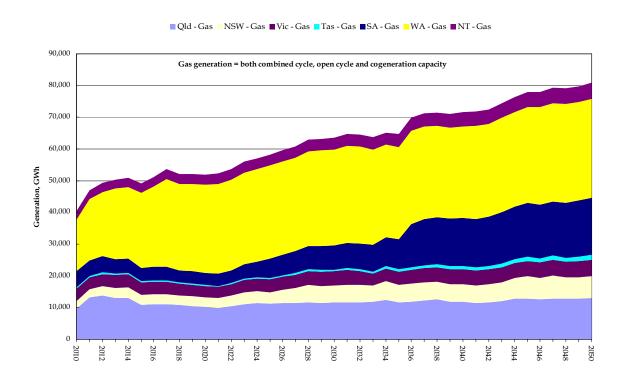


Figure 2-3: Renewable generation, Reference Case

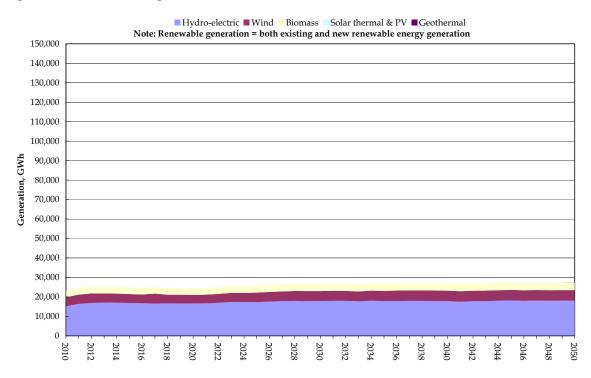


Figure 2-4: Coal capacity, Reference Case

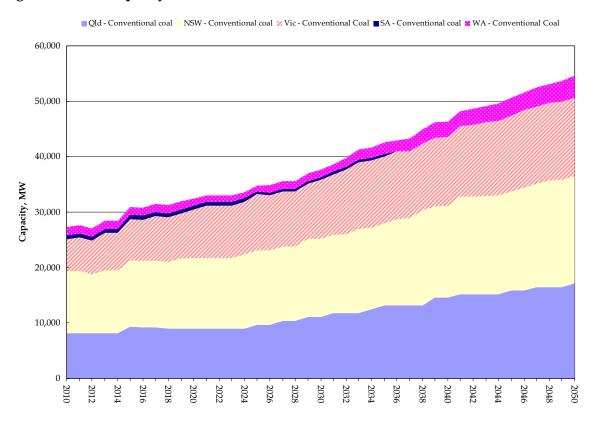


Figure 2-5: Natural gas capacity, Reference Case

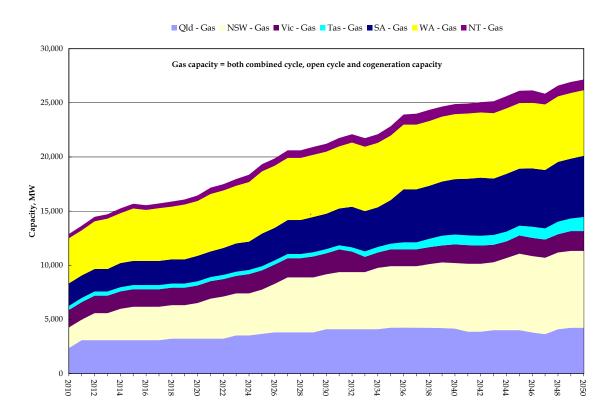
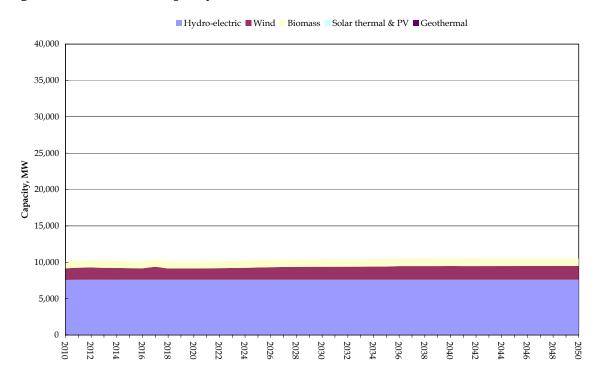


