

# MOS ESTIMATES REPORT: MOS PERIODS SEPTEMBER 2017, OCTOBER 2017 & NOVEMBER 2017

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Version No: 1

Status: FINAL

Date: Select the publication date

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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 2017, October 2017 and November 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.<sup>1</sup>

### 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.<sup>2</sup> This means they are derived using the actual daily MOS allocation quantities for the periods September from 2012 to 2016; October from 2012 to 2016; and November 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.

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

<sup>2</sup> *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.<sup>3</sup>

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,<sup>4</sup> 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.

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<sup>3</sup> 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.

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

### MOS Period September 2017

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
<b>MOS increase</b>	25,212	10,121	12,849	196	6,739
<b>MOS decrease</b>	22,495	14,402	11,397	17,616	10,035

Figure 1 – Curves of daily MOS quantities

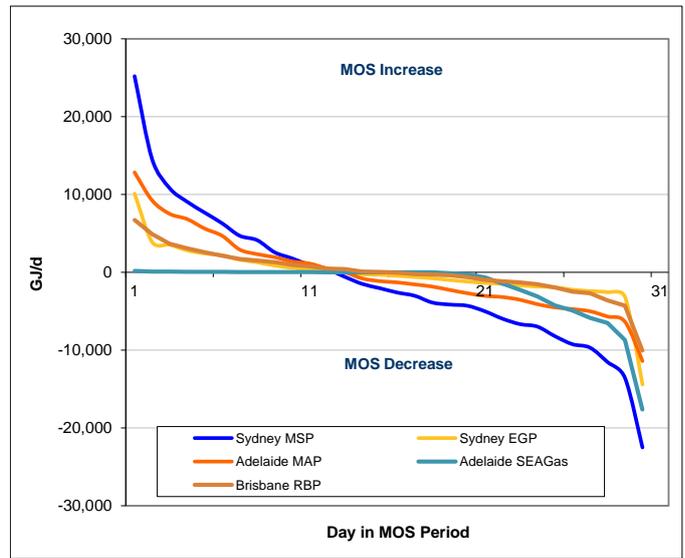
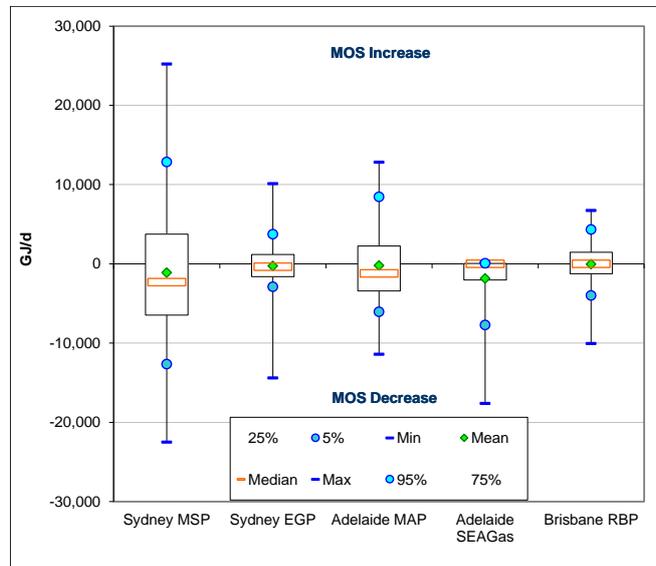


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	25,212	10,121	12,849	196	6,739
95%	12,874	3,741	8,476	91	4,353
75%	3,748	1,186	2,245	48	1,469
50%	-2,313	-375	-1,207	1	2
25%	-6,473	-1,615	-3,430	-2,045	-1,245
5%	-12,643	-2,881	-6,041	-7,713	-3,973
Minimum	-22,495	-14,402	-11,397	-17,616	-10,035
Mean	-1,100	-248	-195	-1,826	-31
Std deviation	9,200	3,736	5,146	3,815	3,043
% days positive	40%	43%	43%	53%	50%
% days negative	60%	57%	57%	47%	50%

