

MOS ESTIMATES REPORT: MOS PERIODS: SEPTEMBER 2015, OCTOBER 2015 & NOVEMBER 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 September 2015, October 2015 and November 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 September 2011, 2012, 2013, 2014; October 2011, 2012, 2013, 2014; and November 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 September 2012, 2013, 2014; October 2012, 2013, 2014; and November 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.

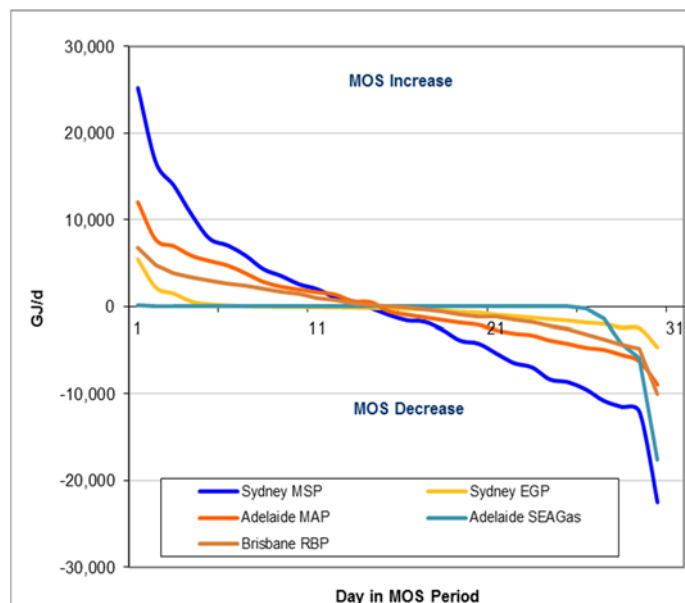
⁴ Note MOS increase and decrease offers must comply with the requirements in section 5.4(b)(ii) and section 5.4(c)(ii) of the STTM Procedures, and should be greater than zero for the purpose of creating the MOS stacks.

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

MOS Period September 2015

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	25,212	5,465	12,028	196	6,739
MOS decrease	22,495	4,649	8,934	17,616	10,035

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	25,212	5,465	12,028	196	6,739
95%	15,442	1,888	7,373	82	4,349
75%	4,129	-12	2,708	37	2,010
50%	-1,253	-237	-725	1	-33
25%	-6,819	-1,208	-3,228	-4	-1,713
5%	-11,822	-2,441	-5,931	-5,137	-4,579
Minimum	-22,495	-4,649	-8,934	-17,616	-10,035
Mean	-528	-412	70	-958	-128
Std deviation	9,650	1,685	4,709	3,411	3,294
% days positive	43%	23%	47%	53%	50%
% days negative	57%	77%	53%	47%	50%

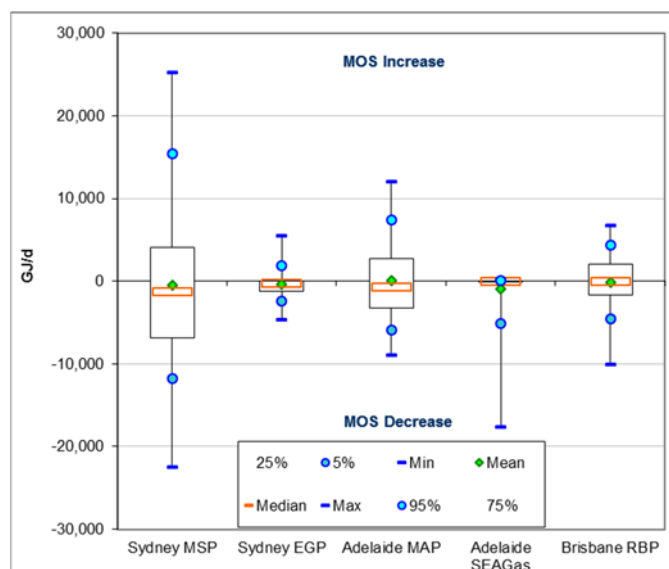
Figure 2 – Distribution of daily MOS quantities


