WEEKLY GAS MARKET ANALYSIS

AUSTRALIAN ENERGY REGULATOR

20 - 26 September 2009

Preface

As part of its monitoring roles for the National Gas Market Bulletin Board (bulletin board) and Victorian Gas Market, the AER publishes a weekly gas market report. Part A of the report looks at gas usage and flows of registered facilities in southern and eastern Australia. Part B provides a summary of operational and market data in the Victorian Gas Market.

This report will evolve over time and the nature of information presented may change. The AER welcomes feedback on the report from interested parties. Feedback can be sent to aerinquiry@aer.gov.au, and headed 'Comments on weekly gas report.'

Summary

National Gas Market Bulletin Board

Bulletin board participants include pipeline operators and production/storage facilities in southern and eastern Australia. Participants report daily forecast and actual operational data. For the week ending 26 September 2009, Queensland Gas Company failed to provide actual flow data to the Bulletin Board Operator (BBO) for the Berwyndale South and Kenya production facilities within the specified polling times. Flows were also submitted late on one occasion by APA Group for the Moomba to Sydney Pipeline. Actual flow data for each Bulletin Board facility is provided in Appendix table A2. The AER monitors and reviews patterns of late submission of data and is engaging with facilities to ensure that in future the data requirements of the bulletin board are satisfied.

For the week ending 26 September 2009, the average amount of gas used for power generation in Tasmania increased from 4 TJ/day to 30 TJ/day. (See also Figure 2 and Figure 4). This was largely due to commissioning of the new combined cycle power plant at the Tamar Valley Power Station, which runs on gas. The combined cycle plant which began generating on 19 September, used approximately 26 TJ/day on average for the week ending 26 September, compared to 2 TJ/day in the previous week.

Victorian Gas Market

Supply Demand Point Constraints (SDPC) were issued for withdrawals at SEAGas on 21 September and for injections and withdrawals at Iona on 26 September. The market operator also issued SDPCs for injections at the Bass Gas and Longford injection points during the week. Total gas injections and withdrawals in the Victorian gas market increased by around ten per cent from the previous week. Increased demand coincided with an increase in the average daily imbalance price this week from $1.15/GJ to $1.48/GJ. Average market prices were noticeably lower on Monday and Thursday at $0.60/GJ and $0.61/GJ respectively.

Overall, there was a higher percentage of gas bid in at $0 compared to the previous week, including at Longford and Iona. Average daily injections at Longford rose by 22 per cent to 405 TJ. On a financial year-to-date basis, average daily injections into Victoria for 2009-10 have been significantly lower than the same period in 2008-09. In particular, injections from Longford have been notably lower, accounting for just 64 per cent of all gas injected,

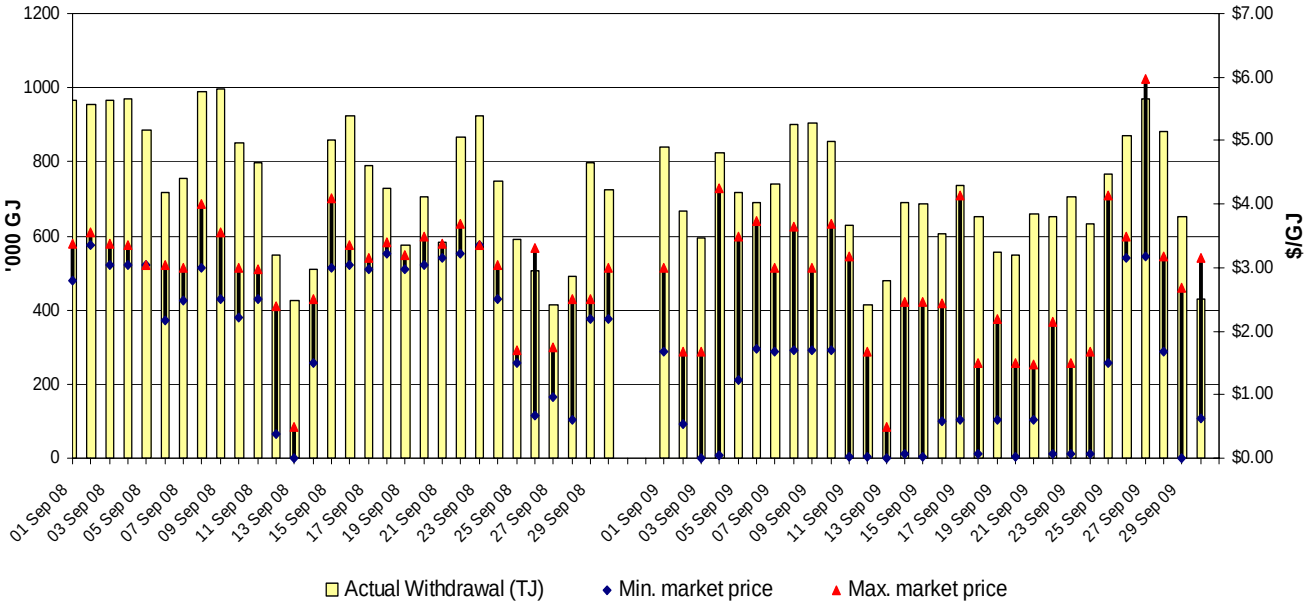
compared with 74 per cent for the same time last year. Gas on the NSW-Victoria Interconnect continued to flow into Victoria, at an average daily amount of 44 TJ, up from 40 TJ last week.