Figure 2 – Distribution of daily MOS quantities



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

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	25,212	10,121	12,849	196	6,739
1	14,552	3,904	9,253	94	4,911
1	10,823	3,542	7,526	87	3,670
1	9,078	2,826	6,849	74	3,085
1	7,678	2,426	5,632	61	2,594
1	6,307	2,201	4,703	60	2,143
1	4,711	1,628	2,935	55	1,730
1	4,138	1,290	2,343	50	1,524
1	2,577	873	1,952	43	1,305
1	1,799	578	1,397	37	961
1	954	405	1,136	28	783
1	415	206	495	24	486
1	-571	28	14	17	417
1	-1,482	-244	-782	7	114
1	-2,033	-305	-1,127	1	46
1	-2,593	-444	-1,287	0	-43
1	-3,011	-597	-1,550	-1	-220
1	-3,879	-758	-1,826	-3	-299
1	-4,139	-981	-2,260	-102	-361
1	-4,288	-1,175	-2,675	-262	-624
1	-4,997	-1,359	-3,019	-643	-962
1	-5,948	-1,471	-3,171	-1,425	-1,150
1	-6,648	-1,664	-3,516	-2,252	-1,277
1	-6,970	-1,817	-4,090	-3,086	-1,526
1	-8,200	-1,926	-4,500	-4,258	-1,930
1	-9,232	-2,228	-4,716	-4,906	-2,465
1	-9,669	-2,401	-4,994	-5,856	-2,669
1	-11,520	-2,555	-5,671	-6,505	-3,596
1	-13,562	-3,148	-6,343	-8,701	-4,282
1	-22,495	-14,402	-11,397	-17,616	-10,035

### MOS Period October 2017

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
<b>MOS increase</b>	19,702	5,680	10,410	564	8,538
<b>MOS decrease</b>	27,473	10,263	9,182	17,065	14,142

Figure 1 – Curves of daily MOS quantities

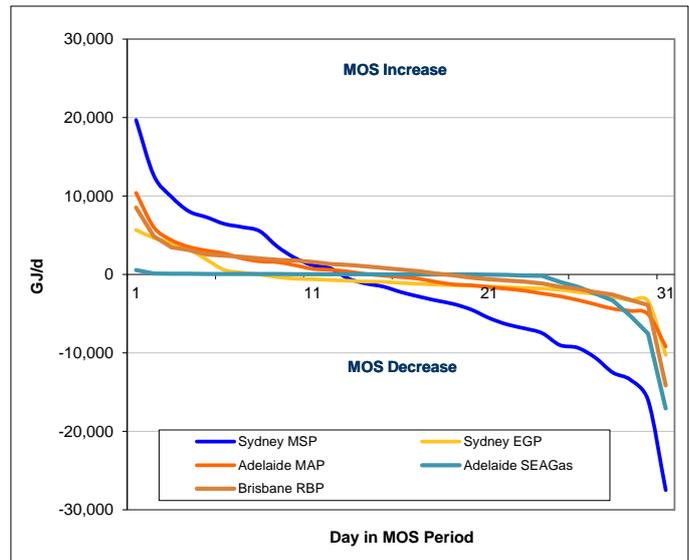
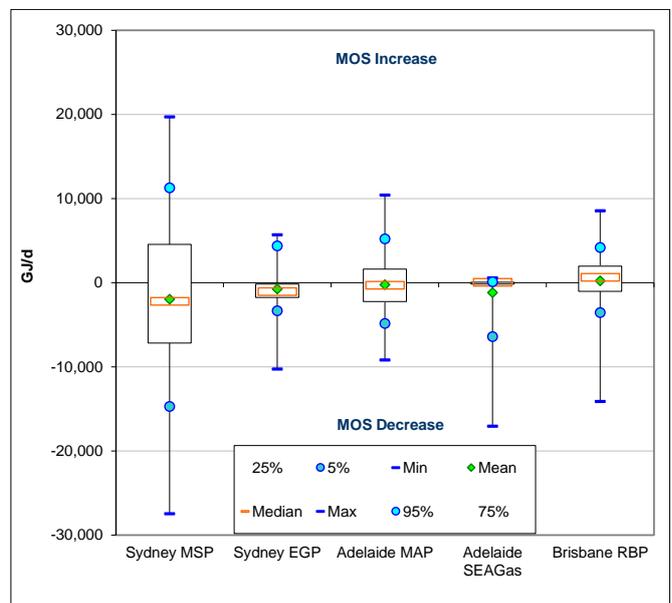


