WEEKLY GAS MARKET ANALYSIS

AUSTRALIAN ENERGY REGULATOR

8 - 14 November 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

There were two instances of missing flow data on the Bulletin Board this week. BHP Billiton Petroleum failed to provide actual flow data for the Minerva Gas Plant for the 13 and 14 November gas days.

Average maximum daily temperatures for the week were higher than the November averages in all regions except for Brisbane. Average daily maximums were significantly higher than the monthly average in Melbourne and Adelaide (by around 10 degrees in each region). This contributed to significant increases in demand for gas powered electricity generation (GPG) in both Victoria and South Australia. Figure A3 shows average daily temperatures for the week.

While total demand in Victoria remained stable overall, production volumes in the state increased significantly to supply South Australia's high GPG demand as high temperatures led to increased electricity demand. This increase of about 130 TJ in GPG demand in SA also contributed to a (significant) increase in production of 28 TJ at Moomba. Figure 4 shows changes in demand and production and pipeline flows.

Increased demand in South Australia, Tasmania and Queensland contributed to an overall increase in the average production volumes of around 150 TJ this week.

Production from Santos's Orbost Gas Plant in Eastern Victoria continued production at slightly over 30 TJ per day. Flows across the NSW-VIC interconnect continued to deliver gas north into New South Wales at an increased rate from last week.

Victorian Gas Market

Total gas injections and withdrawals in the Victorian gas market remained relatively stable this week. (See Figure V3).

The total volume of gas offered in all price bands decreased this week, with the decreased volume of lower priced gas offered into the market contributing to an increase in the average daily price, despite stable demand. The average imbalance price increased from $0.68/GJ in the previous week to $0.97/GJ.

AEMO issued negative demand overrides of 1 TJ and 2 TJ on the 12 and 13 November gas days respectively, due to market participant demand forecasts falling outside AEMO demand forecast thresholds. A Supply Demand Point Constraints (SDPC) was applied at the SEA Gas withdrawal point on the 8 November gas day; in addition a number of SDPCs were applied at the Longford system injection point over four days from 10 November to 13 November.

Gas was flared due to a rupture in an underground gas pipeline at the Longford facility, which occurred just after 6 pm on the 6 November gas day. The AER understands that the incident has been reviewed by WorkSafe investigators.

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 (8 - 14 November)	326	7	461	393	54	185	78	72
Financial Year-to-date 2009-10*	408	31	723	291	34	162	85	69
Financial Year-to-date 2008-09**	354	32	781	329	34	175	79	66

*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 (8 - 14 November)	88	118	287	39	201
Financial Year-to-date 2009-10*	84	39	162	18	143
Financial Year-to-date 2008-09**	27	80	200	23	113

^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.)