AEMO issued a negative demand override on the 23 September gas day due to market participant demand forecasts being larger than AEMO demand forecast thresholds. A positive override of 4 TJ was also applied on 25 September as participant forecasts were consistently lower than AEMO forecasts throughout the day.

Additional information — Price volatility in the Victorian gas market

Figure S1 displays the actual gas withdrawals in the Victorian gas market for the month of September 2009, comparing this to withdrawals for September 2008. The minimum and maximum market prices ($/GJ) for each day are also provided for comparison.

Figure S1: Actual withdrawals and High-Low prices (September 2008 and September 2009)



Source: http://www.aemo.com.au (INT 310, INT 041)

Daily withdrawals for September 2009 have been around 50 TJ lower on average, when compared to withdrawals during September 2008. At the same time, the market has also experienced more price volatility this month compared to 12 months ago. During September 2008, the lowest market price was $0.00/GJ and the highest was $2.62/GJ. In contrast, the market prices for September 2009 ranged between $0.33/GJ and $4.20/GJ.

On a daily basis, there was an average difference of $0.66/GJ between the highest priced schedule and the lowest priced scheduling interval in September 2008. In September 2009, the average daily difference between high and low prices has been $1.92/GJ.

Part A: National Gas Market Bulletin Board

Overview of pipeline and production flows

Figure 1 sets out the average daily pipeline flows into each key demand region across the National Gas Market. (A list of pipeline facilities for each demand region is provided in Figure A1 of the Appendix).

Figure 1: Average daily pipeline flows (TJ) into each demand region

						QLD		
Average daily flows	**NSW**	**ACT**	**VIC**	**SA**	**TAS**	Brisbane	Mt Isa	Gladstone
Current week (20 - 26 Sep)	393	21	672	297	46	174	79	71
Financial Year-to-date 2009-10*	434	38	809	282	26	152	89	68
Financial Year-to-date 2008-09**	374	42	911	340	31	189	67	65

*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
Source: National Gas Market Bulletin Board http://www.gasbb.com.au

Figure 2 provides the average daily amount of gas used for GPG (gas-powered generators) in each state.

Figure 2: Average daily gas (TJ) used by gas-powered generators in each state

Average daily gas for GPG usage^	**NSW**	**VIC**	**SA**	**TAS**	**QLD**
Current week (20 - 26 Sep)	78	35	166	30	177
Financial Year-to-date 2009-10*	83	41	147	11	118
Financial Year-to-date 2008-09**	24	85	201	20	123

^Estimated values based on application of implied heat rates for generators within the demand region sourced from ACIL Tasman's 2009 Final Report 'Fuel resource, new entry and generation costs in the NEM'
*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
Source: http://www.aemo.com.au

Notes: Data for each state collected on the following basis:

1. NSW - Smithfield Energy, Uranquinty, Hunter Valley GT, Colongra and Tallawarra power stations
2. VIC - Laverton North, Valley Power, Jeeralang A, Jeeralang B, Somerton, Bairnsdale, and Newport power stations.
3. SA - Dry Creek GT, Hallet, Pelican Point, Torrens Island, Mintaro, Osborne, Ladbroke Grove, and Quarantine power stations.
4. TAS - Bell Bay, Bell Bay Three, and Tamar Valley power stations.
5. QLD - Braemar 1, Braemar 2, Roma, Oakey, Barcaldine, and Swanbank power stations.

Figure 3 sets out the daily average flows from production and storage facilities from each production zone across the National Gas Market. (A list of production/storage facilities for each zone is provided in Figure A2 of the Appendix).