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	19,702	5,680	10,410	564	8,538
95%	11,278	4,362	5,215	117	4,172
75%	4,549	-167	1,630	63	1,967
50%	-2,236	-1,084	-327	20	625
25%	-7,167	-1,747	-2,239	-155	-1,024
5%	-14,710	-3,330	-4,847	-6,411	-3,564
Minimum	-27,473	-10,263	-9,182	-17,065	-14,142
Mean	-1,967	-768	-230	-1,192	220
Std deviation	9,373	2,827	3,684	3,427	3,651
% days positive	39%	23%	45%	65%	58%
% days negative	61%	77%	55%	35%	42%

Figure 2 – Distribution of daily MOS quantities



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

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	19,702	5,680	10,410	564	8,538
1	12,642	4,681	6,044	137	4,879
1	9,913	4,043	4,385	97	3,464
1	8,050	3,224	3,527	86	3,129
1	7,300	1,890	3,047	78	2,569
1	6,456	584	2,691	73	2,412
1	6,052	244	2,060	68	2,260
1	5,533	-4	1,684	64	2,058
1	3,565	-331	1,576	61	1,876
1	2,117	-530	1,183	53	1,773
1	1,185	-592	723	50	1,612
1	801	-703	603	46	1,348
1	-492	-789	386	40	1,218
1	-1,142	-884	70	33	1,051
1	-1,538	-926	-133	21	826
1	-2,236	-1,084	-327	20	625
1	-2,798	-1,176	-534	16	429
1	-3,308	-1,291	-943	10	140
1	-3,765	-1,360	-1,259	7	-111
1	-4,482	-1,422	-1,371	1	-415
1	-5,551	-1,519	-1,610	-6	-609
1	-6,350	-1,610	-1,820	-51	-748
1	-6,864	-1,712	-2,059	-132	-919
1	-7,470	-1,781	-2,419	-178	-1,129
1	-8,989	-1,941	-2,773	-935	-1,559
1	-9,326	-2,233	-3,240	-1,571	-1,813
1	-10,585	-2,487	-3,793	-2,428	-2,244
1	-12,492	-2,848	-4,359	-3,301	-2,569
1	-13,416	-3,266	-4,634	-5,289	-3,247
1	-16,003	-3,394	-5,060	-7,532	-3,880
1	-27,473	-10,263	-9,182	-17,065	-14,142

### MOS Period November 2017

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
<b>MOS increase</b>	18,367	4,573	21,336	584	13,575
<b>MOS decrease</b>	35,148	9,823	5,440	22,311	5,206

