

MOS ESTIMATES REPORT: MOS PERIODS JUNE 2017, JULY 2017 & AUGUST 2017

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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: June 2017, July 2017 and August 2017.

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, Adelaide and Brisbane hubs

The Sydney and Adelaide STTM hubs commenced operations on 1 September 2010, while the Brisbane STTM hub commenced operations on 1 December 2011. Therefore the MOS estimate quantities are based on 'Method 3' for year 6 + of an STTM hub.² This means they are derived using the actual daily MOS allocation quantities for the periods June from 2012 to 2016; July from 2012 to 2016; and August from 2012 to 2016; for the following STTM pipelines:

- Moomba to Sydney Pipeline (MSP) and Eastern Gas Pipeline (EGP) – these pipelines supply gas to the Sydney STTM hub; and
- Moomba to Adelaide Pipeline (MAP) and SEA Gas pipeline (SEA) – these pipelines supply gas to the Adelaide STTM hub.
- Roma to Brisbane Pipeline (RBP) – the sole pipeline that supplies gas to the Brisbane STTM hub.

The input data collected from the previous years was combined to create a larger and more representative sample of MOS allocations.

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, pg 22*

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.³

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,⁴ 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.

³ 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.

⁴ The inter-quartile range is the range of values between the first (25%) and third quartiles (75%) of the distributions.

MOS Period June 2017

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	23,466	7,712	19,734	147	7,278
MOS decrease	34,633	2,723	7,023	21,049	12,474

Figure 1 – Curves of daily MOS quantities

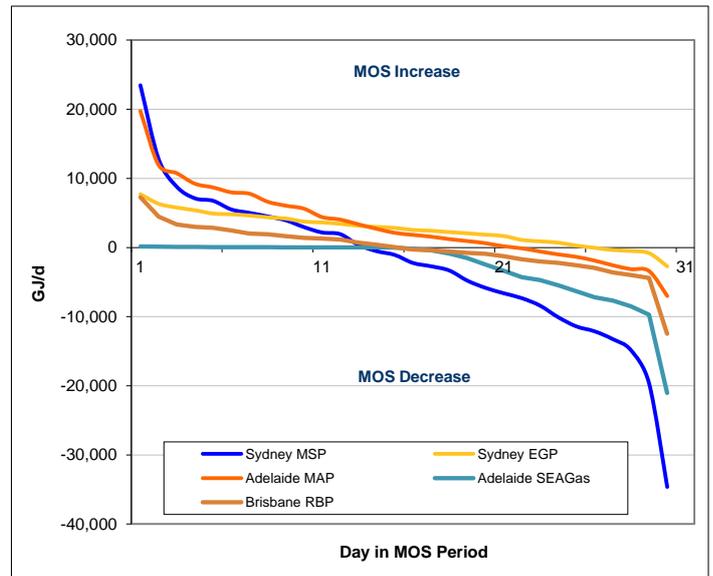


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	23,466	7,712	19,734	147	7,278
95%	10,999	6,082	11,407	109	3,953
75%	4,360	4,325	6,482	39	1,856
50%	-1,653	2,689	1,975	-92	-123
25%	-8,140	940	-465	-4,615	-1,947
5%	17,481	-678	-3,281	-9,172	-4,210
Minimum	34,633	-2,723	-7,023	21,049	12,474
Mean	-2,451	2,637	3,209	-2,768	-209
Std deviation	10,870	2,371	5,531	4,633	3,508
% days positive	43%	83%	70%	47%	50%
% days negative	57%	17%	30%	53%	50%

