

APPENDIX O: AUSTRALIAN EXPLORATION AND DEVELOPMENT PROJECTS BY BASIN

Basin	State	Company	Total cost	Project	Gas reserves (PJ)	Flow rate	Start date	End date	Status	Industry	Sub-industry
Bass	Tasmania		na	Trefoil Prospect	250						
Bass	Tasmania		na	Chappel Prospect	300						
Bass	Victoria/Tasmania	BassGas (Origin (58.86%) / Cultus (13%) / Galveston Mining (14%))	391	Yolla gas field, Bass Strait White Ibis	485-645	20 PJpa	Seeking markets in Vic & Tas. Possible development by late 2002	2004	Under consideration	Mining	Gas
Bonaparte	Northern Territory	Petroz (8.25%) / Inpex (11.71%) / Santos (11.83%) / Phillips (operator) (50.29%) / Onyx/Kerr McGee (11.2%) / British Borneo (6.72%)	2615	Bayu-Undan oil / gas field, Timor Gap, Stage 1. Liquids stripping operation (70,000 bd concentrate, 43,000 bd LPG)	3660		1 st qtr 2001	1 st qtr 2004	Under construction	Mining	Oil & Gas extraction
Bonaparte	Northern Territory	Shell Australia (25%) / Woodside (66.7%) / BHP (8.3%)	8000	North Australian Gas Venture (NAGV). LNG plant near Darwin (7.5 mtpa), using reserves from Evan, Loxton, Sunrise & Troubador Shoal fields. Additional to domestic gas costs			Feasibility study complete. Development start pushed back given changed demand for LNG. Seeking domestic contracts		Possible	Mining	Gas

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Bonaparte	Northern Territory	Petroz (8.25%) Inpex (11.71%) Santos (11.83%) Phillips (operator) (50.29%) Onyx/Kerr McGee (11.2%) British Borneo (6.72%)	1667	Bayu-Undan gas field, Stage 3. LNG plant onshore for export			After Stage 1 liquid stripping completed and Stage 2 domestic gas leg. Needs contract for start up 2005-2008		Possible	Mining	Gas
Bonaparte	Northern Territory	Shell Australia (25%) / Woodside (66.7%) / BHP (8.3%)	2500	North Australian Gas Venture (NAGV). Sunrise & Troubador onshore and offshore processing facilities and pipeline for domestic gas delivery. LNG cost additional	9900		Feasibility study complete. To be built ahead of LNG plant. Project granted MPF status. Final decision expected late 2001		Under consideration	Mining	Oil & Gas extraction
Bonaparte	Northern Territory	Timor Sea Petroleum (15%) / Shell Development Aust	na	Evans Shoal gas field development	7100		JV formed. Feasibility study underway		Possible	Mining	Gas
Bonaparte	Northern Territory	Nippon Oil Exploration (Vulcan)	na	Gas field development (10,000 bd), Timor Sea (AC/P23 mining area)			Proving reserves. Decision expected end 2001		Possible	Mining	Gas
Bowen	Queensland	Oil Company of Australia (Boral 84.96% / Santos 12.45%)	40	Coal seam methane operations, Bowen Basin (Dawson Valley)			Following purchase from Conoco		Under consideration	Mining	Gas
Bowen	Western Australia	Woodside (50%) / BP / Chevron / BHP	na	Two LNG trains, Brecknock & Scott Reef gas field			Proposed by Woodside as an alternative to Gorgon field		Possible	Mining	Gas
Bowen/Surat	New South Wales	Sydney Gas Company	5	Methane gas extraction from coal seams, Camden. Pilot project			Gas sale contracts secured. Awaiting final approvals		Under consideration	Mining	Gas