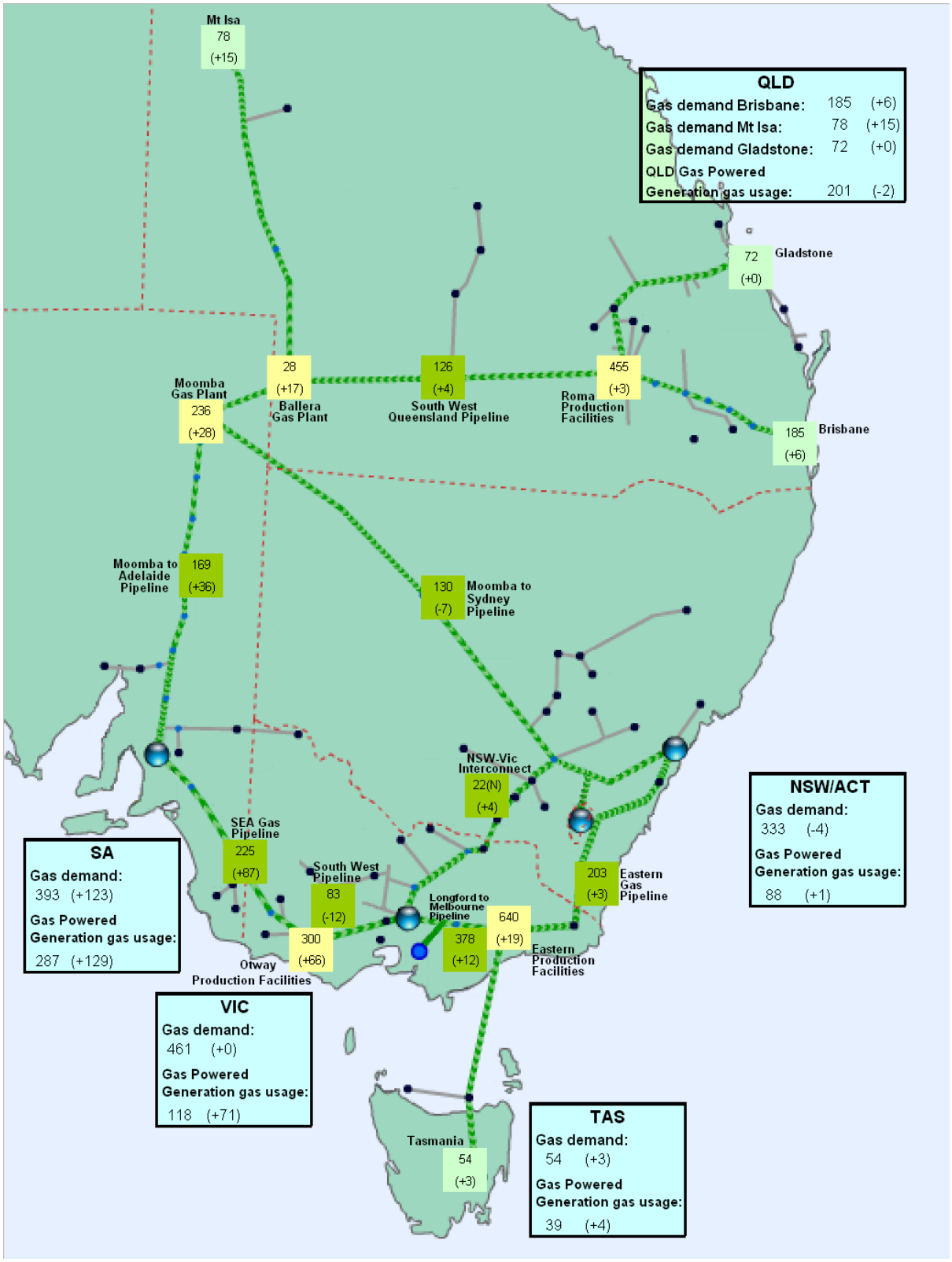
Figure 3: Daily average production flows (TJ) for each production zone

Average daily flows	**Roma (QLD)**	**Eastern Victoria**	**Otway Basin (VIC)**	**Moomba (SA/QLD)**
Current week (8 - 14 November)	455	640	300	264
Financial Year-to-date 2009-10*	436	787	313	320
Financial Year-to-date 2008-09**	320	890	343	353

*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 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)



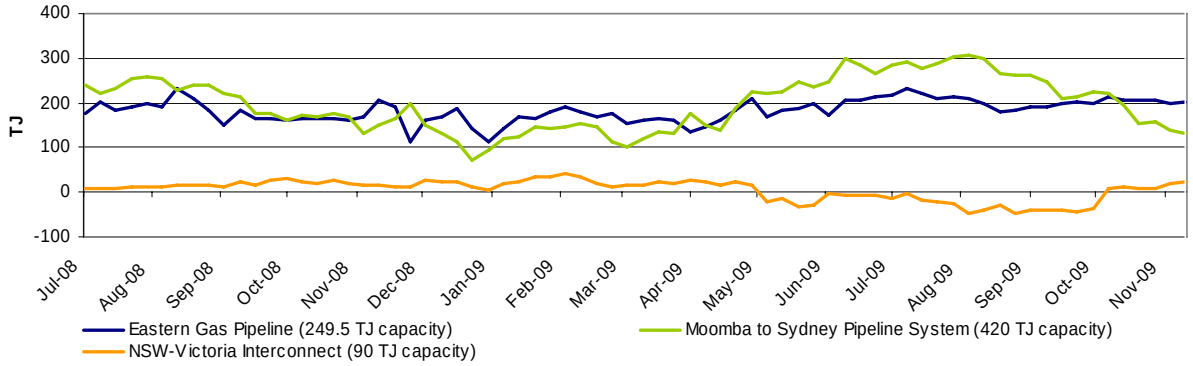
Source: Natural Gas Market Bulletin Board http://www.gasbb.com.au
Notes: Direction of aggregate daily flows along the NSW-Vic Interconnect indicated on map by S (South) or N (North).

