

ELECTRICITY INDUSTRY ACT

**ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY
MARKET) REGULATIONS 2004**

WHOLESALE ELECTRICITY MARKET RULES

**IMS Interface Market Procedure – Network Operators and
AEMO**

VERSION HISTORY

| | |
|--------------------------------------|---|
| System Management Transition Date | First release to fulfil requirements for IMS Market Procedure |
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TABLE OF CONTENTS

| | |
|--|----|
| RELATIONSHIP WITH MARKET RULES | 4 |
| RELATED DOCUMENTS | 4 |
| COMMENCEMENT | 4 |
| 1 SCOPE | 5 |
| 2 TRANSFER OF INFORMATION | 5 |
| 2.1 GENERAL | 5 |
| 2.2 PROVISION OF INFORMATION..... | 5 |
| 3 IMS INTERFACE MARKET PROCEDURE CHANGE PROCESS..... | 9 |
| 4 COMMUNICATION AND CONTROL SYSTEM DIRECTIONS | 9 |
| 4.1 Where a timeframe cannot be agreed, senior managers from AEMO and the Network Operator must meet to agree a timeframe.PROVISION OF MARKET PARTICIPANT SCADA..... | 10 |
| 5 COMMUNICATION AND CONTROL SYSTEM REQUIREMENTS..... | 10 |

RELATIONSHIP WITH MARKET RULES

1. This IMS Interface Market Procedure – System Management and Network Operators (Procedure) has been developed in accordance with, and should be read in conjunction with, the Wholesale Electricity Market Rules (Market Rules).
2. References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as of the System Management Transition Date. These references are included for convenience only, and are not part of this procedure.
3. This Procedure is subservient to the Market Rules. In the event of conflict between this Procedure and the Market Rules or any other document, the order of precedence is as set out in the Market Rules **[MR 1.5.2]**
4. This Procedure may include explanatory text, including quotations from the Market Rules. Such explanatory text is for information only, does not form part of the Procedure, and is italicised and contained in a rectangular box.
5. A word or phrase defined in the Electricity Industry Act 2004, or in the Regulations or Market Rules made under that Act, has the same meaning when used in this Procedure.

RELATED DOCUMENTS

1. This Procedure is related to, and should be read in conjunction with, the following documents:
 - a. SWIS Technical Rules and Operating Standards
 - b. PSOP: Dispatch
 - c. PSOP: Power System Security
 - d. PSOP: Communications and Control Systems.
 - e. PSOP: Operational Data Points for Generating Plant
 - f. PSOP: Operational Data Points for Non-Western Power Networks, Substations and Loads
 - g. PSOP: Monitoring and Reporting Protocol
 - h. Any other Market Procedure (including Power System Operating Procedures) referred to in this Procedure.

COMMENCEMENT

1. This Procedure has effect from the System Management Transition Date.

1 SCOPE

1. This Procedure has been developed in accordance with clause **[MR 2.36A.1]** and **[MR 2.36A.5]** of the Market Rules and documents:
 - a. The process to be followed by Network Operators and AEMO to provide each other with information;
 - b. The process that must be followed when this Procedure is inadequate to enable either Network Operators or AEMO to comply with an obligation to provide information to the other;
 - c. The process for System Management to issue a direction to a Network Operator regarding the installation, upgrade, modification or replacement of control systems, and the communication protocols around this; and
 - d. The communications and control system requirements to enable System Management to remotely monitor performance of a Network.
2. This Procedure covers all Networks forming part of the power system (SWIS) and where relevant, including Scheduled Generators, Non-Scheduled Generators, Demand-Side Programmes, Dispatchable Loads and Interruptible Loads connected to those Networks.

2 TRANSFER OF INFORMATION

The procedures below are intended to reflect the arrangements that are in place as at the System Management Transition Date. This Procedure will be refined from time to time as per the Power System Operating Procedure Change Process, for example where AEMO introduces new systems.

2.1 GENERAL

There are a number of Market Rule obligations that require provision of information between a Network Operator and AEMO, for example Network Outage requests under **[MR 3.18.5B]**. This Procedure is intended to predominantly capture data-related information transfers that are not detailed in other Market Procedures (including Power System Operating Procedures) or in the Market Rules themselves. Table 2.3 identifies some of the other information transfer requirements that are captured in other Market Procedures (including Power System Operating Procedures).

2.2 PROVISION OF INFORMATION

Table 2.1 describes the categories of information that are required, the form, manner and timeframe required for a Network Operator to provide information to AEMO to access the information, and the relevant Market Rule references that require the information.