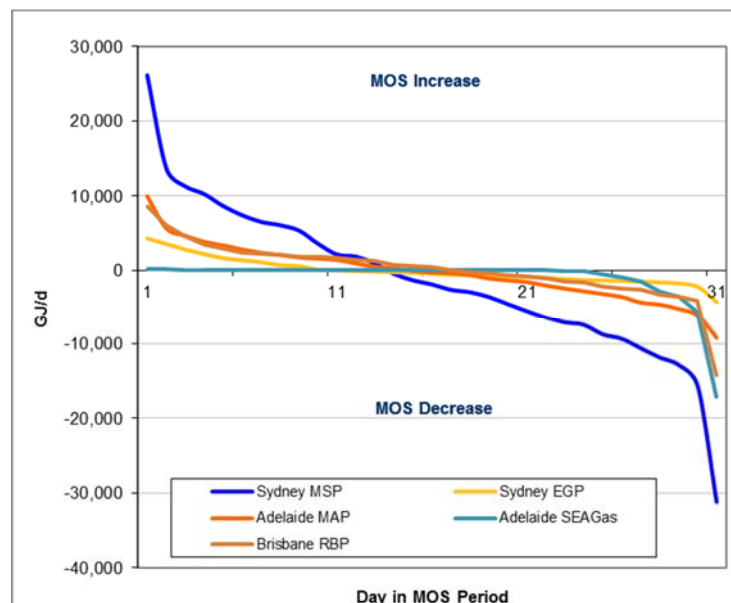
Table 3 – Daily MOS quantities (GJ/d) for September 2015

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	25,212	5,465	12,028	196	6,739
1	16,637	2,209	7,706	94	4,749
1	13,981	1,496	6,966	67	3,860
1	10,603	578	5,863	60	3,357
1	7,829	260	5,257	56	3,045
1	7,063	126	4,737	52	2,654
1	5,901	28	3,848	43	2,411
1	4,327	-8	2,847	40	2,103
1	3,534	-24	2,292	28	1,730
1	2,577	-36	1,966	17	1,494
1	2,014	-65	1,650	8	1,026
1	1,055	-91	1,396	7	711
1	600	-130	611	4	411
1	-147	-157	521	2	102
1	-944	-208	-532	1	28
1	-1,561	-265	-917	0	-94
1	-1,728	-305	-1,226	0	-273
1	-2,632	-424	-1,529	-1	-514
1	-3,879	-582	-1,826	-1	-857
1	-4,205	-656	-2,069	-2	-1,113
1	-5,338	-914	-2,675	-3	-1,199
1	-6,454	-1,072	-3,073	-3	-1,513
1	-6,941	-1,254	-3,280	-4	-1,779
1	-8,338	-1,441	-3,867	-5	-2,244
1	-8,638	-1,580	-4,240	-9	-2,581
1	-9,484	-1,817	-4,698	-245	-3,137
1	-10,792	-1,967	-4,929	-1,398	-3,804
1	-11,498	-2,389	-5,518	-4,258	-4,282
1	-12,087	-2,484	-6,268	-5,856	-4,822
1	-22,495	-4,649	-8,934	-17,616	-10,035

MOS Period October 2015

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	26,139	4,277	9,965	136	8,538
MOS decrease	31,169	4,299	9,182	17,065	14,142

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	26,139	4,277	9,965	136	8,538
95%	12,496	3,166	5,154	90	5,315
75%	5,698	614	1,893	50	1,966
50%	-1,899	-460	-294	3	429
25%	-7,263	-1,237	-2,655	-112	-1,593
5%	-14,247	-2,007	-5,672	-4,561	-3,804
Minimum	-31,169	-4,299	-9,182	-17,065	-14,142
Mean	-1,300	-153	-263	-1,014	117
Std deviation	10,549	1,753	3,830	3,239	3,846
% days positive	42%	35%	45%	58%	55%
% days negative	58%	65%	55%	42%	45%