Figure 2-6: Renewable capacity, Reference Case



3 GARNAUT -10 SCENARIO RESULTS

Figure 3-1: Coal generation, Garnaut -10

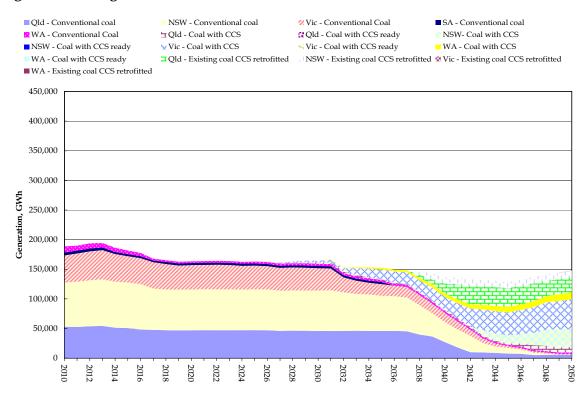


Figure 3-2: Natural gas generation, Garnaut -10

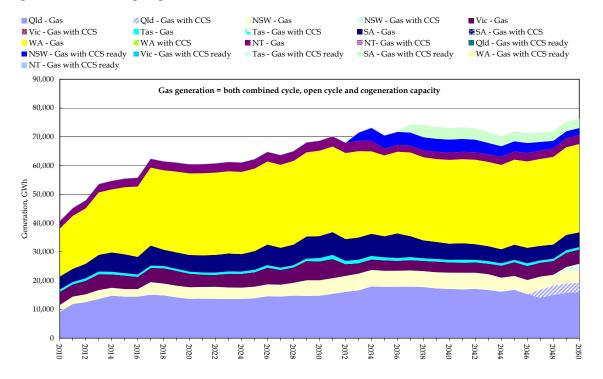


Figure 3-3: Renewable generation, Garnaut -10

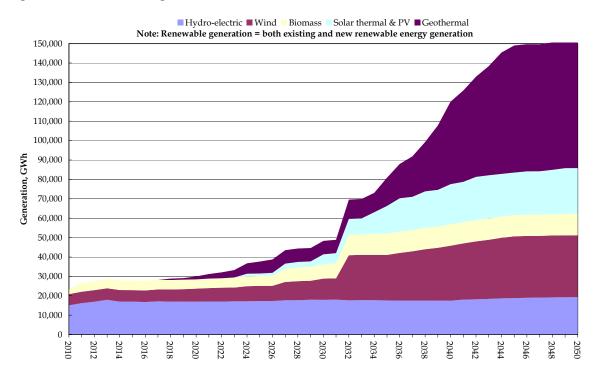


Figure 3-4: Change in generation relative to Reference case, Garnaut -10

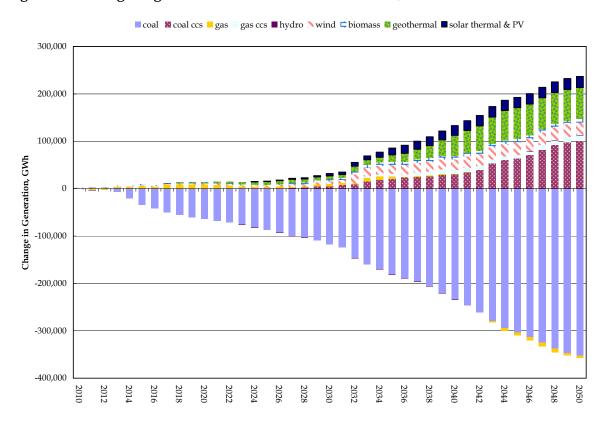


Figure 3-5: Reduction in coal generation, GWh - Garnaut -10

-300,000

Figure 3-6: Coal capacity, Garnaut -10

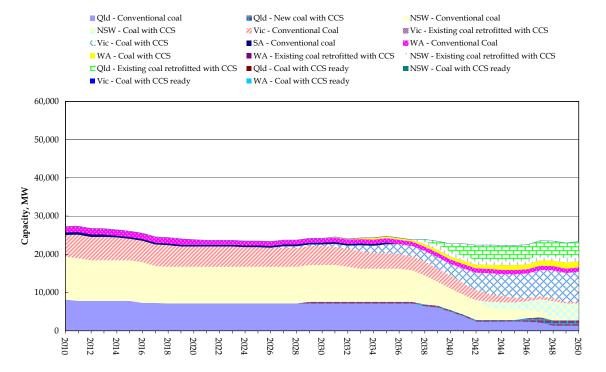


Figure 3-7: Natural gas capacity, Garnaut -10

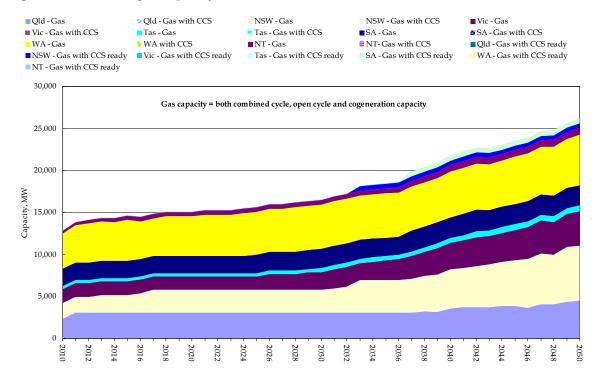


Figure 3-8: Renewable capacity, Garnaut -10

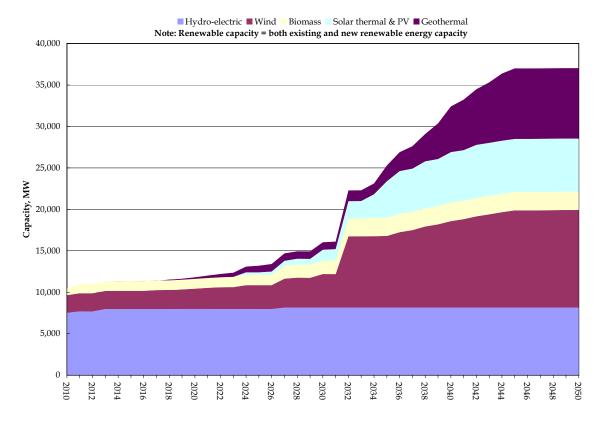
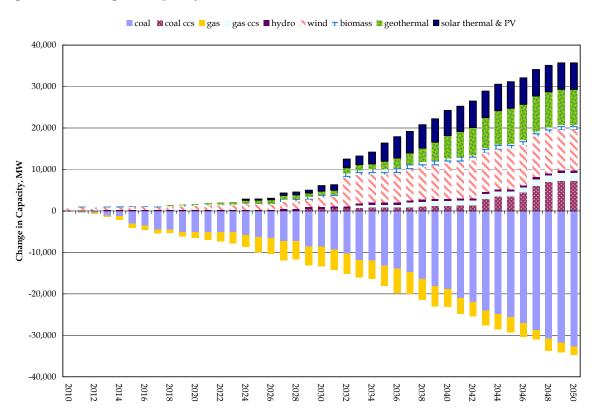