Basin	State	Company	Total cost	Project	Gas reserves (PJ)	Flow rate	Start date	End date	Status	Industry	Sub-industry
Bowen/Surat	Queensland	Oil Company of Australia	40	Coal seam methane gas, Peat field near Wandoan			Mid 2000	Jan-01	Under construction	Mining	Gas
Bowen/Surat	Queensland	Transfield Energy / Tri-Star	1,000	Coal seam methane project			JV in legal dispute. Project unlikely to proceed		Possible	Mining	Gas
Bowen/Surat	Queensland	Santos	50	Scotia gas field development, near Roma			Proving reserves		Possible	Mining	Gas
Bowen/Surat	Queensland	Queensland Gas	na	Coal seam methane project, Surat Basin			Test drilling underway		Under consideration	Mining	Gas
Bowen/Surat	Queensland	Transfield Energy / Tri-Star	500	Coal seam methane project			Negotiations ongoing		Possible	Mining	Gas
Burrup Peninsula	Western Australia	Syntroleum Corp	500	Gas to synthetic oil plant, Burrup Peninsula (10,000 bd)			Feasibility underway, decision on location (Australia or Trinidad) expected mid-2000		Possible	Mining	Gas
Carnarvon	Queensland	Apache Energy / Tap Oil	40	Gipsy / Rose / Lee gas and condensate wells (15,000 bd), Varanus Island			3 rd qtr 2000	Mid 2001 (oil) & mid 2003 (gas)	Committed	Mining	Gas
Carnarvon	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI)	200	Echo / Yodel (36 mb) condensate and gas field			Approvals expected 3 rd qtr 2000 for commencement 2002		Under consideration	Mining	Gas
Carnarvon	Western Australia	Woodside Petroleum	200	Oil and some gas, Enfield (64 mb), Vincent (61 mb) & Laverda oil fields, Off-shore Carnarvon Basin			Feasibility study complete. Project sanction possible by 2002 and production by 2005		Under consideration	Mining	Oil & Gas extraction

Basin	State	Company	Total cost	Project	Gas reserves (PJ)	Flow rate	Start date	End date	Status	Industry	Sub-industry
Carnarvon	Western Australia	Wapet (Chevron (28.62%) / Texaco (28.62%) / Shell (28.62%) / Mobil (14.29%))	8000	Gorgon / Chrysaor / West Tyral Rocks LNG project for 8 mtpa (two liquefaction trains)	N/a				Possible	Mining	Gas
Gailee	Queensland	Galilee Energy	25	Coal seam methane project, Galilee Basin near Longreach					Under consideration	Mining	Gas
Gippsland	Victoria	Woodside Petroleum	na	Barker, Manta & Gummy oil and gas fields					Possible	Mining	Oil & Gas extraction
Gippsland	Victoria	BHP Petroleum (25%) / Esso (25%) / Woodside (30%) / Santos (20%)	600	Development of Kipper gas / condensate field (Vic/RL2) and new treatment plant, Orbost					Possible	Mining	Gas
Gippsland	Victoria	Santos / Magellan	na	Increase capacity of gas plant, Mereenie Joint Venture					Under consideration	Mining	Gas
Gippsland	Victoria	OMV Australia	na	Patricia / Baleen gas field, Bass Strait		12 PJpa	2002	2003/4	Under construction	Mining	Gas
NWS	Western Australia	BHP Petroleum (71.43%) / Mobil (28.57%)	300	Macedon / Pyrenees oil and gas field	1076-2152				Possible	Mining	Gas
NWS	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI)	2200	Expansion of North West Shelf LNG project (4.2 mtpa). Fourth train					Under consideration	Mining	Gas

expected 1st qtr 2001

Basin	State	Company	Total cost	Project	Gas reserves (PJ)	Flow rate	Start date	End date	Status	Industry	Sub-industry	
NWS	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI) (16.67% each)	500	Domgas debottlenecking and second trunkline installation prospect					Linked to liquid expansion project	Possible	Mining	Oil & Gas extraction
NWS	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI) (16.67% each)	650	Liquids Expansion Project. Expansion of hydrocarbon liquids production capacity at onshore gas treatment plant					Decision to commit deferred	Under consideration	Mining	Gas
NWS	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI)	100	North West Shelf project sixth onshore stabiliser					Study underway to boost condensate production	Under consideration	Mining	Gas
NWS	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI)	3000	Expansion of North West Shelf LNG project (4 mtpa). Fifth train					Construction may be justified by 2007	Possible	Mining	Gas
NWS	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI)	190	Refurbishment of Cossack Pioneer FPSO			1999	Early 2000		Under construction	Mining	Gas
Otway	Victoria	BHP Petroleum (90%) / Phillips (10%)	160	Minerva gas field including onshore processing plant and pipeline system	430	45 PJpa			Construction may start 2002-3 if SA pipeline proceeds.	Likely	Mining	Gas
Otway	Victoria	Cultus (33% share) / Santos Exploration	na	Vic/RL1 gas field, Golden Beach, Otway Basin					Feasibility study complete	Under consideration	Mining	Gas