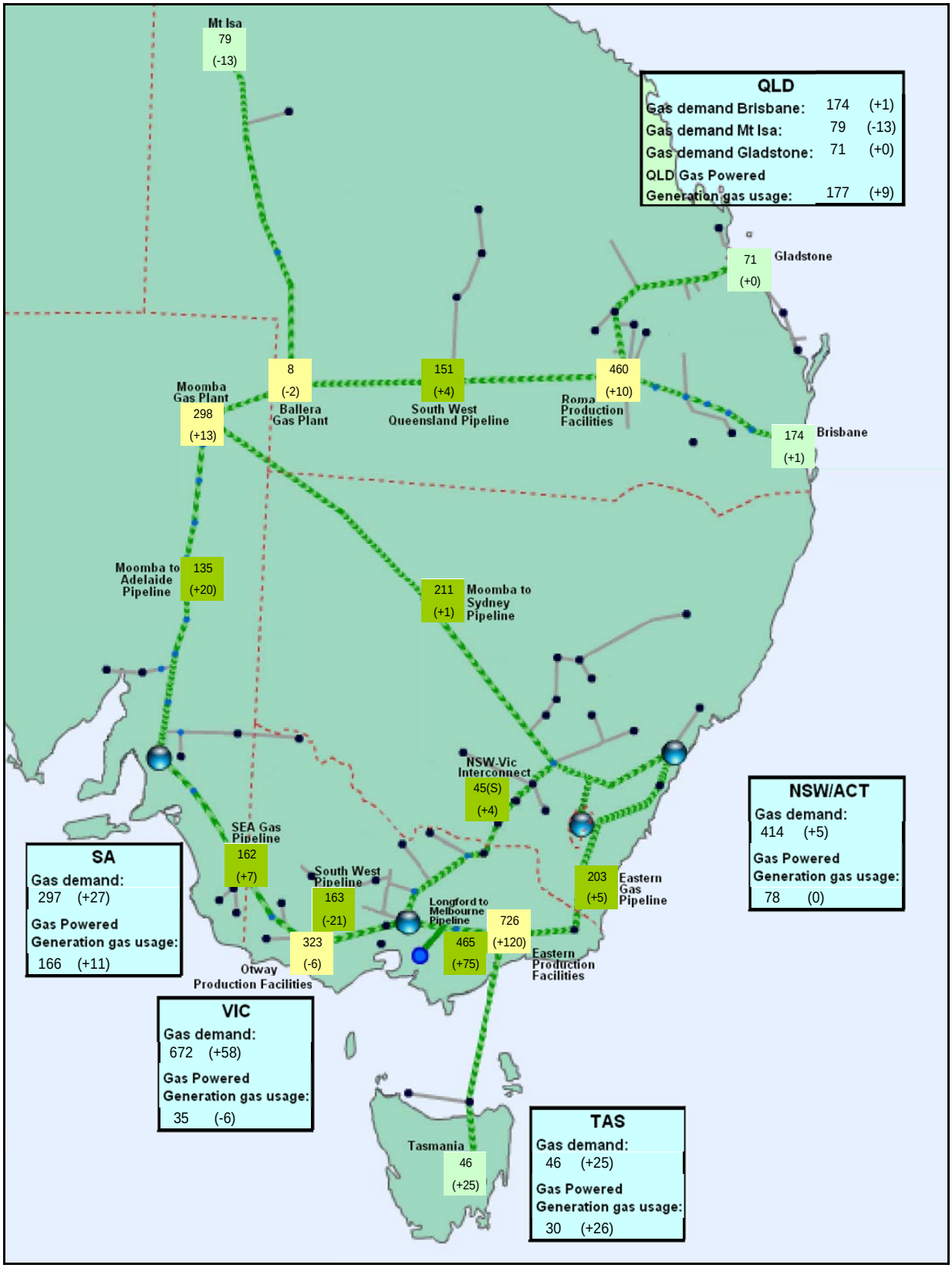
Figure 3: Daily average production flows (TJ) for each production zone

Average daily flows	**Roma/Ballera (QLD)**	**Eastern (VIC)**	**Otway Basin (VIC)**	**Moomba (SA)**
Current week (20 - 26 Sep)	468	726	323	298
Financial Year-to-date 2009*	427	820	347	350
Financial Year-to-date 2008**	375	987	392	342

*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
Source: National Gas Market Bulletin Board http://www.gasbb.com.au

Figure 4 below shows the changes in average daily pipeline and production flows compared to the previous week, as well as the gas demand and GPG usage of gas in each region.

Figure 4: Changes in gas demand and production and pipeline flows (TJ)



Source: Natural Gas Market Bulletin Board http://www.gasbb.com.au
Notes: Direction of aggregate daily flows along the NSW-Vic Interconnect indicated on map by S (South) or N (North).

