MOS ESTIMATES FOR STTM MARKET TRIAL

Prepared By: STTM Establishment Project

Date: 22 January 2010

Document Ref: VEN_DOCS-#297953-V2B-MOS_ESTIMATES_FOR_STTM_MARKET_TRIAL.DOC

VERSION: 1.0

Disclaimer

Purpose - *This document has been prepared for the sole purpose of the short term trading market ('STTM') Market Trial in accordance with rule 397 of the Draft National Gas (Short Term Trading Market) Amendment Rules 2009 (STTM rules) and the STTM Market Trial Agreement,*

No Reliance *– This document contains data provided by third parties and might contain conclusions or forecasts and the like that rely on that data. While all reasonable care was taken in the preparation of this document, any use of this document is entirely at your risk. You should verify and check the accuracy, completeness, reliability and suitability of this document for any use to which you intend to put it and seek independent expert advice before using it, or any information contained in it.*

No Warranty - *Neither AEMO, nor any of AEMO's advisers consultants or other contributors to this document (or their respective associated companies, businesses, partners, directors, officers or employees), make any representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of the information contained in this document.*

No Liability *- To the maximum extent permitted by law, neither AEMO, nor any of its advisers, consultants or other contributors to this document (or their respective associated companies, businesses, partners, directors, officers or employees), shall have any liability (whether arising from negligence or otherwise) in respect of any use of the information (including any reliance on its currency, accuracy, reliability or completeness) contained in this document.*

© 2010 Australian Energy Market Operator. All Rights Reserved.

1 Introduction

In accordance with the STTM Market Trial Agreement and rule 397 of the Draft National Gas (Short Term Trading Market) Amendment Rules 2009 (STTM rules), AEMO is required to publish estimates of Market Operator Service (MOS estimates) for each STTM pipeline and each MOS period prior to the commencement of the related MOS period. In determining the MOS estimates for each MOS period, AEMO must use AEMO must use the data specified in Section 5.2 (b) of the draft STTM Procedures.

2 MOS period for the Market Trial

MOS periods are defined in section 5.1 of the STTM Procedures, and cover a minimum of 3 months.

The MOS period for the market trial is 4 Mar 2010 – 3 Jun 2010.

3 MOS estimates for the Market Trial

The MOS estimates for the market trial are derived from historical Natural Gas Services Bulletin Board pipeline flow data ('BB pipeline flow data') for the period 4 March 2009 – 3 June 2009 for the following STTM pipelines (see paper titled "Indicative MOS estimates derived from Bulletin Board data (Sep 08 – Nov 09)", VENDocs #295738", for more details).

- Moomba to Adelaide pipeline (MAP) and the SEA Gas pipeline (SEA Gas) connected to the Adelaide hub. The BB pipeline flow data has been adjusted to exclude gas fired power generation demand upstream of the Adelaide hub; and
- Moomba to Sydney pipeline (MSP) and the Eastern Gas Pipeline (EGP) supplying gas to the Sydney hub.

MOS estimates for each STTM pipeline and each gas day are calculated as follows:

Daily MOS estimate = actual daily pipeline flow – forecast daily pipeline flow (or intraday nomination*)

*Intraday nominations were used in place of forecast flows if the data was available.

Positive MOS estimates indicate the requirements for a forecast increase in MOS whereas negative MOS estimates indicate the requirements for a forecast decrease in MOS.[1]

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

Rule 397(1)(b) of the STTM rules specifies that AEMO must publish its estimate of the range of daily quantities of MOS (by way of increase and decrease) 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 showing the summary statistics of the distributions of MOS quantities, including a measure of central location (median), two measures of dispersion/spread (the range and the inter-quartile range).[2] The means, standard deviations, and the 5 and 95

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

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

© 2010 Australian Energy Market Operator. All Rights Reserved.

percentiles of the distributions are also shown together with the proportions of days in the MOS period with positive and negative MOS estimates.[3]

- Table 3 showing the daily MOS quantities sorted in descending order and the number of day(s) associated with each estimated quantity.
- Figure 1 displaying the curves of daily MOS estimates sorted in descending order from the highest to the lowest values.
- Figure 2 showing the Box Plots which provide a graphical summary of the data sets and are useful tools for comparing MOS estimates for the different STTM pipelines.