Basin	State	Company	Total cost	Project	Gas reserves (PJ)	Flow rate	Start date	End date	Status	Industry	Sub-industry
Otway	Victoria	Woodside/OE	na	Thlyacine	650-2000						
Otway	Victoria	Woodside/OE	na	Geographe	500-1000						
Otway	Victoria	Santos	na	Heytsbury	small				In Production		
Otway	Victoria	Santos	na	Mylor & Fenton Creek	small				In Production		
Otway	Victoria	Santos	na	Wallaby Creek	small				In Production		
Otway	Victoria	Santos	na	McIntee 1	small				Pending		
Otway	Victoria	Santos	na	Tregony 1	small				Pending		
Otway	South Australia	Lakes Oil	10	Crayfish well, Troas gas field	470		Seeking JV partner for trial drilling program		Possible	Mining	Oil & Gas extraction
	Western Australia	Novus Petroleum	350	Maitland gas and condensate field			Further evaluations to be undertaken		Possible	Mining	Gas
	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI)	150	Wilcox condensate and gas field			Long term prospect		Possible	Mining	Gas
	Western Australia	North West Shelf Consortium (Woodside / BP / Shell / BHP / Chevron / MIMI)	150	Goodwyn South / Tidepole / Dockrell condensate and gas field			Long term prospect		Possible	Mining	Gas
	Western Australia	Amity Oil	na	Weaber gas field near Kununurra	11.0-16.0		Feasibility study underway		Under consideration	Mining	Gas
	Western Australia	Amity Oil	70	Waggon Creek (Whicher Range) onshore gas prospect	N/A		Negotiating sales contracts		Under Consideration	Mining	Gas
	Western Australia	BHP Petroleum / Esso	5,000	Scarborough LNG project			Further evaluation work underway		Possible	Mining	Gas
	Western Australia	Tap Oil (10%) / Hardy Petroleum (30%) / Mobil (20%) / PanCanadian	100	Woollybutt oil / gas field (17 mb at 20-40,000 bd)			Decision expected 2001		Under consideration	Mining	Oil & Gas extraction

Basin	State	Company	Total cost	Project	Gas reserves (PJ)	Flow rate	Start date	End date	Status	Industry	Sub-industry
	Western Australia	(40%) Empire Oil & Gas / CalEnergy	14	Giigin Gas Field	540		Test drilling underway		Under consideration	Mining	Gas
	Western Australia	Apache Energy / Tap Oil	30	Bambra oil / gas field			Negotiating JV details		Under consideration	Mining	Oil & Gas extraction
	South Australia	Santos (59.75%) / Delhi (20.21%) / Boral (13.19%) / Gulf Australia (4.75%) / Basin Oil (2.1%)	100	Development of low permeability gas, Nappaerri Trough			In planning		Possible	Mining	Gas
	Queensland	Santos	na	Barrolka gas field	20		Feasibility study underway. Seeking supply contracts		Under consideration	Mining	Gas

Source: NIEIR research, Oil and Gas magazine.

APPENDIX P: AUSTRALIAN PIPELINE DEVELOPMENTS, EXISTING AND PROPOSED

Company	Total cost	Project	Dimensions	Start date	End date	Status	State
AGL	96	Central Ranges gas pipeline to Tamworth		Approved subject to baseload customers being secured		Under consideration	New South Wales
NSW Dept of Public Works	110	Gas pipeline Dubbo - Tamworth	303km	Seeking approvals for 2001 start of 12 month project		Under consideration	New South Wales
Energy Equity	5	Gas pipeline, Dingo gasfield - Alice Springs		Feasibility study underway		Under consideration	Northern Territory
EGP	na	Longford to Sydney	50PJpa 760km			Operational	
Epic Energy / Phillips Petroleum	750	Gas pipeline from Bayu-Undan oil / gas field, Timor Gap, to Darwin, Stage 2		Final decision expected mid 2001 for late 2002 start		Under consideration	Northern Territory
Epic Energy / Phillips Petroleum	600	Pipeline from Darwin - Moomba to link up with Bayu-Undan pipeline	2800km	EIS underway. Preliminary route survey complete. MPF status granted. Planned 18 month project		Under consideration	Northern Territory
Energex Energy	33	Gas pipeline, Gatton - Gympie		Awaiting Native Title resolution		Under consideration	Queensland
AGL	Na	Murarie (Brisbane) to Beerburum East gas pipeline project		Application lodged		Under consideration	Queensland
Duke Energy	150	Second gas pipeline from north of Injune (Roma) to Brisbane		Feasibility study underway		Under consideration	Queensland
Chevron (20%) / Amadeus Petroleum (20%) / Mobil (10%) / Orogen (15.8%) / Petroleum Resources (10%) / Mitsubishi (10%)	2460	Australian section of gas pipeline from Kopi (PNG) to Gladstone (dry section)	300PJpa	Negotiations ongoing		Under consideration	Queensland
Transfield Energy / Tri-Star	12	Gas pipeline from coal seam methane fields near Roma to Wallumbilla, Stage 2	90km	Feasibility study complete. EIS before State Govt		Under consideration	Queensland
Transfield Energy / Tri-Star	224	Gas pipeline from coal seam methane fields near Roma to Yabulu – Stage 3	675km	Impact assessment study underway		Possible	Queensland