As overall production increased this week to supply for significant increases in the demand for GPG in Victoria and South Australia, significant flow increases occurred on the MAP and SEA Gas Pipelines supplying gas to South Australia. In addition, all pipeline flows transmitting gas interstate from Victoria increased this week despite a reduction in overall demand from the NSW/ACT region.

Gas flows into demand regions

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

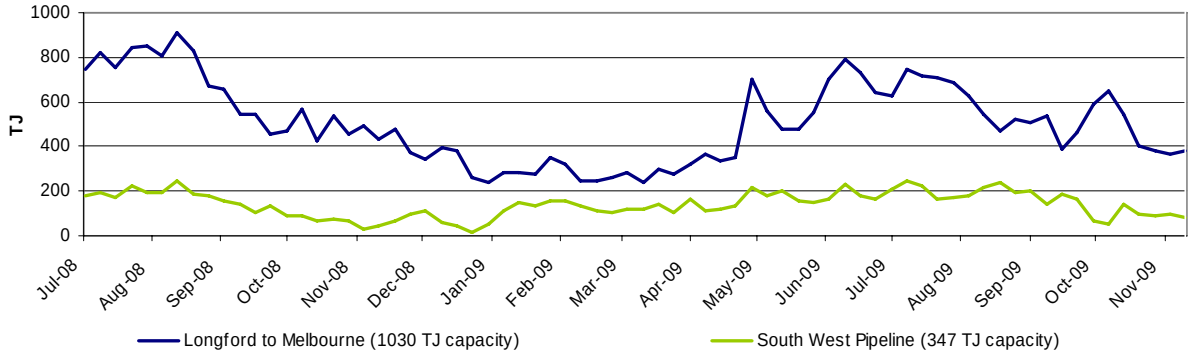
Figure 5: Average daily flows (TJ) into NSW/ACT demand region



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

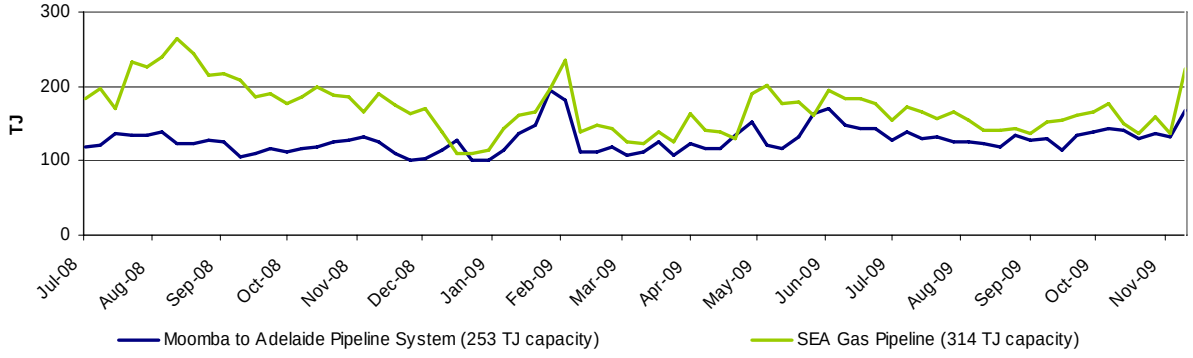
Notes: Negative flows on the NSW-Victoria Interconnect represent flows out of NSW into VIC.

