ELECTRICITY INDUSTRY ACT

ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES



# Power System Operation Procedure:

# Medium Term Projected Assessment of System Adequacy (MT PASA)

**Commencement:** This Market Procedure is to have effect from 8:00am (WST) on the same date as the Wholesale Electricity Market Rule, in which this procedure is made in accordance with, commences.

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## 1. MEDIUM TERM PROJECTED ASSESSMENT OF SYSTEM ADEQUACY (MT PASA)

Medium Term Projected Assessment of System Adequacy ('MT PASA') details procedures that System Management and Rule Participants must follow in the preparation and publication of the Medium Term Projected Assessment of System Adequacy report.

## 2. RELATIONSHIP WITH MARKET RULES

1. This Procedure has been developed in accordance with, and should be read in conjunction with clause 3.16 of the Wholesale Electricity Market (WEM) and Rules (Market Rules).

2. References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as at 1 November 2008. These references are included for convenience only, and are not part of this procedure.

3. In performing its functions under the Market Rules, System Management may be required to disclose certain information to Market Participants and Network Operators. In selecting the information that may be disclosed, System Management will utilize best endeavours and act in good faith to disclose only the information reasonably required by the application of the Market Rules.

## 3. SCOPE

The MT PASA Procedure details processes that Rule Participants and System Management must follow in conducting Medium Term PASA studies to assist System Management in setting Ancillary Service Requirements over the year, outage planning for Registered Facilities, assessing the availability of Facilities providing Capacity Credits and other capacity, amongst other functions associated with the management of Power System Security and Power System Reliability in the SWIS. The Medium Term PASA studies are based on a three year planning horizon.

Similarly, Short Term Projected Assessment of System Adequacy studies are derived from a common formulation, but is instead based on a shorter three week planning horizon.

## 4. ASSOCIATED PROCEDURES AND OPERATION STANDARDS

The following Power System Operation Procedures are associated with this MT PASA procedure:

a. Power System Operation Procedure - ST PASA;
b. Power System Operation Procedure – Power System Security; and
c. Power System Operation Procedure – Facility Outages.

## 5. TIMETABLE FOR MT PASA

1. The timing requirements that System Management must follow when completing and reviewing a Medium Term PASA study, the provision of this information to the Independent Market Operator ('IMO'), and the IMO's obligation to publish the relevant information are defined in the Market Rules **[MR 3.16.1, MR 3.16.2** and **MR 3.16.9]**.

2. System Management will prepare and maintain an internal process detailing how and by which method the MT PASA results are transmitted to the IMO.

## 6. INFORMATION REQUIREMENTS

### 6.1 General Requirements

1. System Management may direct Rule Participants in writing from time to time, to provide the information specified in the Market Rules **[MR 3.16.4]**. A Rule Participant must respond to this request within 2 weeks following the date it was issued.

2. Rule Participants must use reasonable endeavours to provide System Management with a reasonable estimate of the amount of demand side management capacity that can be provided.

3. With the exception of demand side management, where information is provided by Network Operators, Market Generators and Market Customers this information must be provided via the System Management Market Information Technology ('SMMITS') web interface system, unless otherwise directed.

4. Rule Participants must provide demand side management related information to System Management via email, unless otherwise directed.

### 6.2 Use of information developed by System Management

1. System Management may utilise its own information in certain circumstances in substitution of information submitted by Rule Participants in accordance with the Market Rules **[MR 3.16.6]**, and shall document reasons for doing so in the MT PASA report.

2. In addition to information provided by a Rule Participant, System Management may use information that it develops pursuant to the Market Rules **[MR 3.16.5]**, and any other information System Management considers necessary.

### 6.3 Additions and Omissions in Participant Data

1. System Management shall review information provided by Rule Participants, and where necessary, seek additional information or clarifications. Rule Participants must provide any additional information or clarifications when requested by System Management in accordance with the Market Rules **[MR 3.16.8** and **MR 3.16.8A]**.

2. The participant must respond to this request in the earliest time practical.

# 7. MT PASA LOAD FORECAST

## 7.1 General

1. System Management must prepare an aggregate forecast of peak system MW load for the SWIS and, where necessary each region of the SWIS, for each day of the MT PASA planning horizon using System Management's modelling and forecasting system.

2. Peak system load is defined as the peak MW demand on the transmission network, which is represented by the sum of the peak consumer demand at the network off-take points plus the distribution and transmission losses occurring within the network at that time.

3. In preparing the MT PASA forecast, System Management must consider all information provided by Participants as well as:

    a. seasonal, weekly and daily patterns of electricity usage monitored by System Management; and
    b. other sources of forecast information deemed relevant by System Management.

## 7.2 MT PASA Load Forecast

System Management must ensure that the results of a Medium Term PASA study includes, for the Medium Term PASA Planning Horizon, the peak load forecasts for scenarios stipulated in the Market Rules **[MR 3.16.9(a)** and **MR 3.16.9(b)]**.