Figure 3-9: Change in capacity relative to Reference case, Garnaut -10



4 GARNAUT -25 SCENARIO RESULTS

Figure 4-1: Coal generation, Garnaut -25

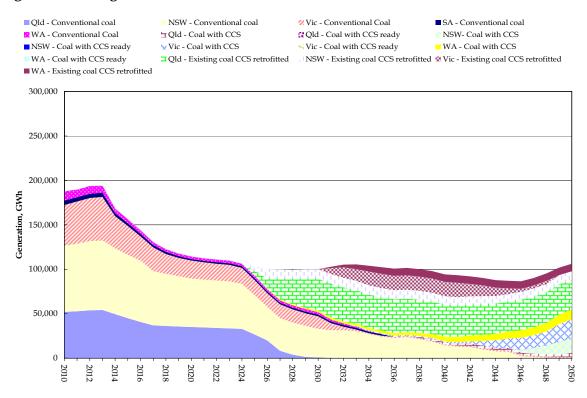


Figure 4-2: Natural gas generation, Garnaut -25

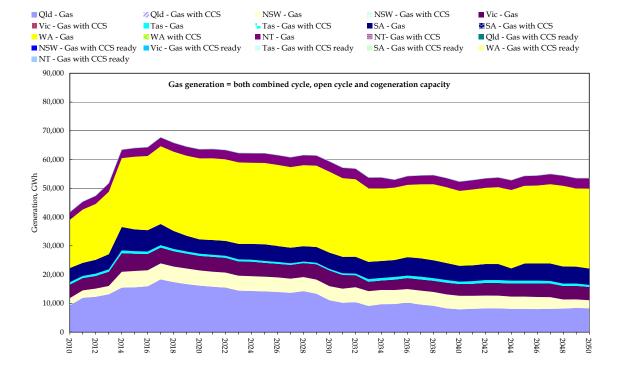


Figure 4-3: Renewable generation, Garnaut -25

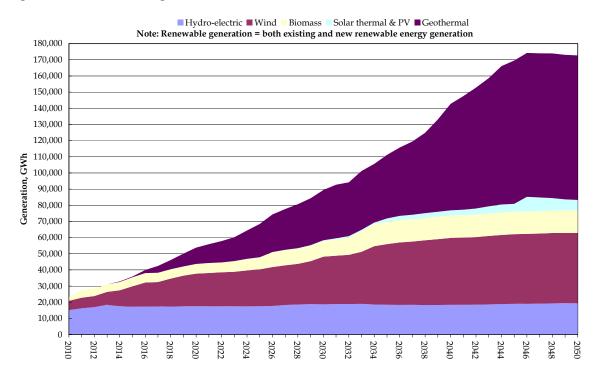


Figure 4-4: Change in coal generation by state, Garnaut -25