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 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							NS					NS
AGL (Qld)	Retailer	1				NS								
AGL	Retailer	4		NS	NS	NS	S				NS	NS		
Aust. Power & Gas	Retailer	3				NS	S					S		
Country Energy	Transmission Customer	1									S			
Energy Australia	Retailer	1					S							
International Power	Transmission Customer	1											S	
Simply Energy	Retailer	3				NS	S	NS						
Origin (Vic)	Retailer	6	S	NS	NS	NS	S	S			S	NS		
Origin (Uranquinty)	Trader	1					S							
Red Energy	Retailer	2				NS	S							
Santos	Retailer	1						S						
TRU Energy	Retailer	4			S	NS	S					S		
Victoria Electricity	Trader	1			NS							S		
Victoria Electricity	Retailer	6			S	NS	S	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

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

Figure V2: Imbalance Weighted Prices ($/GJ)

	Current Week (8 - 14 November)	Previous Week (1 - 7 November)	2009-10 Financial YTD*	2008-09 Financial YTD**
Average daily price	0.97	0.68	1.60	*3.02*

Current Week (8 - 14 November)	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Daily price	0.35	0.76	0.79	1.61	1.67	1.49	0.11

*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)

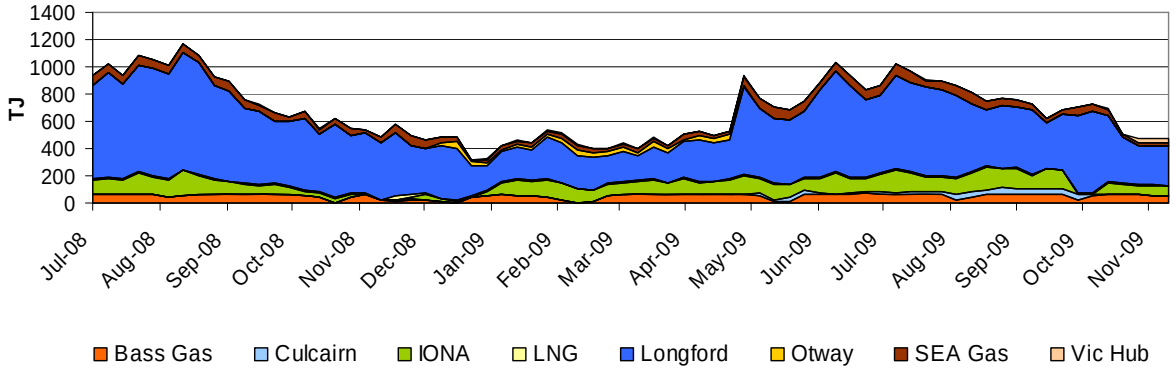
Notes: The daily average market price is a volume weighted imbalance price taking account of trading amounts at five times through the gas day — 6am, 10am, 2pm, 6pm and 10pm.

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 (8 - 14 November)	Previous Week (1 - 7 November)	2009-10 Financial YTD*	2008-09 Financial YTD**
Culcairn	0	0	24	0.1
Longford	295	280	482	614
LNG	7	9	9	9
IONA	69	74	104	82
VicHub	30.7	32.6	6.1	1.6
SEAGas	12	19	51	55
Bass Gas	54	55	57	55
Otway	0	0	0	0
TOTAL	**468**	**470**	**733**	**816**