Average daily production at Eastern (VIC) increased by 120 TJ, which correlated with higher flows along the Longford to Melbourne Pipeline, the Eastern Gas Pipeline, and the Tasmanian Gas Pipeline. In contrast, production at Victoria's Otway Basin fell by 6 TJ, coinciding with higher flows on the SEAGas pipeline, but lower flows along the South West Pipeline. Colder temperatures in Victoria, South Australia, and Tasmania Overall lead to

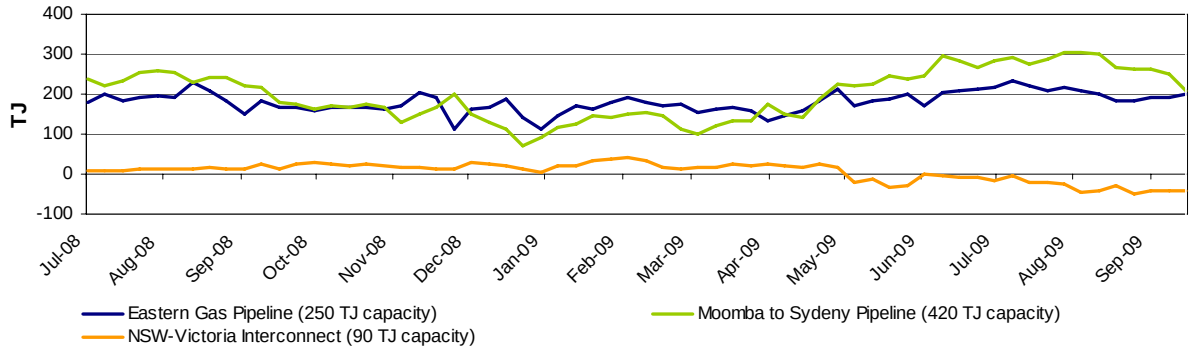
higher gas demand in these states compared to last week, with (see also Figure A3 in the Appendix). Demand was relatively flat in NSW and Queensland. The increased production from Roma and Moomba facilities were in line with increased flows along the Moomba to Adelaide Pipeline (+20 TJ); and flows also increased marginally on the Moomba to Sydney Pipeline and on the NSW-VIC interconnect, where gas continued to flow into Victoria.

Gas usage for gas-powered generation was flat in NSW and fell slightly in Victoria, but was higher in the other states compared to last week, especially in Tasmania (+26 TJ).

Gas flows into demand regions

The figures below provide the average daily flows into each of the demand region served by multiple pipelines and supply sources.

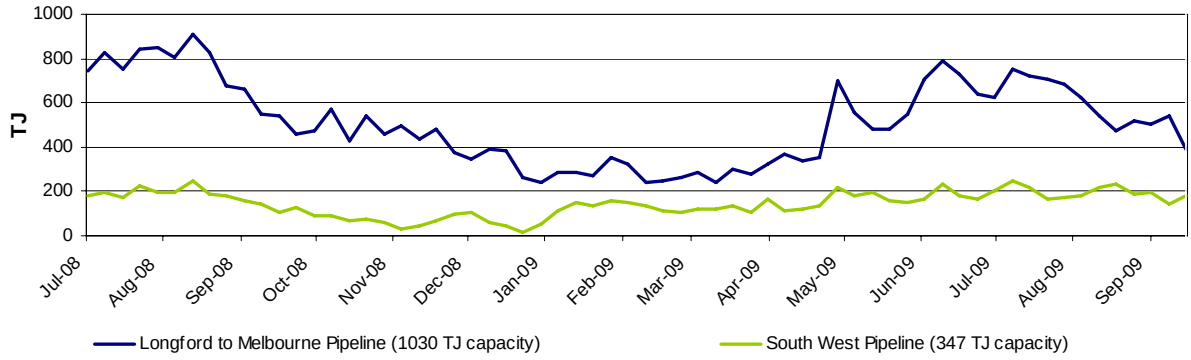
Figure 5: Average daily flows (TJ) into NSW/ACT demand region



Source: Natural Gas Market Bulletin Board http://www.gasbb.com.au

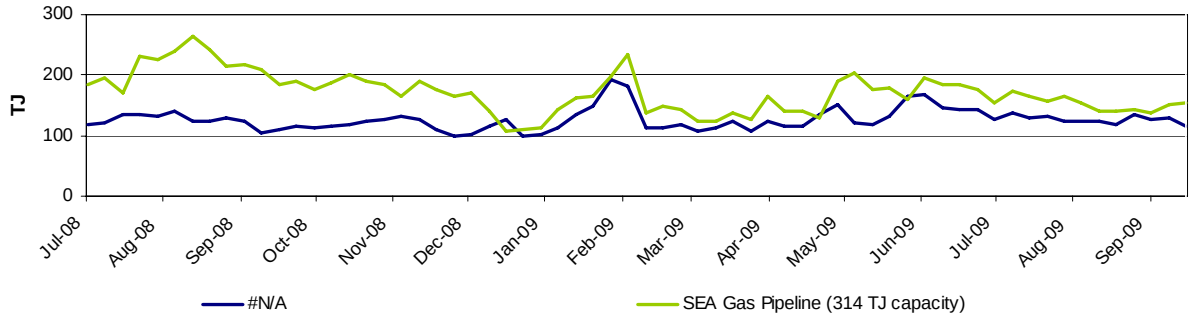
Notes: Negative flows on the NSW-Victoria Interconnect represent flows out of NSW into VIC.