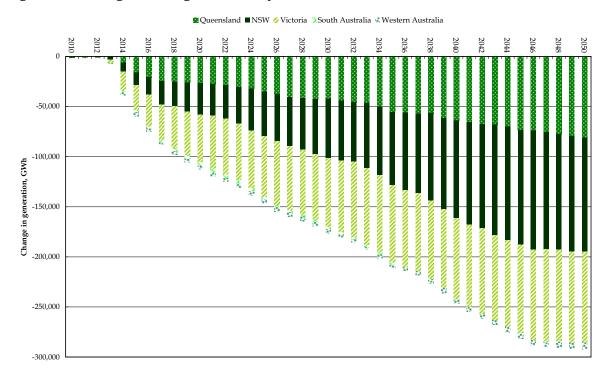


Figure 4-5: Change in generation relative to Reference case, Garnaut -25

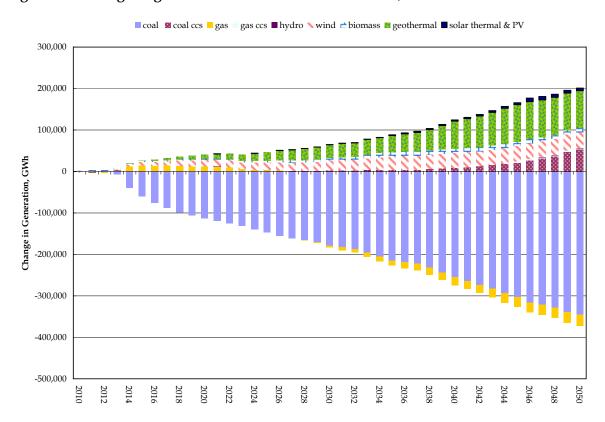


Figure 4-6: Coal capacity, Garnaut -25

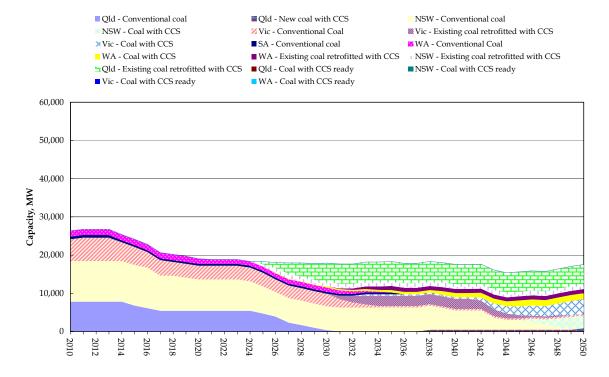


Figure 4-7: Natural gas capacity, Garnaut -25

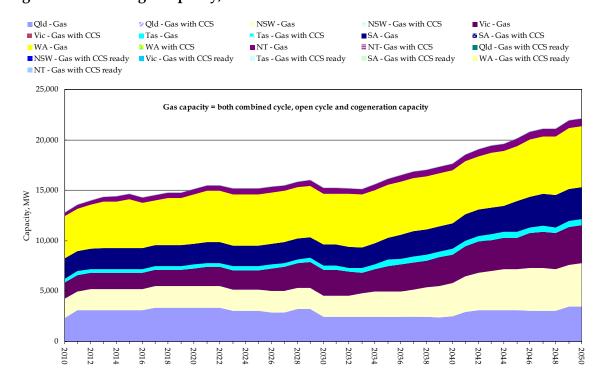


Figure 4-8: Renewable capacity, Garnaut -25

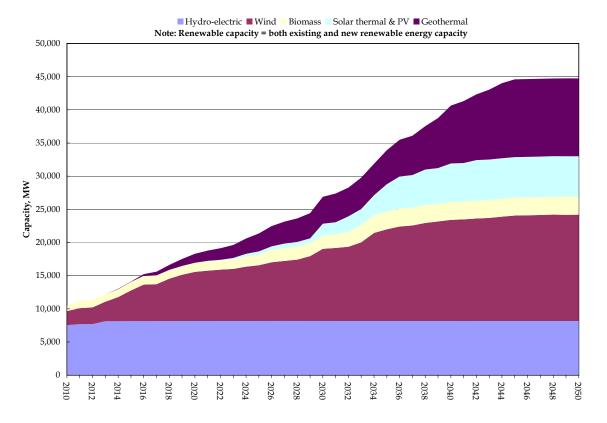
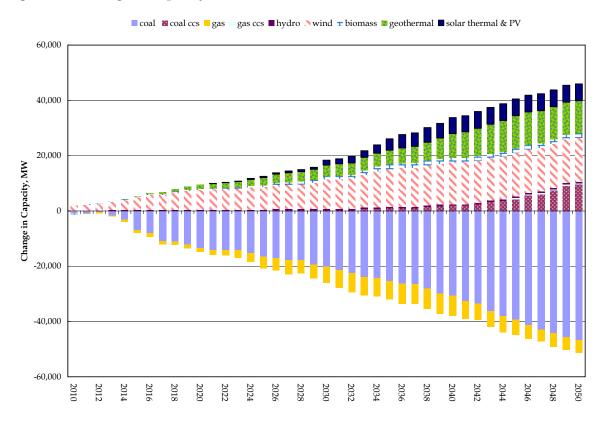