Figure 1 – Curves of daily MOS quantities

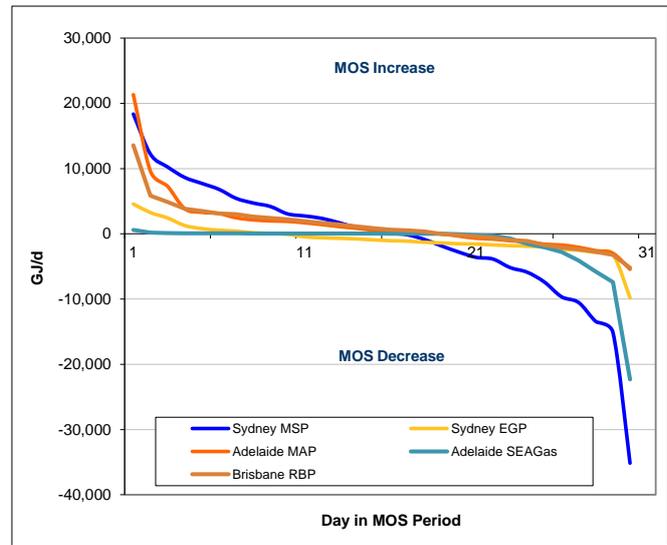
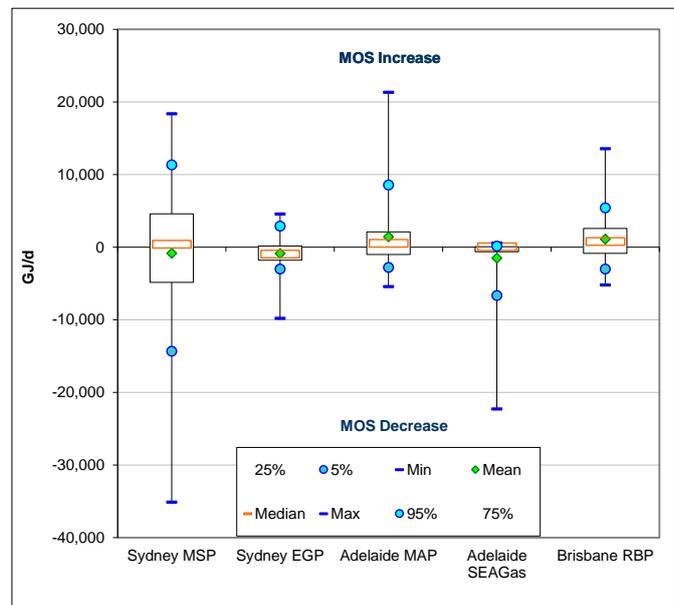


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	18,367	4,573	21,336	584	13,575
95%	11,326	2,884	8,551	138	5,420
75%	4,593	147	2,098	64	2,578
50%	391	-983	504	25	754
25%	-4,846	-1,782	-997	-614	-860
5%	-14,351	-3,005	-2,800	-6,680	-3,008
Minimum	-35,148	-9,823	-5,440	-22,311	-5,206
Mean	-845	-867	1,432	-1,521	1,105
Std deviation	9,915	2,429	4,765	4,351	3,433
% days positive	53%	30%	60%	60%	60%
% days negative	47%	70%	40%	40%	40%

Figure 2 – Distribution of daily MOS quantities



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

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	18,367	4,573	21,336	584	13,575
1	12,206	3,257	9,585	169	5,851
1	10,250	2,428	7,287	101	4,893
1	8,643	1,271	3,843	93	3,847
1	7,729	799	3,294	80	3,515
1	6,821	559	3,104	76	3,132
1	5,441	416	2,459	70	3,026
1	4,725	171	2,136	64	2,625
1	4,196	76	1,984	62	2,435
1	3,063	-63	1,908	56	2,231
1	2,739	-458	1,692	52	1,940
1	2,372	-606	1,416	46	1,679
1	1,717	-681	1,113	41	1,438
1	1,012	-772	856	38	1,152
1	652	-921	584	31	864
1	129	-1,044	423	19	644
1	-144	-1,117	303	10	545
1	-860	-1,297	125	4	359
1	-1,858	-1,391	-11	-4	-29
1	-2,792	-1,523	-347	-56	-201
1	-3,597	-1,563	-676	-177	-390
1	-3,868	-1,698	-806	-289	-600
1	-5,172	-1,810	-1,060	-722	-946
1	-5,886	-1,897	-1,233	-1,547	-1,105
1	-7,388	-2,035	-1,586	-2,050	-1,708
1	-9,644	-2,365	-1,715	-2,780	-2,083
1	-10,531	-2,519	-2,061	-4,100	-2,354
1	-13,437	-2,857	-2,577	-5,780	-2,739
1	-15,099	-3,126	-2,983	-7,416	-3,228
1	-35,148	-9,823	-5,440	-22,311	-5,206