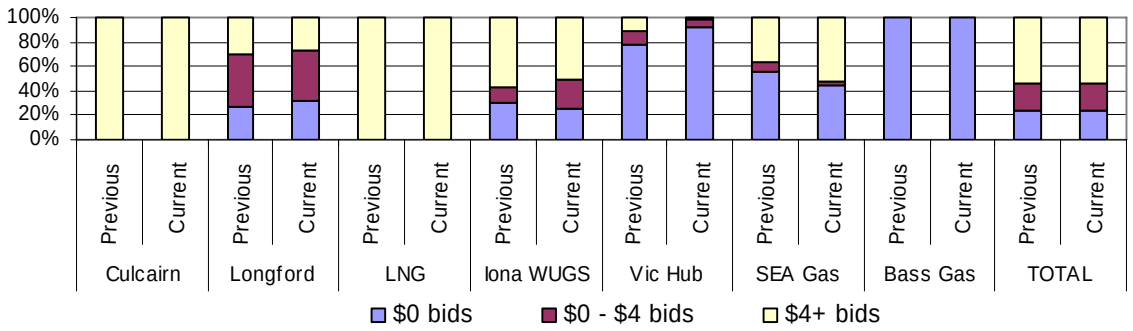


*Average daily estimated gas consumption measured from 1 July 2009 to the current week (inclusive)
**Average daily estimated gas consumption measured from 1 July 2008 to the equivalent week in 2008 (inclusive)
Source: http://www.aemo.com.au (INT 150)

Bidding Activity

Figure V4 compares 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, for the current week and for the previous week.

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							
Longford	AGL TRU	AGL	AGL Origin TRU	Origin	AGL Origin	AGL	AGL Origin TRU
LNG			Simply Origin		Simply		
Iona	Origin TRU	TRU	AGL Origin TRU	TRU	AGL Origin TRU	TRU	TRU
VicHub	AETV		AETV				AETV
SEAGas	Simply Origin	Simply	Simply	Simply	Simply Origin	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 (8 - 14 November)	Previous Week (1 - 7 November)	2009-10 Financial YTD*	2008-09 Financial YTD**
Ballarat	9	13	32	32
Geelong^	66	74	87	101
Gippsland	56	46	53	69
Melbourne	279	283	498	538
Northern	51	48	64	77
TOTAL	**461**	**463**	**734**	**818**

^Data presented also includes withdrawals for the Western system withdrawal zone or Western Transmission System (WTS).
*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	75	80	78	78	80	78	79	117	73	78	85	79
QLD Gas Pipeline	66	72	68	72	83	71	68	79	87	72	69	66
Roma to Brisbane Pipeline	178	200	197	194	189	180	157	208	78	185	162	175
South West QLD Pipeline	133	117	98	126	125	137	145	168	90	126	151	64
NSW/ACT										**333**	**439**	**386**
Eastern Gas Pipeline	190	214	230	226	212	185	163	250	81	203	203	181
Moomba to Sydney Pipeline	100	163	142	143	136	129	98	420	56	130	236	205
NSW-VIC Interconnect^	18	28	19	20	34	19	19	90	-21	22	-19	17
VIC										**461**	**723**	**781**
Longford to Melbourne	276	388	433	422	416	397	316	1030	53	378	542	642
South West Pipeline	64	85	86	98	100	84	62	347	45	83	158	139
SA										**393**	**291**	**329**
Moomba to Adelaide Pipeline	138	178	190	189	185	163	137	253	52	169	133	124
SEA Gas Pipeline	178	215	234	236	240	243	227	314	50	225	158	205
TAS												
Tasmanian Gas Pipeline	54	54	54	56	57	55	51	129	27	54	34	34

*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
Flow on Tasmanian Gas Pipeline for Thursday has not been included in average flow calculations for the current week