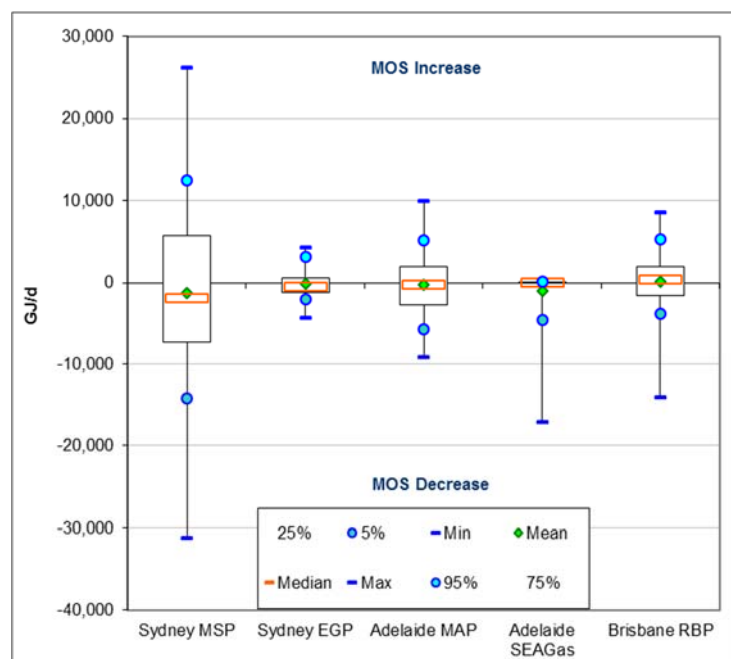
Figure 2 – Distribution of daily MOS quantities


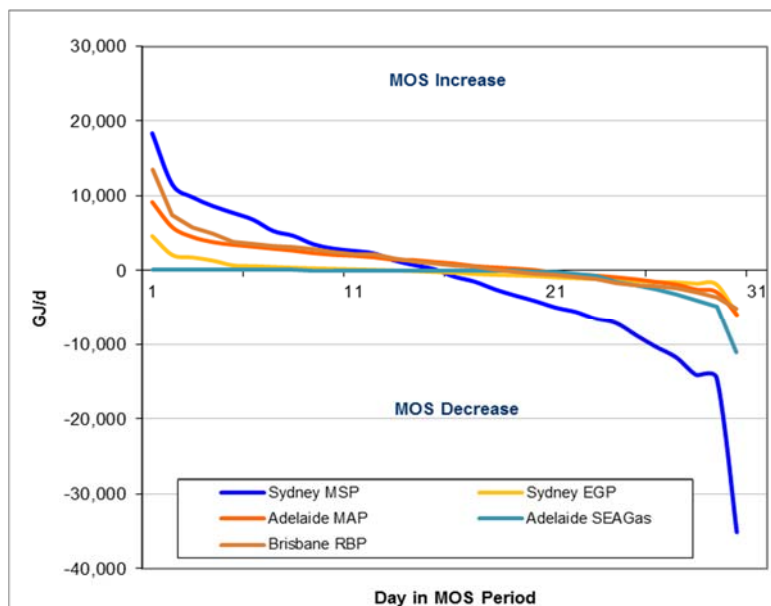
Table 3 – Daily MOS quantities (GJ/d) for October 2015

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	26,139	4,277	9,965	136	8,538
1	13,698	3,538	5,664	95	6,063
1	11,293	2,793	4,644	85	4,567
1	10,259	2,177	3,815	74	3,432
1	8,643	1,628	3,355	65	2,943
1	7,399	1,354	2,787	63	2,412
1	6,509	1,093	2,345	59	2,260
1	6,061	683	2,060	51	2,055
1	5,335	545	1,726	48	1,876
1	3,565	69	1,576	45	1,811
1	2,117	3	1,395	40	1,645
1	1,830	-100	917	34	1,348
1	918	-166	487	21	1,242
1	-492	-257	245	9	761
1	-1,349	-335	-66	7	625
1	-1,899	-460	-294	3	429
1	-2,631	-582	-398	1	41
1	-2,952	-698	-626	0	-252
1	-3,605	-777	-1,105	-2	-415
1	-4,569	-860	-1,368	-3	-609
1	-5,523	-903	-1,584	-6	-748
1	-6,410	-1,017	-2,059	-8	-1,042
1	-7,088	-1,176	-2,476	-81	-1,559
1	-7,437	-1,298	-2,834	-143	-1,627
1	-8,722	-1,373	-3,197	-497	-2,152
1	-9,313	-1,434	-3,599	-1,006	-2,443
1	-10,585	-1,531	-4,359	-1,517	-2,569
1	-11,835	-1,635	-4,634	-2,827	-3,247
1	-12,843	-1,781	-5,226	-3,533	-3,544
1	-15,650	-2,233	-6,118	-5,589	-4,064
1	-31,169	-4,299	-9,182	-17,065	-14,142