Figure 2 – Distribution of daily MOS quantities

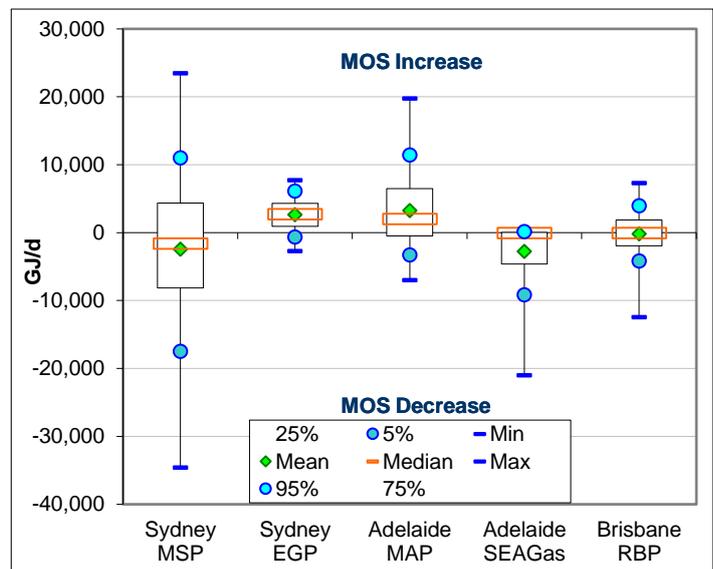


Table 3 – Daily MOS quantities (GJ/d) for June 2017

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	23,466	7,712	19,734	147	7,278
1	12,808	6,328	11,945	114	4,473
1	8,789	5,780	10,750	102	3,317
1	7,114	5,390	9,229	86	2,975
1	6,758	4,909	8,687	64	2,858
1	5,504	4,805	7,980	54	2,475
1	5,015	4,627	7,785	45	2,011
1	4,502	4,370	6,625	41	1,931
1	3,935	4,192	6,051	31	1,630
1	2,958	3,746	5,619	26	1,395
1	2,171	3,623	4,400	24	1,292
1	1,932	3,422	4,037	18	1,164
1	367	3,149	3,351	13	706
1	-525	2,978	2,708	7	404
1	-1,073	2,839	2,119	-2	57
1	-2,232	2,539	1,830	-182	-303
1	-2,717	2,428	1,567	-386	-400
1	-3,321	2,225	1,214	-867	-573
1	-4,796	2,051	930	-1,544	-793
1	-5,840	1,851	621	-2,474	-905
1	-6,619	1,659	175	-3,382	-1,276
1	-7,331	1,093	-124	-4,300	-1,723
1	-8,410	889	-578	-4,720	-2,021
1	-10,089	702	-998	-5,454	-2,225
1	-11,415	276	-1,355	-6,335	-2,583
1	-12,122	-45	-1,895	-7,205	-2,966
1	-13,251	-369	-2,568	-7,689	-3,609
1	-14,844	-503	-3,133	-8,497	-3,991
1	-19,638	-821	-3,402	-9,724	-4,389
1	-34,633	-2,723	-7,023	-21,049	-12,474

MOS Period July 2017

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	19,349	7,161	13,929	167	6,314
MOS decrease	33,198	3,462	9,513	15,100	11,400

Figure 1 – Curves of daily MOS quantities

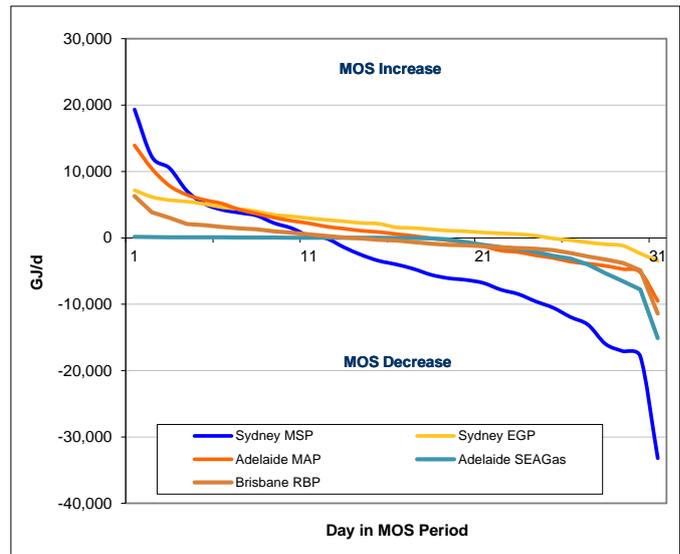


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	19,349	7,161	13,929	167	6,314
95%	11,352	5,927	9,127	106	3,433
75%	2,792	3,729	3,352	42	1,126
50%	-3,997	1,587	576	0	-386
25%	-9,022	437	-2,392	-1,902	-1,587
5%	-17,472	-1,774	-4,944	-7,175	-4,320
Minimum	-33,198	-3,462	-9,513	-15,100	-11,400
Mean	-3,769	1,982	902	-1,642	-530
Std deviation	10,248	2,562	4,870	3,269	3,050
% days positive	35%	77%	55%	52%	42%
% days negative	65%	23%	45%	48%	58%