Figure 4-9: Change in capacity relative to Reference case, Garnaut -25



5 CPRS ONLY SCENARIO RESULTS

Figure 5-1: Coal generation, CPRS Only

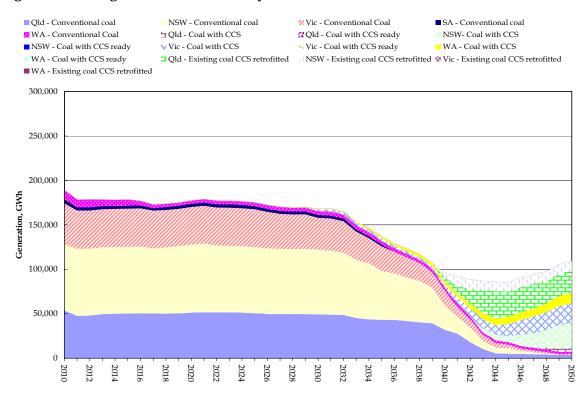


Figure 5-2: Natural gas generation, CPRS Only

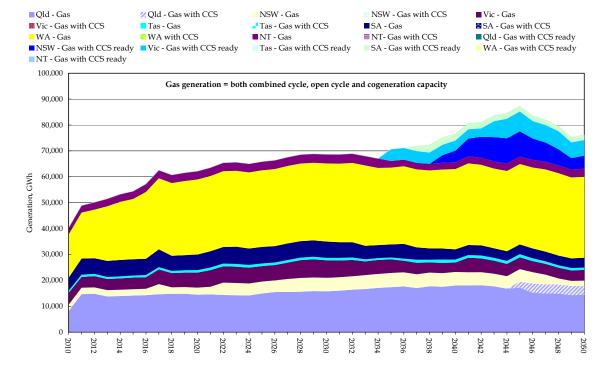


Figure 5-3: Renewable generation, CPRS Only

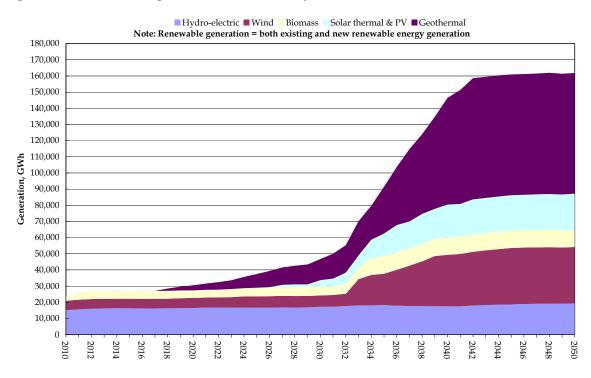


Figure 5-4: Change in generation relative to Reference case, CPRS Only