Figure 6: Average daily flows (TJ) into VIC demand region



Source: Natural Gas Market Bulletin Board http://www.gasbb.com.au

Figure 7: Average daily flows (TJ) into SA demand region



Source: Natural Gas Market Bulletin Board http://www.gasbb.com.au

Part B: Victorian Gas Market

Participation in the market

Figure V1 below shows participant bids submitted at the start of the gas day (6am) at injection and withdrawal points on the Victorian Principal Transmission System (VPTS). The shaded boxes indicate that the participant submitted bids at that location on at least one occasion during the week. An "S" indicates that some of this nominated gas was scheduled into the gas market, while "NS" indicates that none of the gas was scheduled. Green shading below indicates where a change has occurred from the previous week.

Figure V1: Injection and withdrawal point bids in the VIC Gas Market^

Market Participant	Participant type	No. of injection / withdrawal bid points	Injection bids in the VPTS								Withdrawal bids in the VPTS			
			BassGas	Culcairn	IONA	LNG	Longford	SEA Gas	VicHub	Otway	Culcairn	IONA	SEA Gas	VicHub
AETV Power	Trader	1							*S					*NS
AGL (Qld)	Retailer	1				NS								
AGL	Retailer	4		NS	NS	NS	S				NS	S		
Aust. Power & Gas	Retailer	2				NS	S							
Energy Australia	Retailer	1					S							
International Power	Transmission Customer	1											S	
Simply Energy	Retailer	4			S	NS	S	*S						
Origin Energy (VIC)	Retailer	6	S	S	NS	NS	S	S			NS	NS		
Origin Energy (Uranquinty)	Trader	1					S							
Red Energy	Retailer	2				NS	S							
Santos	Retailer	2						S						*S
TRU Energy	Retailer	4			S	NS	S		NS			NS		
Victoria Electricity 2	Trader	1										S		
Victoria Electricity	Retailer	5		S	S	NS	S	S						
Visy Paper	Distribution Customer	2					S				S			

^Bids taken from 6am data for each gas day during the current week.
Source: http://www.aemo.com.au (INT131)

Notes: Comparison is approximate since data represents whether bids were under or over the scheduled market clearing price at 6am. Bids are scheduled in price merit order — this means injection bids which are less than the market clearing price will be scheduled, while withdrawal bids which are greater than the market clearing price will be scheduled into the market.

Market Prices and Ancillary Payments

Figure V2 displays volume-weighted average daily imbalance prices, compared to the 2009-10 financial year-to-date average and the 2008-09 equivalent. Daily imbalance prices for each day during the current week are also noted.

Figure V2: Imbalance Weighted Prices ($/GJ)

	Current Week (20 - 26 Sep)	Previous Week (13 - 19 Sep)	2009-10 Financial YTD*	2008-09 Financial YTD**
Average daily price	1.48	1.15	1.66	*3.05*

Current Week (20 - 26 Sep)	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Daily price	1.43	0.60	1.49	1.41	0.61	1.63	3.19

*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
Source: http://www.aemo.com.au (INT 041)

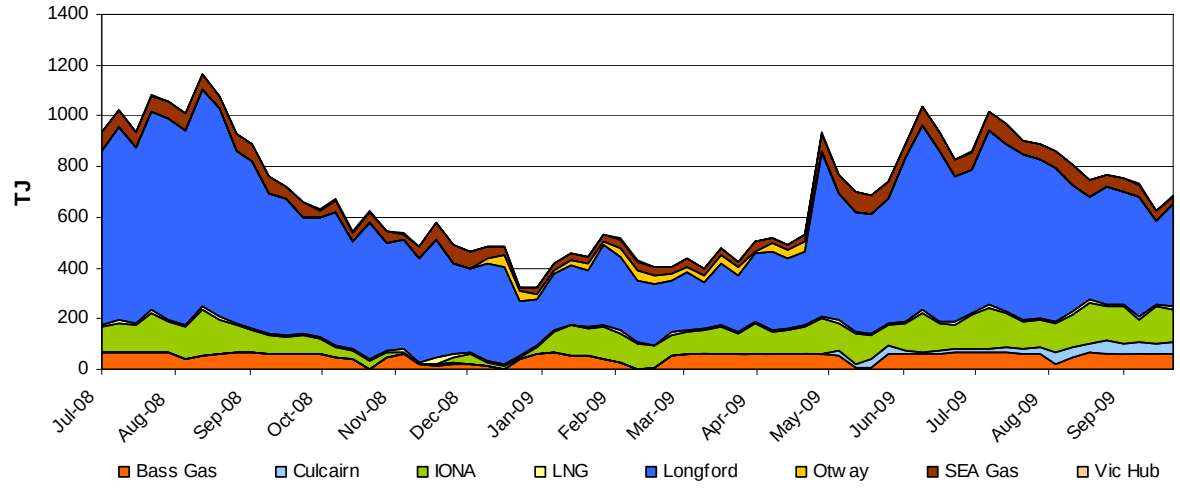
Notes: The daily average market price is a volume weighted imbalance price taking account of trading amounts at five times through the gas day — 6am, 10am, 2pm, 6pm and 10pm.