Figure 2 – Distribution of daily MOS quantities

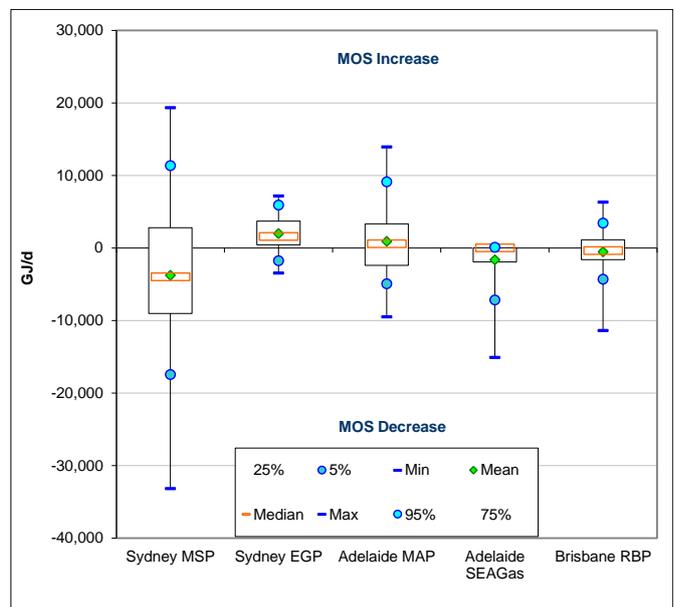


Table 3 – Daily MOS quantities (GJ/d) for July 2017

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	19,349	7,161	13,929	167	6,314
1	12,186	6,161	10,401	111	3,861
1	10,518	5,692	7,852	101	3,005
1	7,073	5,475	6,491	99	2,094
1	5,143	5,111	5,713	89	1,925
1	4,239	4,619	5,175	78	1,638
1	3,792	4,353	4,267	60	1,438
1	3,355	3,987	3,656	47	1,280
1	2,228	3,471	3,048	37	971
1	1,466	3,233	2,574	33	760
1	298	2,953	2,188	27	528
1	-84	2,710	1,699	23	297
1	-1,411	2,485	1,389	21	57
1	-2,563	2,236	1,071	8	-102
1	-3,453	2,125	879	4	-289
1	-3,997	1,587	576	0	-386
1	-4,678	1,476	281	-4	-639
1	-5,561	1,286	-60	-69	-865
1	-6,080	1,077	-376	-241	-1,041
1	-6,337	987	-714	-640	-1,117
1	-6,799	805	-1,257	-1,057	-1,258
1	-7,809	686	-1,906	-1,411	-1,431
1	-8,470	558	-2,144	-1,672	-1,540
1	-9,574	316	-2,639	-2,132	-1,633
1	-10,528	-96	-3,022	-2,694	-1,856
1	-11,936	-355	-3,591	-3,113	-2,299
1	-13,091	-690	-3,893	-4,018	-2,818
1	-15,985	-967	-4,218	-5,320	-3,276
1	-17,079	-1,185	-4,704	-6,556	-3,771
1	-17,864	-2,364	-5,183	-7,793	-4,868
1	-33,198	-3,462	-9,513	-15,100	-11,400

MOS Period August 2017

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	20,346	10,647	17,141	277	11,859
MOS decrease	21,807	3,899	10,860	13,425	7,384