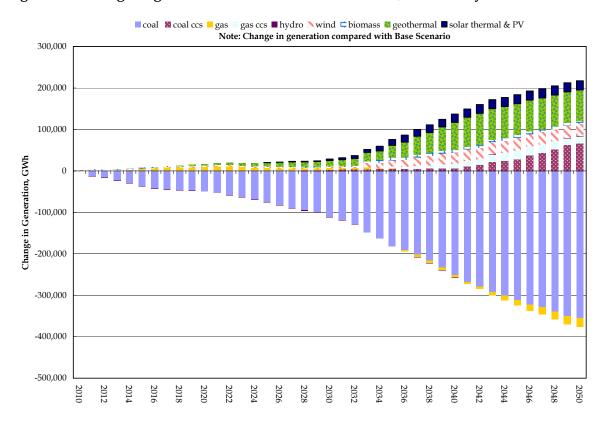


Figure 5-5: Change in coal generation by state, CPRS only

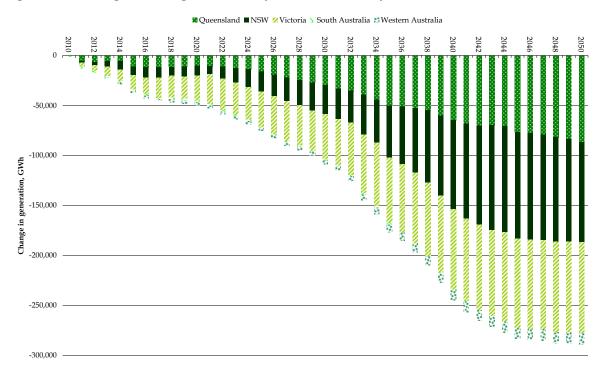


Figure 5-6: Coal capacity, CPRS Only

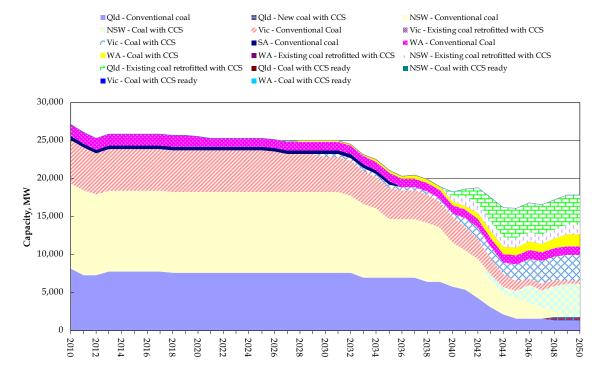


Figure 5-7: Natural gas capacity, CPRS Only

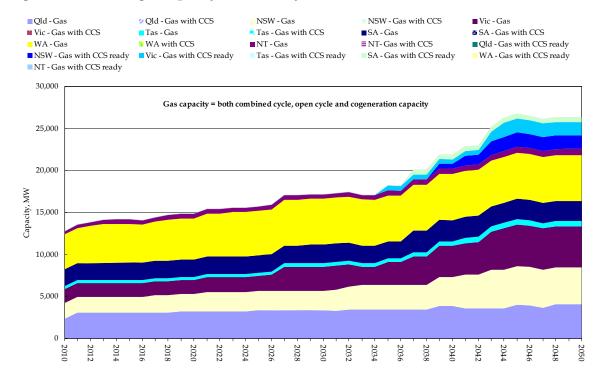


Figure 5-8: Renewable capacity, CPRS Only

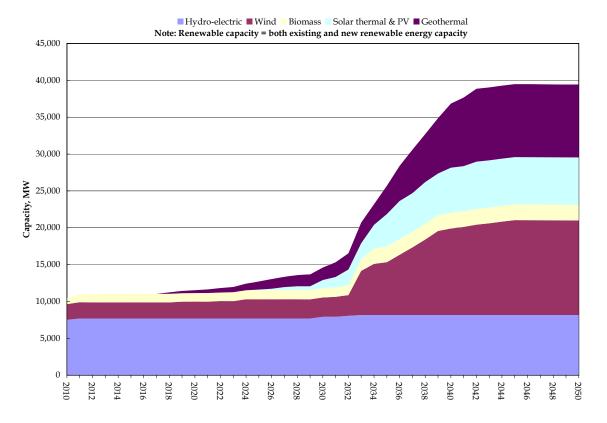
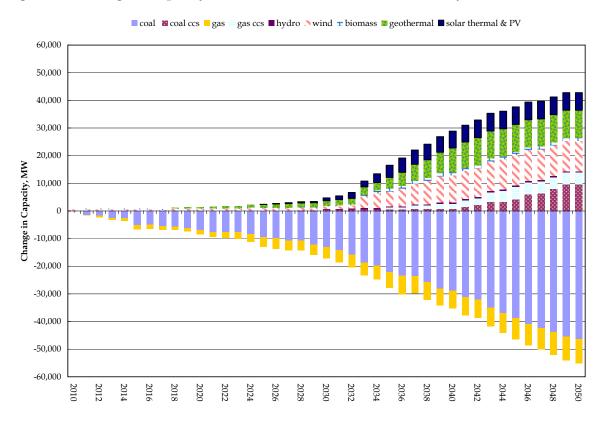