System Injections

Figure V3 notes the average daily injections into the VPTS for the current week, compared with the 2009-10 and 2008-09 equivalent financial year-to-date daily averages

Figure V3: Average daily flows (TJ) from Injection Points on the VPTS

Injection Point:	Current Week (20 - 26 Sep)	Previous Week (13 - 19 Sep)	2009-10 Financial YTD*	2008-09 Financial YTD**
Culcairn	44	40	33	0.1
Longford	405	331	524	701
LNG	10	7	9	9
IONA	131	147	133	112
VicHub	1.6	0.4	0.9	0.6
SEAGas	30	35	60	65
Bass Gas	63	61	59	62
Otway	0	0	0	0
TOTAL	**683**	**623**	**819**	**949**

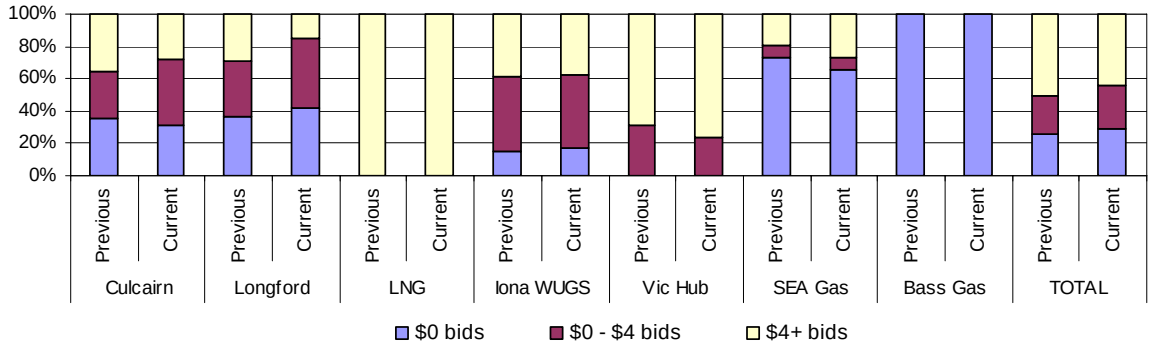


*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
Source: http://www.aemo.com.au (INT 150)

Bidding Activity

Figure V4 shows the price structure of gas bid at each of the injection points on the VPTS, within three price bands of $0/GJ, $0/GJ to $4/GJ, and $4/GJ and above.

Figure V4: Price structure of bids by injection points



Source: http://www.aemo.com.au (INT 131) - bids submitted for the 6am schedule on each day of the week.

Notes: Figures in the table are rounded off the nearest round number (TJ); the maximum allowable bid is $800/GJ.

Figure V5 provides a table of injection points on the VPTS where market participants submitted intra-day renominations, for each day of the week.

Figure V5: Intra-day rebidding of gas injections

Injection Point:	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Culcairn			Origin				
Longford	AGL Origin TRU	AGL Origin TRU	AGL Origin TRU	AGL Origin TRU	AGL Origin TRU	AGL Origin TRU	AGL TRU
LNG						Origin	TRU
Iona	Simply Origin TRU	Simply Origin TRU	Simply Origin TRU	Simply Origin	Simply Origin TRU	Simply Origin TRU	
VicHub				TRU		AETV	AETV TRU
SEAGas		Simply	Simply	Simply	Simply	Simply	Simply
Bass Gas							

Source: http://www.aemo.com.au (INT 131)

Notes: Origin = Origin Energy | AGL = AGL Sales | TRU = TRUenergy | Simply = Simply Energy | AETV = AETV Power

System withdrawals

Figure V6 notes the average daily gas usage on the VPTS for this week, compared with the 2009-10 financial year-to-date daily average, as well as the 2008-09 equivalent.

