MOS ESTIMATES REPORT: MOS PERIODS; MARCH 2015, APRIL 2015 & MAY 2015

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1. Introduction

MOS (Market Operator Service) estimates provide a guide of the largest daily increase and decrease MOS quantities that market participants may reasonably expect for each STTM pipeline. The MOS estimate is based on historical data and therefore does not limit the quantity of MOS that may be experienced in the future.

The MOS estimates also determine the value of any overrun MOS. If the MOS estimate (increase or decrease) for an STTM pipeline exceeds the total quantity of MOS offered for that pipeline (increase or decrease respectively), then any overrun MOS is paid at the weighted average price within the relevant MOS stack. Otherwise, if the total quantity of MOS offered for an STTM pipeline exceeds the MOS estimate then overrun MOS is paid at the highest priced offer within the stack.

In accordance with rule 397 of the National Gas Rules (STTM Rules), AEMO publishes MOS increase and decrease estimates for each STTM pipeline prior to the commencement of each monthly MOS period. In determining the MOS estimates for each MOS period, AEMO must use the data specified in Section 5.2 (b) of the STTM Procedures.

2. The MOS period

MOS periods are defined in section 5.1 of the STTM Procedures. The MOS estimates contained in this document relate to: MOS periods March 2015, April 2015 and May 2015.

The MOS quantities for each STTM pipeline and each gas day are as determined in accordance with the published methodology for determining MOS estimates.[1]

Sydney and Adelaide hubs

The MOS quantities for these periods are based on 'Method 2' for year 3 to year 6 of an STTM hub.[2] This means they are derived using the actual daily MOS allocation quantities for the periods March 2011, 2012, 2013, 2014; April 2011, 2012, 2013, 2014; and May 2011, 2012, 2013, 2014; for the following STTM pipelines:

- Moomba to Sydney Pipeline (MSP) and Eastern Gas Pipeline (EGP) – these supply gas to the Sydney STTM hub; and
- Moomba to Adelaide Pipeline (MAP) and SEA Gas pipeline (SEA) – these supply gas to the Adelaide STTM hub.

The input data collected from the previous four years was combined to create a larger and more representative sample of MOS allocations, as stated under Method 2 in the methodology.

Brisbane hub

The Brisbane STTM hub commenced operations on 1 December 2011. Therefore The MOS quantities for this period are based on 'Method 2' for year 3 to year 6 of an STTM hub.[3] This means MOS estimates for the upcoming MOS period for the Roma to Brisbane Pipeline (RBP), the sole

[1] Available at: http://www.aemo.com.au/en/Gas/Wholesale-Gas-Markets/Short-Term-Trading-Market/Market-Operator-Service-MOS.

[2] *Methodology for determining MOS estimates v2.0,* 2011; p.18.

[3] *Methodology for determining MOS estimates v2.0,* 2011; p.18.

pipeline that supplies gas to the Brisbane STTM hub are derived using the actual daily MOS allocation quantities for the periods March 2012, 2013, 2014; April 2012, 2013, 2014; and May 2012, 2013, 2014.

Explanation of MOS quantities and summary statistics

Positive MOS quantities indicate the requirements for increase MOS, whereas negative MOS quantities indicate the requirements for decrease MOS.[4]

STTM Rule 397(1)(a) requires AEMO to publish its estimate of the maximum quantity of MOS (by way of increase and decrease) likely to be required on any gas day in the relevant MOS period. This is provided in Table 1 below.

STTM Rule 397(1)(b) requires AEMO to publish its estimate of the range of daily quantities of MOS likely to be required, together with the number of gas days in the MOS period to which each of those estimated quantities applies. This is provided in the following tables and charts:

- Table 2 shows summary statistics of MOS quantity distributions, including the means, standard deviations, 5 and 95 percentile of the distributions, range and inter-quartile range,[5] and the proportions of days in the MOS period with positive and negative MOS quantities.
- Table 3 shows the daily MOS quantities sorted in descending order and the number of day(s) associated with each estimated quantity.
- Figure 1 displays the curves of daily MOS quantities sorted in descending order from the highest to the lowest values.
- Figure 2 shows the Box plots which provide a graphical summary of the data and are useful tools for comparing the MOS increase and decrease quantities of the different STTM pipelines.