Company	Total cost	Project	Dimensions	Start date	End date	Status	State
Duke Energy	125	Wallumbilla – Brisbane gas pipeline	31 PJpa	Development study ongoing		Possible	Queensland
AGL	200	Gas pipeline, Gladstone – Townsville (part of the delivery system for gas from proposed PNG-Qld pipeline)		Plan announced. Seeking supplier commitments. Possible State Govt contribution 00/01 budget		Possible	Queensland
AGL	50	Gas pipeline to connect Scotia gas field to SE Queensland network		Early 2001	Jul-02	Under construction	Queensland
Duke Energy	380	Gas pipeline across Bass Strait, Longford (Vic) – Bell Bay (Tas)	305 km 300 mm	Nov-01	Jun-02	Committed	Tasmania
Duke Energy	150	Gas pipeline, Bell Bay – Port Latta & Hobart (feeding from Longford – Bell Bay pipeline)		Late 2001	Mid 2002	Committed	Tasmania
SA Pipelines Authority	300	Gas pipeline between Palm Valley (NT) and Whyalla (SA)	45 PJpa	Palm Valley reserves being reassessed		Possible	Unallocated
Duke Energy / GasNet	250	Gas pipeline linking Vic & SA (include. Bass Strait & Otway Basin)	45 PJpa 630 km			Possible	Unallocated
Australian Pipeline Trust	2400	Eastern states gas pipeline network		Plans announced. Pre-feasibility complete		Possible	Unallocated
Origin Energy / Australian National Power	200	Gas pipeline, Port Campbell – Adelaide SEA Gas Project	630 km	JV formed. Route planning underway	2004	Possible	Unallocated
AGL	300	Upgrade gas pipeline, Melbourne – NSW		Suggested to Vic & NSW Govts by AGL		Possible	Victoria
Envestra	na	Berri to Mildura				Commenced Operating	
BHP Petroleum / Esso	200	Gas pipeline, 'Bream A' gas field – Gippsland	51 km	Planning stage		Possible	Victoria

Company	Total cost	Project	Dimensions	Start date	End date	Status	State
GasNet	Na	Brooklyn to Lara 500 mm. Corio loop (extension of the South West pipeline from Port Campbell		Committed. Timing depends on demand. Possibly 2003 to 2008		Pending	Victoria
AGL / Western Power	Na	Mid-West natural gas transmission line to service Murchison area, Stage 2. Extension to Meekatharra		No commitment so far		Under consideration	Western Australia
Anaconda Nickel / StateWest Power	100	Extension of Mid-West pipeline through to Goldfields Gas Pipeline, Murrin Murrin		Successful tenderer announced		Under consideration	Western Australia
CMS Energy / Texaco Australia	600	Industrial gas pipeline, Onslow - Geraldton		Six month feasibility study to be conducted		Under consideration	Western Australia
Epic Energy	74	Extension of Dampier - Bunbury gas pipeline to south-west of WA	55PJpa	Feasibility study complete. Seeking State Govt funding assistance		Under consideration	Western Australia
WMC Ltd	85	Pilbara - Goldfields gas pipeline		Feasibility study underway		Possible	Western Australia
Anaconda Nickel / Statewest Power	200	Gas pipeline, Geraldton - Mt Margaret		DA approved. To be constructed simultaneously with Mt Margaret nickel / cobalt project		Under consideration	Western Australia
WA Dept of Resource Development	60	Gas pipeline, Bunbury - Manjimip - Albany		State Govt defining route to be followed by calls for expressions of interest		Possible	Western Australia

Sources: 1. NIEIR research, Oil and Gas magazine, Pipeline magazine.
2. Access Investment Monitor.

APPENDIX Q: VICTORIAN POWER GENERATION

Peak electricity demand is growing at around 2% p.a. as shown in Table Q.1 driven by the air-conditioning load. Current growth rates require a new 500 MW unit or equivalent almost every 2 years

The planning criteria require capacity to exceed the 1 in 10 demand level by a security reserve of 500 MW.

The growth will be met by gas peaker plants, new interconnects and interconnect upgrades as well as DSM measures.

Table Q.1 Forecast Electricity Demand

Electricity Peak Demand	1 in 2	1 in 10
MD 2001/02	8,269	8,833
MD 2002/03	8,424	9,076
MD 2003/04	8,613	9,355
MD 2004/05	8,808	9,658
MD 2005/06	8,978	9,929

Existing power generation, other than gas power generation supplied by the GTS, is shown in Table Q.2. Exports to S.A. to meet peak demand are assumed to continue in the medium term.