Figure V6: Average daily withdrawals (TJ) from system demand zones on the VPTS

System withdrawal zone:	Current Week (20 - 26 Sep)	Previous Week (13 - 19 Sep)	2009 Financial YTD*	2008 Financial YTD**
Ballarat	29	26	38	41
Geelong^	83	80	94	111
Gippsland	51	48	56	62
Melbourne	484	444	582	653
Northern	55	52	69	85
TOTAL	**704**	**650**	**839**	**952**

^Data presented for the Geelong also includes withdrawals for the Western system withdrawal zone or Western Transmission System (WTS). Typical WTS demand is understood to be around 10 TJ based on AEMO planning documents.
*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
Source: http://www.aemo.com.au (INT 150).

APPENDIX

Figures A1 and A2 display the daily gas flows from each pipeline and production/storage facility in the National Gas Market over the current week. The nameplate capacity or MDQ (Maximum Daily Quantity) for each facility are also provided, along with the proportion of MDQ used on average over the current week and the year to date at each facility. Flow data not provided by bulletin board polling time is indicated by N/A.

Figure A1: Daily flows (TJ) for pipeline facilities capacity

Demand zone and pipeline facility	Sun	Mon	Tue	Wed	Thu	Fri	Sat	MDQ (TJ)	YTD average capacity usage (%)	Current week average daily flows	Current YTD average daily flows*	Previous YTD average daily flows**
QLD												
Carpentaria Pipeline	0	93	93	91	91	92	91	117	76	79	89	67
QLD Gas Pipeline	72	74	72	68	68	72	69	79	86	71	68	65
Roma to Brisbane Pipeline	153	184	184	189	184	174	150	208	73	174	152	189
South West QLD Pipeline	174	162	118	143	143	141	174	168	95	151	159	73
NSW/ACT										**414**	**472**	**416**
Eastern Gas Pipeline	186	210	216	216	217	210	166	250	81	203	202	188
Moomba to Sydney Pipeline	165	216	198	244	233	208	N/A	420	64	211	270	227
NSW-VIC Interconnect^	-51	-51	-16	-52	-45	-48	-56	90	-36	-45	-33	14
VIC										**672**	**809**	**911**
Longford to Melbourne	350	391	454	501	398	460	697	1030	56	465	580	731
South West Pipeline	141	194	189	144	154	230	86	347	56	163	195	180
SA										**297**	**282**	**340**
Moomba to Adelaide Pipeline	80	132	146	156	137	160	137	253	51	135	128	125
SEA Gas Pipeline	148	171	195	154	157	180	129	314	49	162	154	215
TAS												
Tasmanian Gas Pipeline	43	41	42	40	52	51	50	129	20	46	26	31

*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
^Negative figure represents a reverse flow of gas along the pipeline

Source: Natural Gas Market Bulletin Board http://www.gasbb.com.au

Notes: Operational ranges for each pipeline facility range from a minimum of 20% to a maximum of 120% of the respective MDQs. The exceptions are the South West Queensland Pipeline and the NSW-VIC Interconnect which have minimum operational ranges of 40% and 0% of MDQ respectively.

Figure A2: Daily flows (TJ) for BB production / storage facilities compared to operational ranges and use of production/storage capacity

Production zone and production / storage facility	Sun	Mon	Tue	Wed	Thu	Fri	Sat	MDQ (TJ)	YTD average capacity usage* (%)	Current week average daily flows	Current YTD average daily flows*	Previous YTD average daily flows**
Roma / Ballera (QLD)										**468**	**427**	**375**
Berwyndale South	87	97	95	N/A	N/A	N/A	N/A	140	59	93	83	71
Fairview	113	116	104	113	118	114	115	115	95	113	110	66
Kenya^	41	46	46	N/A	N/A	N/A	N/A	160	17	44	27	
Kincora	0	0	0	0	0	0	0	25	4	0	1	9
Kogan North	9	9	9	9	9	9	9	12	58	9	7	13
Peat	7	5	7	7	7	7	7	15	66	7	10	10
Rolleston	11	12	12	12	12	11	11	30	37	12	11	12
Scotia	25	25	24	25	26	25	25	27	60	25	16	23
Spring Gully	46	52	50	51	52	52	52	60	87	51	52	57
Strathblane	46	52	50	51	52	52	52	60	87	51	52	49
Taloona	28	32	30	31	31	31	31	36	88	31	32	0
Wallumbilla	12	12	12	12	12	12	12	20	47	12	9	12
Yellowbank	15	14	13	12	10	14	13	30	50	13	15	15
Ballera	0	0	30	6	6	13	0	150	2	8	2	39
Eastern (VIC)										**726**	**820**	**987**
Orbost Gas Plant	0	0	0	0	0	0	0	10	0	0	0	0
Lang Lang Gas Plant	64	64	59	61	63	63	64	70	83	63	58	62
Longford Gas Plant	530	613	660	594	668	715	863	1140	67	663	762	924
LNG Storage Dandenong	0	0	0	0	0	0	0	158	0	0	0	0
Otway Basin (VIC)										**323**	**347**	**392**
Minerva Gas Plant	66	71	71	71	71	61	61	94	80	68	75	97
Otway Gas Plant	79	120	116	124	151	149	138	206	68	125	140	178
Iona Underground Gas Storage	139	172	166	128	131	178	0	320	41	131	132	118
Moomba (SA)												
Moomba Gas Plant	229	265	270	331	307	337	346	380	92	298	350	342