1. System Management must forecast for each day of the MT PASA planning period:

    a. a "mean" forecast of system load showing the expected daily peak for each SWIS region and for the SWIS as a whole;
    b. a "mean plus one standard deviation" forecast of the expected daily peak load for each region and for the SWIS; and
    c. a "mean plus two" standard deviation forecast of the expected daily peak load for each region and for the SWIS.

# 8. MT PASA PLANNING CRITERIA

## 8.1 Generation Security

System Management must allow for sufficient generation to be available to cater for forced outages of generation facilities. The value of unplanned unavailability will be the loss of the largest total generation, remaining after outages have been accounted for, resulting from a single contingency event.

## 8.2 Transmission security

System Management must adjust total generation to take account of any constraints on the transmission system, after allowing for all credible contingencies specified in the PSOP: Power System Security and maintain operations within the boundaries of the Technical Envelope.

## 8.3 Ancillary Services

System Management must allow for sufficient Ancillary Services and Ready Reserve generation to be available, taking into account the non-availability of facilities that provide Ancillary Services to meet the criteria specified in the PSOP: Power System Security and maintain operations within the boundaries of the Technical Envelope.

## 8.4 Demand Management

System Management must prepare the MT PASA based on a reasonable forecast of the availability of all Interruptible Loads.

# 9. MEDIUM TERM PASA RESERVE MARGIN

## 9.1 General

1. System Management must assess the "Medium Term Reserve Margin" for each day of the MT PASA planning horizon.

2. The Medium Term Reserve Margin is the spare generation capacity available after the forecast peak load has been met, all planned outages and forced outage allowance been taken into account, and all security standards and Ancillary Service requirements have been satisfied.

## 9.2 Assessment of Reserve Margin

System Management must estimate the applicable Reserve Margin by forecasting:

a. the capacity of the total Generation after allowing for Planned, Scheduled and any other outages that System Management has knowledge of or has been informed of, less
b. the mean plus two standard deviation system load forecast, less
c. the effects of any Generation being constrained due to insufficient transmission capacity remaining in service, less
d. an allowance for that quantity of generation capacity required to operate as an Ancillary Service, to maintain the frequency standards specified in the PSOP: Power System Security, less
e. as quantified within the planning criteria set out in section 8 of this procedure.

# 10. CONTENT OF MEDIUM TERM PASA STUDY RESULTS REPORT

## 10.1 General

1. The MT PASA Study Results Report (the MT PASA report) prepared and published each month by System Management must set out the forecast value of the Medium Term Reserve Margin, the data set out in the Market Rules, and other data relevant to the medium term security assessment of the SWIS.

2. Where practical, the information should be presented in graphical form in SMMITS and cover each period of a three year MT PASA planning horizon.

## 10.2 Aggregate forecast information on MT PASA

System Management must include in the MT PASA report the information set out in the Market Rules **[MR 3.16.9]** and the additional information listed in table 1 below for each day of the MT PASA planning horizon.

| **Table 1** | | |
|---|---|---|
| | **MT PASA REPORTING PARAMETERS** | **DESCRIPTION** |
| 1 | MT Reserve Margin | The quantity defined in Market Rule **[MR 3.16.9(d)]** and being for each study period, the mean plus 2 standard deviation peak load forecast, minus the total forecast available generation capacity. |
| 2. | Peak Load Forecasts | The peak load estimate for the SWIS for the following scenarios:<br>i. mean;<br>ii. mean plus one standard deviation; and<br>iii mean plus two standard deviations. |
| 3. | Forecast total available Generation Capacity | The total available Generation Capacity forecast to be available over the planning horizon, after taking account of planned outages. |
| 4. | Forecast total available Demand Management Capacity | The total available Demand Side Management capacity available at the time of the daily peak. |
| 5. | Transmission Constrained Capacity | Any generation capacity output constrained at the time of peak SWIS demand as a consequence of transmission limitations. |
| 6. | Provision for unplanned loss of Generation Facilities | The provision for unplanned un-availability of generation facilities (forced outages). |
| 7. | Ancillary Services | The quantity of generation capacity diverted to serve as an ancillary service, and not available for energy supply purposes. |
| 8. | Negative Capacity Planning Margin | Highlighting of periods when the MT Capacity Planning Margin is negative. |

## 10.3 Explanatory Information to be included with MT PASA

1. System Management may include as an attachment to the MT PASA report additional information to assist Participants in understanding and utilising the information in MT PASA.

2. System Management should use reasonable endeavours to provide explanation of changes where there are significant differences in the level of Reserve Margin between consecutive MT PASA reports.

# 11. AGGREGATION OF INFORMATION

In publishing the MT PASA report, System Management will endeavour to ensure that as much as practical, individual participant's data submitted to System Management cannot be identified. Information will be published in aggregate form for each class of Market Participant.

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