[4] Note MOS increase and decrease offers must comply with the requirements in section 5.4(b)(ii) and section 5.4(c)(ii) of the STTM Procedures, and should be greater than zero for the purpose of creating the MOS stacks.

[5] The inter-quartile range is the range of values between the first (25%) and third quartiles (75%) of the distributions.

MOS Period March 2015

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	**18,174**	**1,575**	**7,700**	**846**	**8,810**
MOS decrease	**32,619**	**13,021**	**4,875**	**7,969**	**10,499**

Figure 1 – Curves of daily MOS quantities

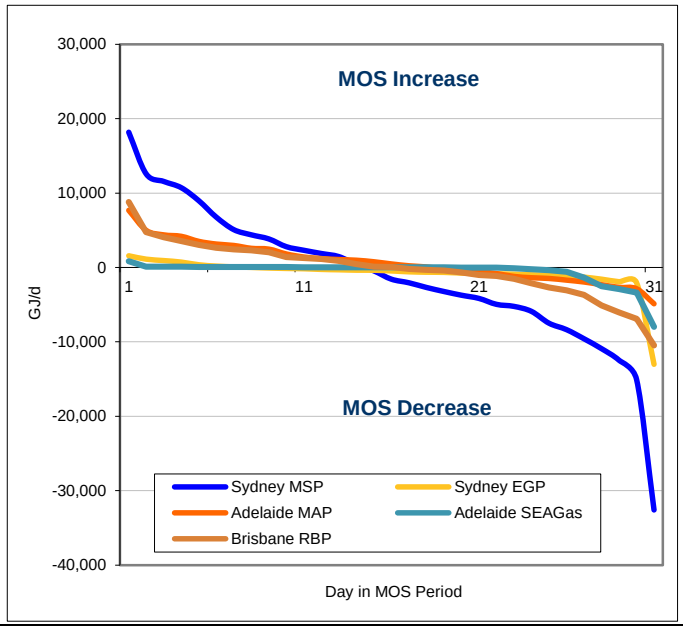

Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	18,174	1,575	7,700	846	8,810
95%	12,055	1,025	4,702	103	4,413
75%	4,102	-31	2,536	50	2,169
50%	-1,588	-461	491	2	65
25%	-5,582	-942	-1,280	-185	-1,847
5%	-13,764	-1,973	-2,755	-3,147	-6,479
Minimum	-32,619	-13,021	-4,875	-7,969	-10,499
Mean	-1,288	-815	706	-576	-210
Std deviation	9,690	2,409	2,692	1,659	3,769
% days positive	45%	26%	58%	55%	52%
% days negative	55%	74%	42%	45%	48%