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 (QLD)										**455**	**436**	**320**
Berwyndale South	81	105	108	117	109	103	89	140	63	101	89	66
Fairview	122	117	119	119	119	119	119	115	97	119	112	62
Kenya^	61	56	61	60	60	47	38	160	23	55	36	
Kincora	0	0	8	0	0	0	0	25	3	1	1	8
Kogan North	7	7	7	7	7	7	7	12	66	7	8	12
Peat	6	6	6	6	7	6	7	15	59	6	9	10
Rolleston	12	12	12	12	12	12	12	30	38	12	11	12
Scotia	25	25	27	27	27	27	27	27	73	26	20	21
Spring Gully	35	35	35	42	42	56	38	60	80	40	48	55
Strathblane	35	35	35	42	42	56	38	60	80	40	48	47
Taloona	21	21	21	25	26	34	23	36	81	24	29	0
Wallumbilla	12	11	11	12	12	12	12	20	52	12	10	13
Yellowbank	9	9	10	10	10	10	13	30	47	10	14	14
Eastern (VIC)										**640**	**787**	**890**
Orbost Gas Plant	31	32	32	34	35	34	34	92	5	33	5	0
Lang Lang Gas Plant	55	55	55	54	53	54	53	70	80	54	56	54
Longford Gas Plant	422	540	596	597	598	600	515	1140	64	553	726	835
LNG Storage Dandenong	0	0	0	0	0	0	0	158	0	0	0	0
Otway Basin (VIC)										**300**	**313**	**343**
Minerva Gas Plant	61	87	94	94	94	N/A	N/A	94	79	86	74	91
Otway Gas Plant	104	113	148	149	149	149	110	206	65	132	134	160
Iona Underground Gas Storage	59	89	77	87	105	93	65	320	33	82	104	91
Moomba (SA/QLD)										**264**	**320**	**353**
Moomba Gas Plant	196	264	278	271	240	224	176	430	73	236	315	313
Ballera	18	37	54	27	29	20	12	150	4	28	5	40

*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)
#Year-to-date flows for Kenya Gas Plant and late data submitted for Berwyndale South and Kogan North facilities has been used to estimate the total production for the Roma/Ballera region.
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)		QLD (Brisbane)	NSW (Sydney)	ACT (Canberra)	VIC (Melbourne)	SA (Adelaide)	TAS (Hobart)
Current Week (8-14 Nov)	Min.	17.3	17.2	10.0	18.7	23.7	12.9
	Max.	26.9	23.8	31.6	32.5	38.5	22.0
Previous Week (1-7 Nov)	Min.	17.5	17.8	12.0	12.8	15.3	9.5
	Max.	27.8	24.4	26.3	23.8	27.9	18.2

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 (8 - 14 November)	Scheduling Interval					Daily Imbalance Weighted Average Price
	6am	10am	2pm	6pm	10pm	
Sun	0.06	2.34	1.50	2.69	2.88	0.35
Mon	0.48	1.50	3.15	3.13	1.49	0.76
Tue	0.49	0.55	4.25	3.07	3.14	0.79
Wed	1.50	3.17	3.09	3.17	3.17	1.61
Thu	1.50	3.48	3.47	3.17	3.17	1.67
Fri	1.50	1.49	1.55	1.50	0.07	1.49
Sat	0.09	0.21	0.49	0.49	1.53	0.11

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	Demand Forecasts (TJ)	Schedule					Total Demand Override Applied (TJ)
		1	2	3	4	5	
8-Nov	**MP**	312	312	326	323	323	**0**
	AEMO	272	319	321	336	333	
	MP as % of AEMO	115	98	102	96	97	
9-Nov	**MP**	412	433	453	458	457	**0**
	AEMO	395	420	437	444	444	
	MP as % of AEMO	104	103	104	103	103	
10-Nov	**MP**	435	452	469	477	478	**0**
	AEMO	425	442	474	482	484	
	MP as % of AEMO	102	102	99	99	99	
11-Nov	**MP**	493	512	510	515	515	**0**
	AEMO	466	476	482	494	520	
	MP as % of AEMO	106	108	106	104	99	
12-Nov	**MP**	494	496	497	506	506	**-1**
	AEMO	474	455	471	477	478	
	MP as % of AEMO	104	109	106	106	106	
13-Nov	**MP**	492	495	499	500	498	**-2**
	AEMO	471	502	484	476	471	
	MP as % of AEMO	104	99	103	105	106	
14-Nov	**MP**	379	379	375	374	374	**0**
	AEMO	356	356	354	354	360	
	MP as % of AEMO	106	106	106	106	104	

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