Table 1 – Maximum estimated MOS quantity (GJ/d)

	Sydney EGP	Sydney MSP	Adelaide MAP	Adelaide SEA Gas
MOS increase	43,400	25,900	20,987	32,175
MOS decrease	10,400	39,700	13,561	35,612

Figure 1 – MOS estimate curves

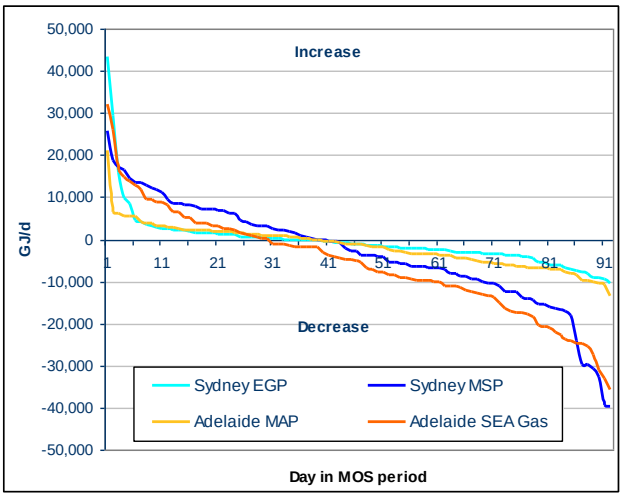
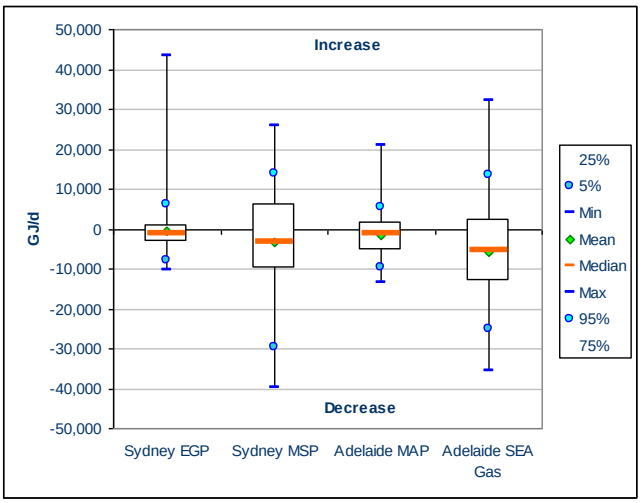


Table 2 – Summary statistics of daily MOS estimates[4]

	Summary statistics GJ/d			
	Sydney EGP	Sydney MSP	Adelaide MAP	Adelaide SEA Gas
Maximum	43,400	25,900	20,987	32,175
95%	6,245	13,905	5,335	13,349
75%	1,025	6,075	1,510	2,228
50%	-1,250	-3,200	-1,148	-5,352
25%	-3,425	-10,150	-5,359	-13,246
5%	-7,945	-29,800	-9,778	-25,080
Minimum	-10,400	-39,700	-13,561	-35,612
Mean	-533	-3,435	-1,711	-5,948
Std deviation	6,908	12,594	4,990	12,552
% days positive	38%	42%	40%	33%
% days negative	62%	58%	60%	67%

Figure 2 – Distribution of daily MOS estimates



[3] Positive MOS estimates indicate an increase in MOS whereas negative MOS estimates indicate a decrease in MOS.

[4] The minimum value in Table 3 represents the 'maximum' forecast value for MOS decrease.

© 2010 Australian Energy Market Operator. All Rights Reserved.