Figure 2 – Distribution of daily MOS quantities

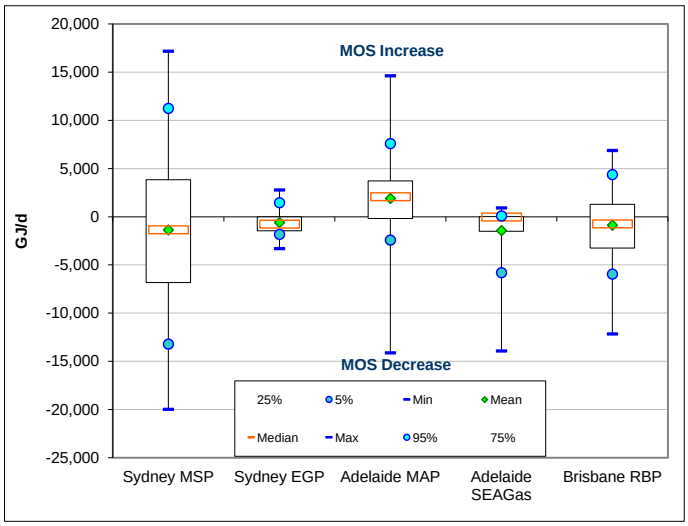

Table 3 – Daily MOS quantities (GJ/d) for March 2015

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	18,174	1,575	7,700	846	8,810
1	12,556	1,119	5,003	110	4,756
1	11,554	931	4,400	95	4,070
1	10,713	726	4,204	85	3,555
1	8,965	365	3,525	77	3,049
1	6,752	187	3,163	63	2,632
1	5,071	84	2,975	55	2,416
1	4,376	10	2,589	52	2,309
1	3,827	-72	2,482	48	2,028
1	2,782	-128	1,827	45	1,395
1	2,298	-167	1,419	40	1,261
1	1,864	-258	1,203	34	1,141
1	1,447	-310	1,079	33	884
1	375	-362	988	23	439
1	-470	-371	782	17	107
1	-1,588	-461	491	2	65
1	-2,070	-580	243	0	-180
1	-2,699	-633	83	-1	-333
1	-3,244	-657	-198	-1	-408
1	-3,743	-751	-379	-3	-670
1	-4,175	-813	-547	-6	-1,019
1	-4,971	-850	-806	-26	-1,127
1	-5,245	-900	-1,190	-125	-1,544
1	-5,918	-983	-1,370	-245	-2,149
1	-7,507	-1,029	-1,466	-369	-2,695
1	-8,370	-1,103	-1,693	-570	-3,089
1	-9,596	-1,293	-1,943	-1,352	-3,661
1	-10,928	-1,572	-2,303	-2,506	-5,086
1	-12,482	-1,912	-2,666	-2,910	-6,029
1	-15,045	-2,034	-2,843	-3,384	-6,928
1	-32,619	-13,021	-4,875	-7,969	-10,499

MOS Period April 2015

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	20,462	2,158	12,113	104	8,778
MOS decrease	22,008	4,873	11,025	10,688	10,683

Figure 1 – Curves of daily MOS quantities

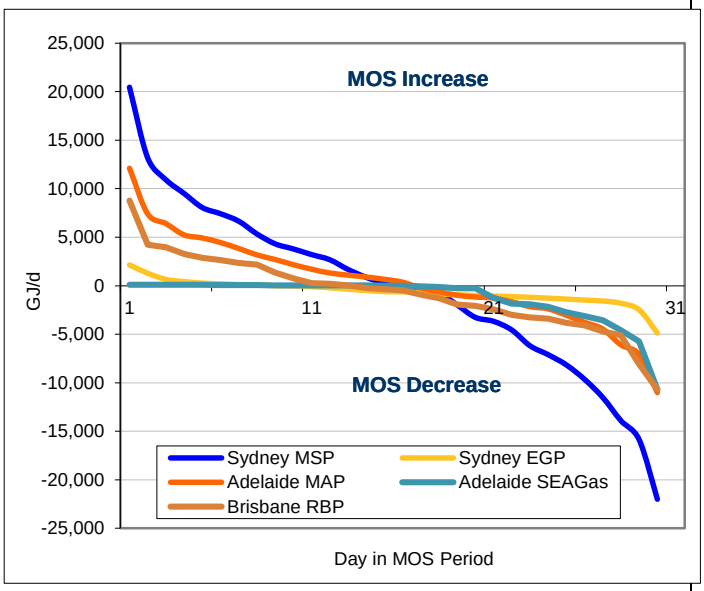

Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	20,462	2,158	12,113	104	8,778
95%	12,163	1,010	6,954	96	4,110
75%	5,085	73	3,057	55	1,974
50%	185	-607	515	1	-411
25%	-5,778	-1,165	-2,039	-1,884	-3,191
5%	-14,989	-2,169	-6,652	-5,214	-6,743
Minimum	-22,008	-4,873	-11,025	-10,688	-10,683
Mean	-349	-623	414	-1,248	-765
Std deviation	9,108	1,240	4,635	2,384	3,891
% days positive	53%	30%	53%	53%	43%
% days negative	47%	70%	47%	47%	57%