*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
^Commissioned as a Bulletin Board facility from 6 July 2009 (Facility began reporting flows from 7 July 2009)

Source: Natural Gas Market Bulletin Board http://www.gasbb.com.au

Notes: Operational ranges for each production and storage facility range from minimum of 0% to a maximum of 120 per cent of the respective MDQs. The exception is the Longford Gas Plant which has a minimum operational range of 20% of its MDQ.

Figure A3 provides the average minimum and maximum temperatures for each of the demand regions for the current week. The average temperatures for the previous week are also provided. (Note: only the demand regions where temperature is a driver of gas demand are included).

Figure A3: Average daily temperatures (°C) at each demand region

Average daily temperatures (°C)		NSW (Sydney)	ACT (Canberra)	VIC (Melbourne)	SA (Adelaide)	TAS (Hobart)
Current Week (20 - 26 September)	Average min.	15.6	6.0	10.4	10.0	7.2
	Average max.	24.9	17.6	18.1	17.3	15.3
Previous Week (13 - 19 September)	Average min.	16.2	6.5	10.6	10.8	8.6
	Average max.	24.4	21.3	19.8	20.6	17.7

Source: http://www.bom.gov.au/climate/dwo

Figure A4 shows the market prices at each of the scheduling intervals on each day during the current week. The imbalance weighted average prices for each gas day are also provided.

Figure A4: Daily Victorian gas market prices ($/GJ) at each scheduling interval

Current Week (20 - 26 September)	Scheduling Interval					Daily Imbalance Weighted Average Price
	6am	10am	2pm	6pm	10pm	
Sun	1.49	0.60	0.60	0.60	0.03	1.43
Mon	0.60	0.60	0.60	0.60	1.49	0.60
Tue	1.49	1.49	1.68	2.15	0.07	1.49
Wed	1.50	0.60	0.60	0.07	0.07	1.41
Thu	0.60	0.60	1.68	0.49	0.08	0.61
Fri	1.49	2.70	2.12	2.99	4.13	1.63
Sat	3.19	3.49	3.17	3.17	3.16	3.19

Source: http://www.aemo.com.au (INT 041).

Figure A5 compares the market participants and market operator demand forecasts and each of the scheduling intervals on each gas day during the current week. Total actual demand for each gas day is also provided, along with the total demand override (if any) from AEMO.

Figure A5: Daily demand forecasts (TJ) and daily demand overrides (TJ)

Gas Day	Forecasts (TJ)	Schedule					Total Demand Override Applied (TJ)
		1	2	3	4	5	
20-Sep	**MP Demand:**	610	604	603	599	599	**0**
	AEMO Demand:	573	562	562	579	542	
	MP demand forecast as % of AEMO	106%	107%	107%	103%	111%	
21-Sep	**MP:**	640	644	643	652	652	**0**
	AEMO:	626	634	613	620	637	
	MP demand forecast as % of AEMO	102%	102%	105%	105%	102%	
22-Sep	**MP:**	630	639	652	655	654	**0**
	AEMO:	615	641	660	659	685	
	MP demand forecast as % of AEMO	102%	100%	99%	99%	95%	
23-Sep	**MP:**	759	754	761	752	753	**-1**
	AEMO:	718	706	722	695	706	
	MP demand forecast as % of AEMO	106%	107%	105%	108%	107%	
24-Sep	**MP:**	650	643	650	637	636	**0**
	AEMO:	637	646	677	648	606	
	MP demand forecast as % of AEMO	102%	100%	96%	98%	105%	
25-Sep	**MP:**	657	670	568	583	583	**4**
	AEMO:	711	727	737	708	765	
	MP demand forecast as % of AEMO	92%	92%	77%	82%	76%	
26-Sep	**MP:**	826	832	846	850	848	**0**
	AEMO:	827	827	830	874	835	
	MP demand forecast as % of AEMO	100%	101%	102%	97%	102%	

Source: http://www.aemo.com.au (INT 108, INT 126, INT 153)