Table 3 – Daily MOS estimates (GJ/d)

No of days	Sydney EGP	Sydney MSP	Adelaide MAP	Adelaide SEA Gas	No of days	Sydney EGP	Sydney MSP	Adelaide MAP	Adelaide SEA Gas
1	43,400	25,900	20,987	32,175	1	-1,300	-3,700	-1,187	-5,415
1	29,300	18,700	6,598	26,234	1	-1,500	-3,900	-1,448	-6,730
1	15,900	17,100	5,991	16,309	1	-1,500	-3,900	-1,709	-7,147
1	9,700	16,600	5,573	14,825	1	-1,600	-4,200	-1,816	-7,652
1	8,500	14,400	5,340	13,876	1	-1,800	-4,300	-1,847	-7,709
1	4,400	13,500	5,330	12,919	1	-1,900	-5,400	-2,448	-8,376
1	4,100	13,500	4,277	11,706	1	-1,900	-5,500	-2,703	-8,614
1	3,500	12,900	3,761	9,539	1	-2,000	-5,700	-2,899	-9,102
1	3,200	12,200	3,671	9,305	1	-2,000	-5,700	-3,281	-9,162
1	2,700	11,700	3,158	8,936	1	-2,100	-6,400	-3,377	-9,351
1	2,600	11,200	3,018	8,733	1	-2,100	-6,500	-3,384	-9,693
1	2,500	9,600	2,756	8,287	1	-2,200	-6,600	-3,425	-9,892
1	2,100	8,600	2,679	6,633	1	-2,400	-6,900	-3,575	-9,965
1	2,100	8,500	2,534	6,342	1	-2,400	-6,900	-3,601	-10,045
1	2,000	8,100	2,217	5,218	1	-2,500	-6,900	-3,763	-10,204
1	1,700	8,000	2,169	5,006	1	-2,500	-7,200	-3,939	-11,046
1	1,600	7,800	2,137	3,786	1	-2,800	-8,000	-3,965	-11,189
1	1,500	7,300	2,088	3,759	1	-3,000	-8,100	-4,471	-11,217
1	1,400	7,300	2,060	3,678	1	-3,000	-8,900	-4,599	-11,467
1	1,400	7,200	1,963	3,254	1	-3,000	-8,900	-4,604	-12,007
1	1,200	6,900	1,910	2,999	1	-3,200	-9,400	-4,656	-12,615
1	1,200	6,800	1,850	2,638	1	-3,300	-9,600	-5,016	-12,683
1	1,100	6,300	1,711	2,438	1	-3,400	-10,100	-5,328	-13,208
1	1,000	6,000	1,443	2,158	1	-3,500	-10,300	-5,453	-13,360
1	600	4,600	1,346	1,558	1	-3,500	-10,600	-5,666	-13,875
1	600	4,100	1,258	1,292	1	-3,600	-11,000	-5,762	-15,278
1	500	3,400	1,241	687	1	-3,700	-12,300	-6,059	-16,402
1	500	3,200	1,029	474	1	-3,800	-12,300	-6,261	-16,996
1	400	3,100	849	293	1	-3,900	-12,400	-6,385	-17,276
1	300	3,000	792	43	1	-4,200	-13,700	-6,636	-17,596
1	200	2,600	766	-1,075	1	-4,300	-14,100	-6,670	-17,902
1	100	2,300	717	-1,089	1	-4,500	-14,400	-6,766	-18,474
1	0	2,300	697	-1,233	1	-5,500	-15,400	-6,822	-20,428
1	0	1,700	605	-1,368	1	-5,500	-15,600	-6,901	-20,672
1	0	1,400	483	-1,666	1	-6,000	-16,200	-7,158	-21,219
1	-100	900	274	-1,688	1	-6,300	-16,300	-7,237	-21,960
1	-200	600	208	-1,745	1	-6,300	-16,900	-7,256	-22,610
1	-300	200	-48	-1,759	1	-6,800	-17,100	-7,688	-23,733
1	-300	0	-329	-1,920	1	-7,300	-18,200	-8,237	-23,952
1	-500	-300	-441	-3,185	1	-7,500	-24,000	-8,371	-24,746
1	-600	-400	-490	-3,791	1	-7,900	-29,800	-9,731	-24,781
1	-700	-600	-551	-4,141	1	-8,000	-29,800	-9,835	-25,446
1	-800	-800	-870	-4,322	1	-9,100	-30,800	-10,063	-27,475
1	-900	-2,300	-1,004	-4,655	1	-9,100	-32,800	-10,614	-31,172
1	-1,100	-2,700	-1,101	-4,742	1	-9,500	-39,300	-10,756	-33,215
1	-1,200	-2,700	-1,108	-5,290	1	-10,400	-39,700	-13,561	-35,612

© 2010 Australian Energy Market Operator. All Rights Reserved.