Figure 2 – Distribution of daily MOS quantities

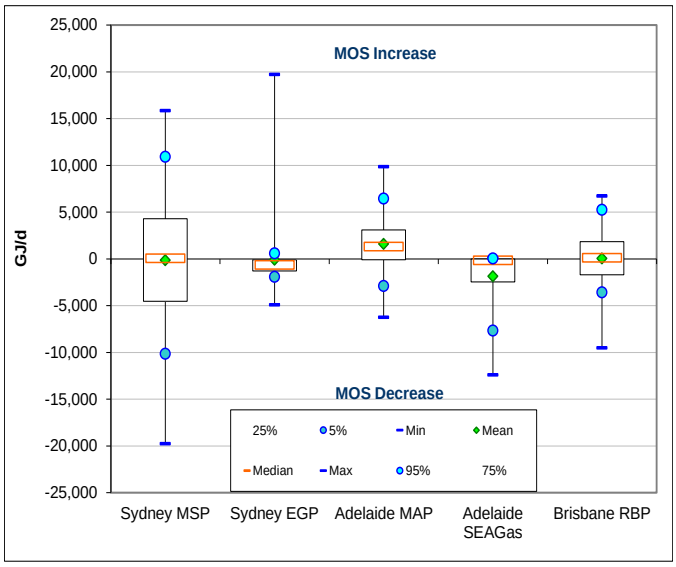

Table 3 – Daily MOS quantities (GJ/d) for April 2015

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	20,462	2,158	12,113	104	8,778
1	13,175	1,296	7,403	97	4,224
1	10,925	661	6,405	94	3,970
1	9,509	434	5,238	89	3,274
1	8,059	277	4,920	84	2,881
1	7,425	210	4,447	65	2,646
1	6,654	130	3,838	60	2,338
1	5,341	95	3,176	58	2,185
1	4,317	9	2,701	47	1,341
1	3,796	-13	2,168	45	775
1	3,213	-89	1,701	36	277
1	2,684	-201	1,314	29	197
1	1,684	-347	1,090	20	40
1	870	-479	896	19	-241
1	277	-590	664	2	-372
1	93	-623	366	0	-449
1	-357	-675	-242	-58	-922
1	-726	-843	-630	-117	-1,274
1	-1,974	-925	-982	-250	-1,939
1	-3,262	-999	-1,169	-274	-2,072
1	-3,670	-1,057	-1,272	-1,254	-2,431
1	-4,559	-1,114	-1,666	-1,833	-2,997
1	-6,184	-1,182	-2,163	-1,901	-3,255
1	-7,107	-1,273	-2,388	-2,174	-3,388
1	-8,160	-1,364	-3,052	-2,721	-3,830
1	-9,646	-1,469	-3,776	-3,140	-4,099
1	-11,515	-1,563	-4,465	-3,566	-4,724
1	-13,913	-1,799	-6,105	-4,569	-5,109
1	-15,870	-2,471	-7,099	-5,742	-8,080
1	-22,008	-4,873	-11,025	-10,688	-10,683

MOS Period May 2015

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	22,156	4,284	10,385	329	7,519
MOS decrease	35,576	3,054	5,703	11,922	10,085