Figure 1 – Curves of daily MOS quantities

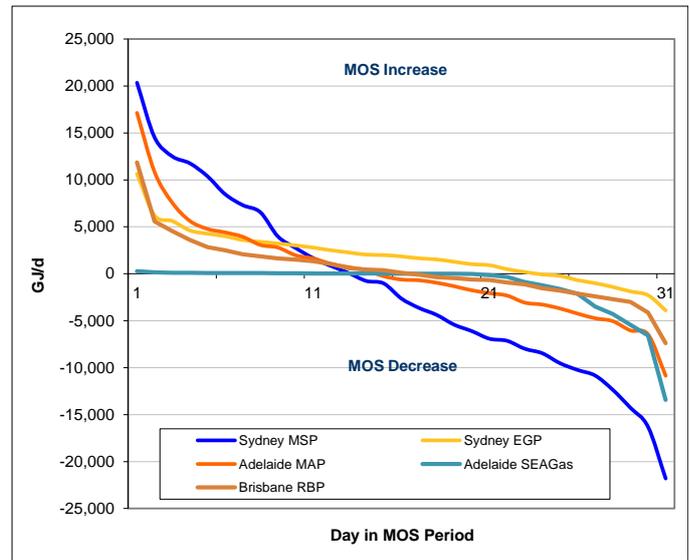


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	20,346	10,647	17,141	277	11,859
95%	13,510	5,907	9,197	128	5,065
75%	5,261	3,314	2,932	63	1,752
50%	-2,636	1,849	-614	16	106
25%	-8,226	57	-3,178	-1,055	-1,334
5%	-15,287	-2,085	-6,246	-6,009	-3,571
Minimum	-21,807	-3,899	-10,860	-13,425	-7,384
Mean	-1,570	1,859	273	-1,237	406
Std deviation	9,830	2,845	5,456	2,864	3,357
% days positive	42%	74%	45%	61%	52%
% days negative	58%	26%	55%	39%	48%

Figure 2 – Distribution of daily MOS quantities

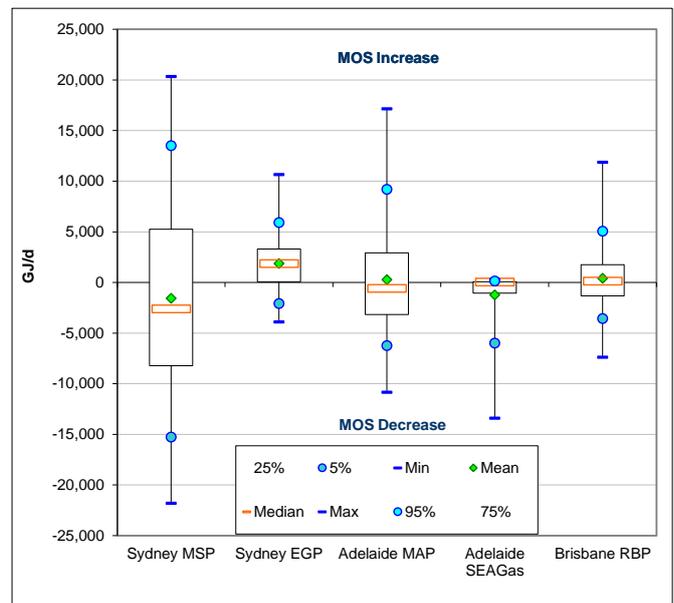


Table 3 – Daily MOS quantities (GJ/d) for August 2017

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	20,346	10,647	17,141	277	11,859
1	14,511	6,191	10,824	144	5,586
1	12,508	5,623	7,569	112	4,544
1	11,765	4,613	5,630	99	3,604
1	10,383	4,270	4,773	88	2,846
1	8,477	4,002	4,404	85	2,484
1	7,312	3,595	3,940	74	2,071
1	6,553	3,408	3,071	69	1,858
1	3,968	3,220	2,793	57	1,645
1	2,746	3,022	1,970	48	1,518
1	1,662	2,786	1,626	36	1,331
1	840	2,504	1,072	31	1,038
1	91	2,272	707	28	600
1	-762	2,041	382	26	457
1	-1,030	1,991	-265	23	382
1	-2,636	1,849	-614	16	106
1	-3,639	1,648	-694	8	-104
1	-4,378	1,529	-957	5	-359
1	-5,426	1,276	-1,330	0	-452
1	-6,107	1,021	-1,760	-10	-611
1	-6,919	909	-2,069	-136	-668
1	-7,139	491	-2,323	-340	-922
1	-7,984	187	-3,072	-882	-1,127
1	-8,468	-73	-3,284	-1,227	-1,540
1	-9,527	-222	-3,696	-1,618	-1,805
1	-10,244	-681	-4,243	-2,140	-2,106
1	-10,843	-1,006	-4,740	-3,498	-2,406
1	-12,363	-1,406	-5,048	-4,283	-2,718
1	-14,275	-1,880	-6,040	-5,434	-2,994
1	-16,299	-2,289	-6,451	-6,583	-4,147
1	-21,807	-3,899	-10,860	-13,425	-7,384