Figure 5-9: Change in capacity relative to Reference case, CPRS Only



6 CPRS -5 SCENARIO RESULTS

Figure 6-1: Coal generation, CPRS -5

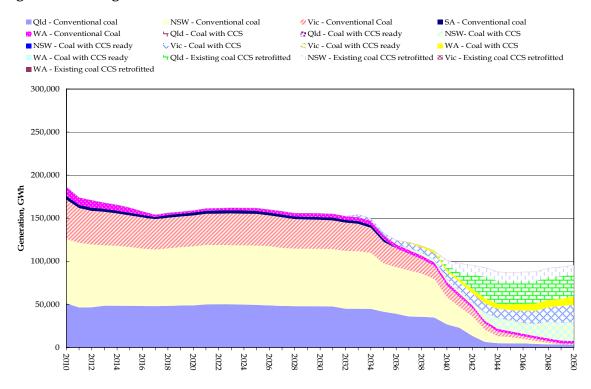


Figure 6-2: Natural gas generation, CPRS -5

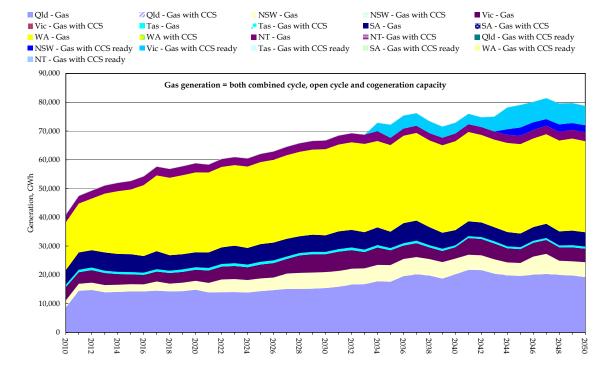


Figure 6-3: Renewable generation, CPRS -5

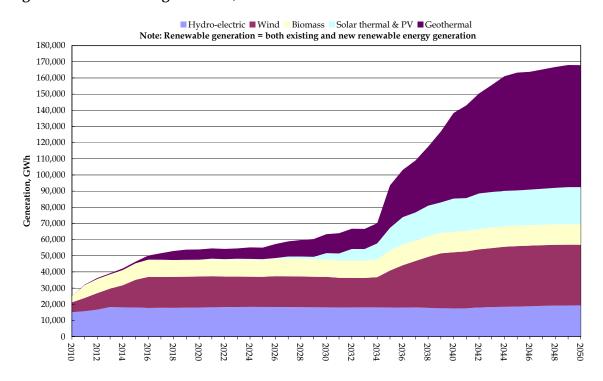


Figure 6-4: Change in generation relative to Reference case, CPRS -5

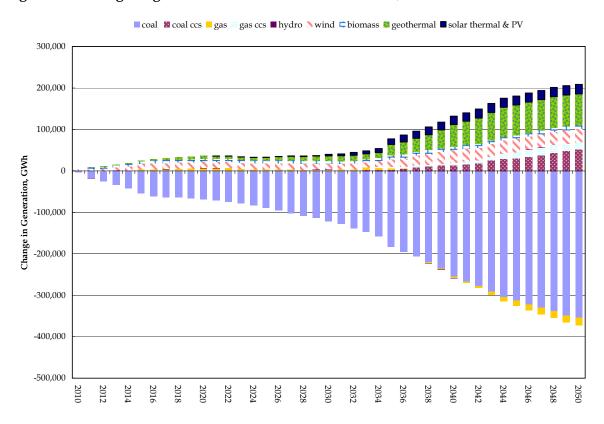


Figure 6-5: Change in coal generation by state, CPRS -5

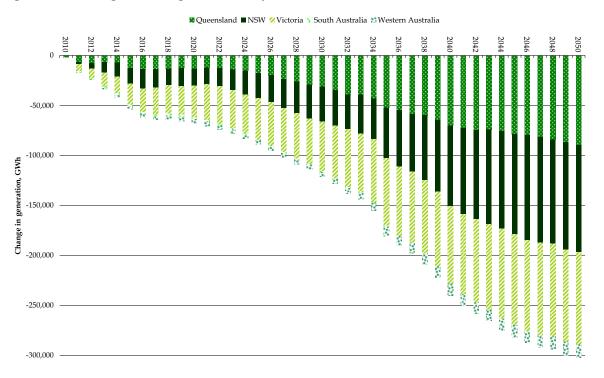


Figure 6-6: Coal capacity, CPRS -5

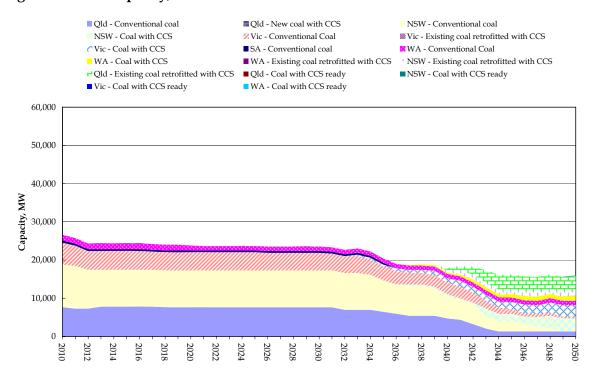


Figure 6-7: Natural gas capacity, CPRS -5

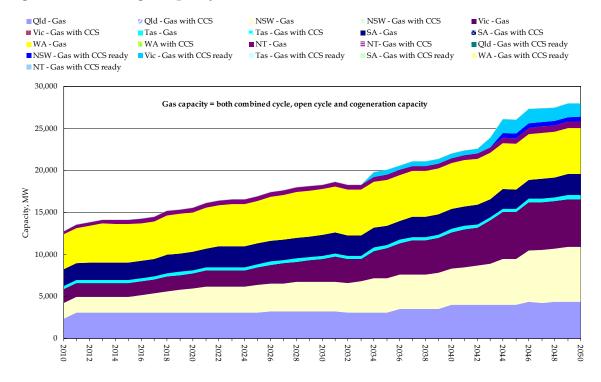


Figure 6-8: Renewable capacity, CPRS -5

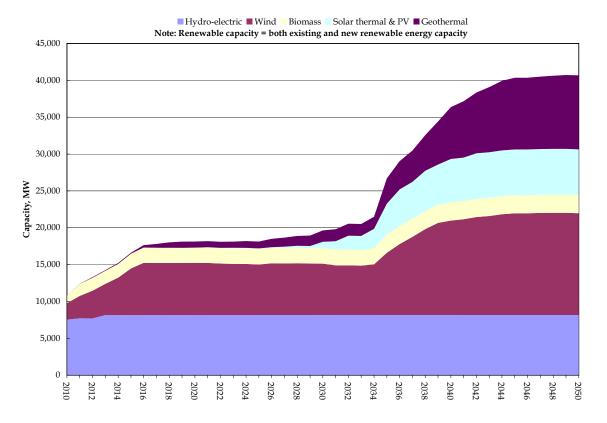
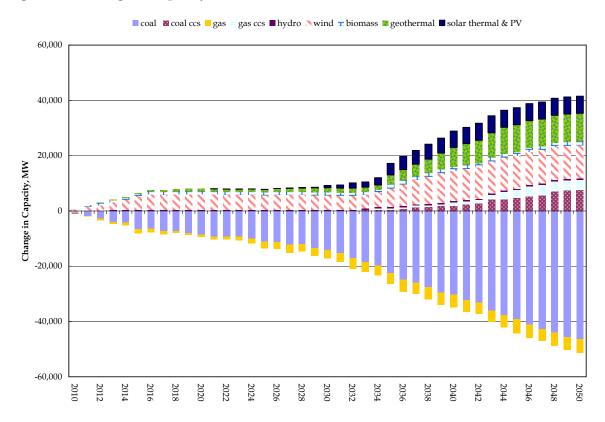