Figure 1 – Curves of daily MOS quantities

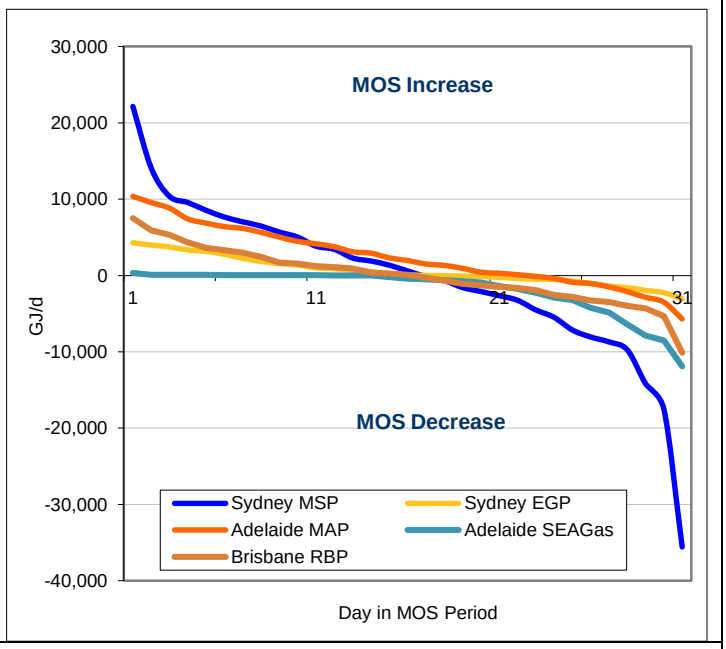

Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	22,156	4,284	10,385	329	7,519
95%	12,233	3,867	9,211	104	5,610
75%	6,080	1,703	5,349	44	2,063
50%	597	90	1,973	-403	106
25%	-4,992	-487	-246	-2,585	-2,235
5%	-15,843	-2,097	-3,173	-8,195	-4,813
Minimum	-35,576	-3,054	-5,703	-11,922	-10,085
Mean	-363	578	2,443	-1,864	-50
Std deviation	10,548	1,889	3,992	3,071	3,650
% days positive	52%	55%	71%	42%	52%
% days negative	48%	45%	29%	58%	48%

Figure 2 – Distribution of daily MOS quantities

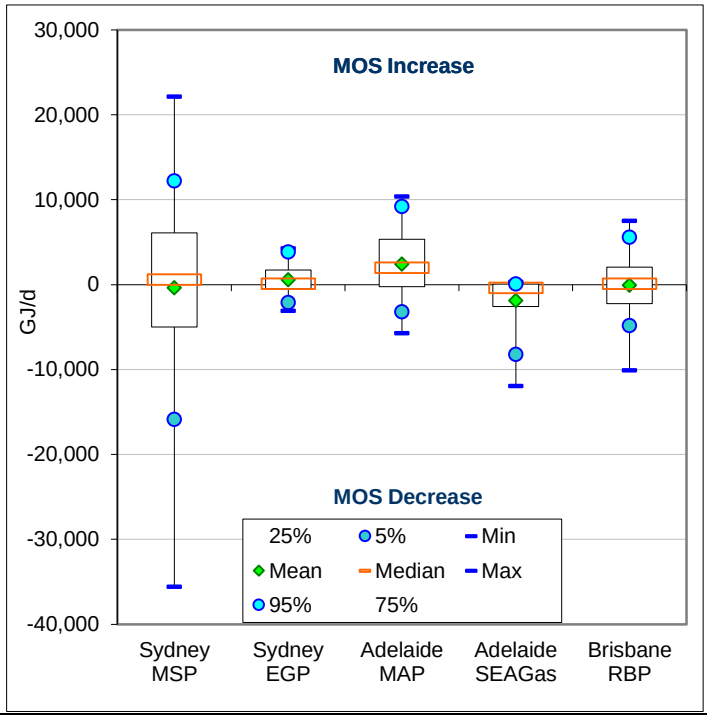

Table 3 – Daily MOS quantities (GJ/d) for May 2015

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	22,156	4,284	10,385	329	7,519
1	14,093	3,991	9,577	110	5,908
1	10,373	3,742	8,845	98	5,311
1	9,562	3,346	7,432	84	4,342
1	8,540	3,168	6,877	71	3,594
1	7,658	2,771	6,414	54	3,319
1	7,031	2,251	6,184	51	2,983
1	6,474	1,840	5,655	46	2,443
1	5,686	1,566	5,043	41	1,683
1	5,030	1,380	4,473	38	1,540
1	3,834	988	4,165	30	1,203
1	3,429	895	3,775	20	1,109
1	2,288	682	3,125	3	923
1	1,895	490	2,932	-5	399
1	1,356	205	2,320	-218	249
1	597	90	1,973	-403	106
1	-128	10	1,520	-507	-304
1	-658	-18	1,330	-607	-674
1	-1,576	-81	946	-754	-1,068
1	-2,096	-126	442	-932	-1,299
1	-2,642	-245	295	-1,390	-1,501
1	-3,243	-381	111	-1,749	-1,649
1	-4,507	-470	-115	-2,261	-1,914
1	-5,477	-504	-376	-2,908	-2,555
1	-7,145	-721	-880	-3,214	-2,813
1	-8,060	-1,019	-1,050	-4,216	-3,254
1	-8,705	-1,383	-1,488	-4,850	-3,474
1	-9,748	-1,597	-2,114	-6,428	-3,964
1	-14,176	-1,939	-2,856	-7,896	-4,297
1	-17,510	-2,255	-3,490	-8,493	-5,329
1	-35,576	-3,054	-5,703	-11,922	-10,085