MOS Period November 2015

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	18,367	4,625	9,170	180	13,575
MOS decrease	35,148	5,977	5,965	11,001	5,095

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	18,367	4,625	9,170	180	13,575
95%	10,748	1,938	5,210	100	6,636
75%	4,370	358	2,592	46	3,041
50%	-319	-228	1,049	-1	795
25%	-6,262	-1,093	-627	-651	-1,022
5%	-14,356	-1,817	-2,735	-4,521	-3,314
Minimum	-35,148	-5,977	-5,965	-11,001	-5,095
Mean	-1,486	-285	1,059	-994	1,243
Std deviation	10,035	1,712	2,876	2,316	3,684
% days positive	50%	43%	67%	50%	60%
% days negative	50%	57%	33%	50%	40%

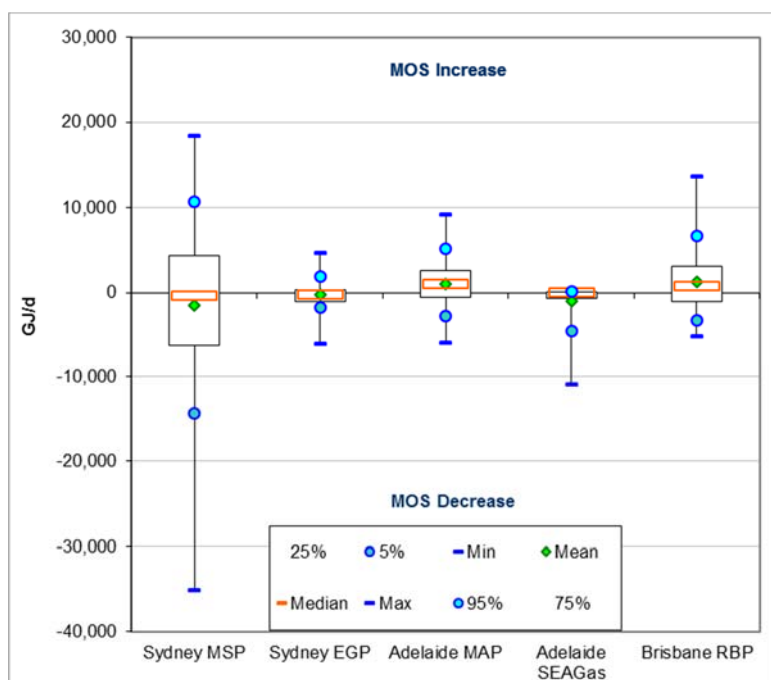
Figure 2 – Distribution of daily MOS quantities


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

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	18,367	4,625	9,170	180	13,575
1	11,506	2,084	5,797	106	7,383
1	9,821	1,759	4,492	93	5,724
1	8,643	1,340	3,822	78	4,941
1	7,729	695	3,461	71	3,775
1	6,818	591	3,204	64	3,515
1	5,304	486	2,932	56	3,339
1	4,653	377	2,676	48	3,107
1	3,521	299	2,340	40	2,843
1	2,935	233	2,102	32	2,441
1	2,640	168	1,984	22	2,253
1	2,299	96	1,773	16	2,160
1	1,359	13	1,462	5	1,638
1	733	-62	1,401	3	1,227
1	182	-172	1,156	0	918
1	-820	-285	941	-1	671
1	-1,486	-458	603	-2	555
1	-2,519	-561	429	-4	148
1	-3,345	-637	274	-6	-201
1	-4,095	-731	72	-101	-397
1	-4,966	-906	-296	-170	-600
1	-5,560	-1,020	-490	-417	-916
1	-6,496	-1,117	-672	-729	-1,057
1	-7,096	-1,297	-890	-1,547	-1,627
1	-8,756	-1,391	-1,162	-1,926	-1,959
1	-10,349	-1,524	-1,522	-2,562	-2,103
1	-11,773	-1,573	-1,874	-3,195	-2,429
1	-14,130	-1,749	-2,547	-4,064	-2,876
1	-14,540	-1,872	-2,889	-4,895	-3,673
1	-35,148	-5,977	-5,965	-11,001	-5,095