Table Q.2 Installed Capacity excl GTS Gas Power Generation

Generator/Source	MW	Aggregate MW
Anglesea	160	
EnergyBrix	170	330
Hazelwood	1,600	1,930
Loy Yang	3,000	4,930
Yallourn W	1,450	6,380
Southern Hydro	451	6,831
Hume (Vic) Hydro	29	6,860
Bairnsdale (Gas) Non GTS Load	31	6,891
Snowy/NSW	1,500	8,391
S.A (Export scenario)	-250	8,141

Existing and new gas power generation projects and proposals are shown in Table Q.3. The new gas peaker plants are necessary to meet the rapidly growing summer demand driven by the air-conditioning load.

In addition there are large cogeneration proposals such as Duke/Paperlinx at Maryvale (200 MW+) and Visy Paper at Coolaroo that might proceed in the medium term.

Projections of the Victorian Electricity 1 in 10 Load Duration Curves are shown in Figure Q.1 and illustrate the rapid growth. The peak demand under the top end of the curves is expected to be met by gas peaker plants. In addition, gas power generation is required to cover generator and interconnect outages as well as to meet contract arrangements.

Table Q.3 Existing and Proposed Gas Power Generators

Existing Gas Power Generators	MW	Status	
AES Jeeralang	435	In service	
AES Yarra (Newport)	500	In service	
New Gas Power Generator Projects	MW	Service Date	Status
Valley Power	300	Feb-02	Proceeding
Somerton (AGL)	150	Jan-02	Proceeding
Bairnsdale (Duke) Non GTS load	43	Feb-02	Proceeding
Golden Plains (AES) Stage 1	130	Possibly late 2002	Proposed

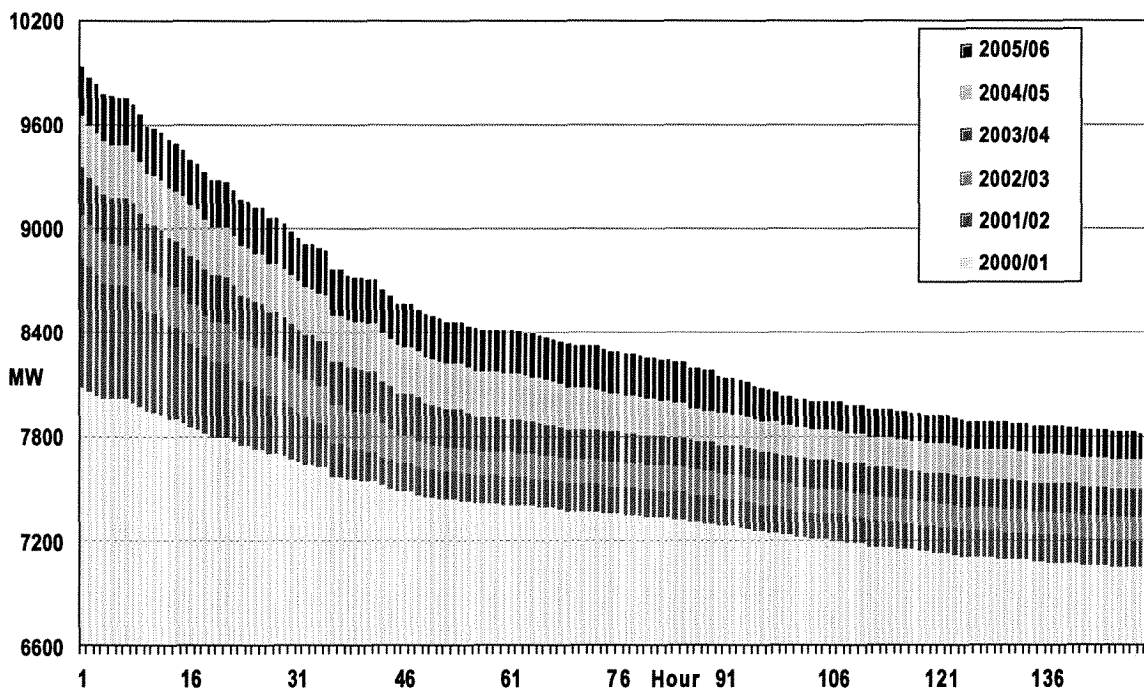


Figure Q.1 Victorian Electricity 1 in 10 Load Duration Curves

GasNet Australia Access Arrangement - Submission

Annexure 12 - Melbourne DD Trend prepared by
VENCorp

Annual Melbourne DD Trend