Figure 6-9: Change in capacity relative to Reference case, CPRS -5



7 CPRS -15 SCENARIO RESULTS

Figure 7-1: Coal generation, CPRS -15

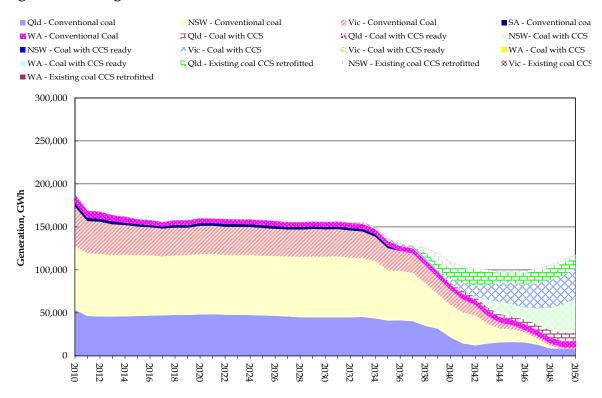


Figure 7-2: Natural gas generation, CPRS -15

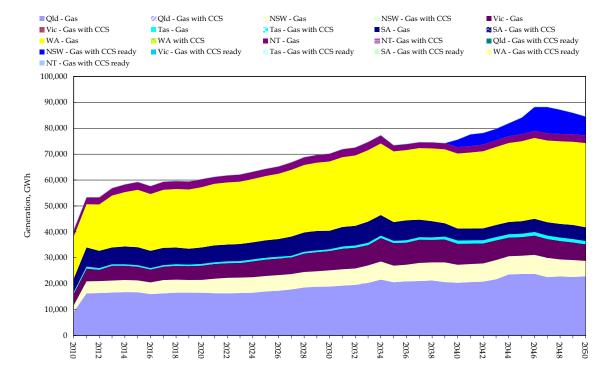


Figure 7-3: Renewable generation, CPRS -15

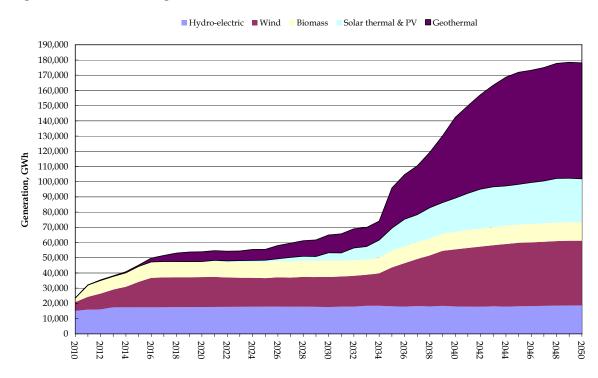


Figure 7-4: Change in generation relative to Reference case, CPRS -15

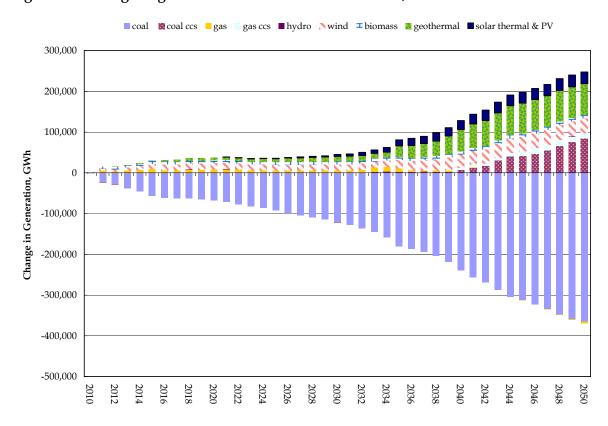


Figure 7-5: Change in coal generation by state, CPRS -15

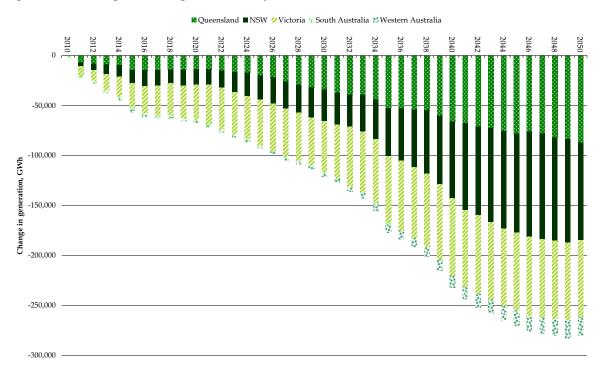


Figure 7-6: Coal capacity, CPRS -15

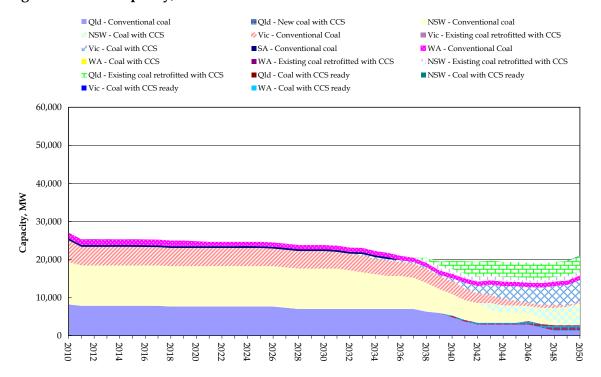


Figure 7-7: Natural gas capacity, CPRS -15

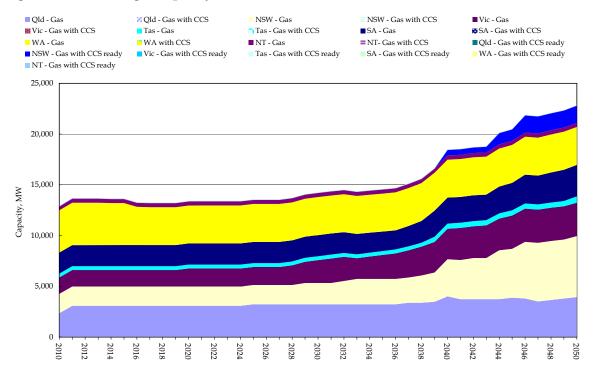


Figure 7-8: Renewable capacity, CPRS -15

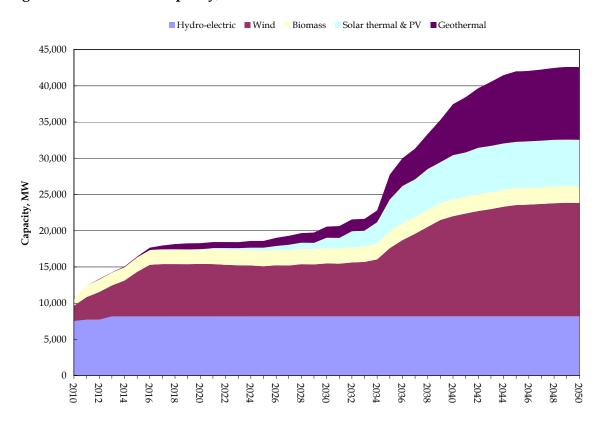


Figure 7-9: Change in capacity relative to Reference case, CPRS -15