Where Table 2.1 makes reference to accessing a system or a tool *at all times*, this is to be read as being subject to that system or tool being available for use (e.g. not on outage).

Table 2.1 – Information Requirements

| Category | Form, Manner and Timeframe | Rule references |
|-------------------------------------|---|--|
| Realtime SCADA data | Access to Western Power EMS at all times | 2.13.6, 2.13.6A, 2.13.6B, 2.13.6C, 2.15.6A, 2.15.6B, 2.35.2, 3.2.2, 3.2.7, 3.3, 3.4, 3.5, 3.18.2, 3.18.11, 3.19.6, 3.20.2, 4.25.2, 7.6, 7.6A, 7.10.4, 7.11.5, 7A.3.7, 7A.3.7A, 7A.3.15, 7B.3.6, 7B.4 |
| Transmission network modelling data | Access to Western Power EMS at all times | 2.13.6, 2.13.6A, 2.13.6B, 2.13.6C, 2.15.6A, 2.15.6B, 2.35.2, 3.2.2, 3.2.7, 3.3, 3.4, 3.5, 3.18.2, 3.18.11, 3.19.6, 3.20.2, 4.25.2, 7.6, 7.6A, 7.10.4, 7.11.5, 7A.3.7, 7A.3.7A, 7A.3.15, 7B.3.6, 7B.4 |
| Transmission network topology | <p>Access to Western Power EMS at all times</p> <p>Access to Western Power GIS systems at all times</p> <p>Electronic file transfer containing current transmission network geographic topology including:</p> <ul style="list-style-type: none"> • Geographic coordinates of all 66kV, 132kV, 220kV and 330kV substations in the SWIS • Geographic coordinates of all 66kV, 132kV, 220kV and 330kV transmission line structures in the SWIS <p>This file must be emailed to AEMO Market Operations: wa.operations@aemo.com.au per the following timeframes:</p> <ul style="list-style-type: none"> • Full list as soon as practicable after 1st of July 2016 • On change, no later than 5 business days after a network element has been added, removed or modified • An updated file emailed on request by AEMO within 5 business days | 2.13.6, 2.13.6A, 2.13.6B, 2.13.6C, 2.15.6A, 2.15.6B, 2.35.2, 3.2.2, 3.2.7, 3.3, 3.4, 3.5, 3.18.2, 3.18.11, 3.19.6, 3.20.2, 4.25.2, 7.6, 7.6A, 7.10.4, 7.11.5, 7A.3.7, 7A.3.7A, 7A.3.15, 7B.3.6, 7B.4 |
| Historical SCADA data | Access to Western Power historical SCADA data systems at all times | 2.13.3A, 2.13.6, 2.13.6A, 2.13.6B, 2.13.6C, 2.13.6D, 2.13.6E, 2.13.6G, 2.13.6H, 2.13.9A, 2.13.9B, 2.13.9C, 2.15.6A, 2.15.6B, 2.16.2, 2.16.7, 2.30B.3, 3.9.9, 3.13, 3.14, 3.15, 3.16.9, 3.17.9, |

| | | |
|---------------------------|---|---|
| | | 3.18.11, 3.19.6, 3.20.2, 3.21, 3.23.1(g), 4.10.1(e)iv, 4.25.2, 4.26.5, 4.28A.2, 6.13.1, 6.15.3, 6.17, 6.17.6A, 7.1(c), 7.1(d), 7.2, 7.6, 7.6A, 7.7.5B, 7.10.4, 7.11.5, 7.12.1, 7.13.1, 7.13.1C, 7.13.2, 7A.3.7, 7A.3.7A, 7A.3.15, 7B.3.6, 7B.4, 10.5.1(y) |
| SCADA control | Access to Western Power EMS at all times | 2.35.2, 3.3, 3.4, 3.5, 4.25.2, 7.6, 7.6A, 7.8.1, 7B.3.6, 7B.4 |
| Equipment Limit data | Access to Western Power EMS at all times Access to Western Power limit management systems at all times | 3.2.2, 3.2.7, 3.3, 3.4, 3.5, 7.12.1 |
| Technical Rule Exemptions | Electronic list of current exemptions, emailed to wa.operations@aemo.com.au per the following timeframes: <ul style="list-style-type: none"> • Full list as soon as practicable after 1st of July 2016 • On change, no later than 5 business days after an exemption has been added, removed or modified • On request by AEMO within 5 business days | 3.2.5(e), 7.12.1 |
| Investigation data | Access to Western Power EMS at all times Access to Western Power historical SCADA data systems at all times Access to Western Power protection and disturbance systems at all times | 3.8 |

Table 2.2 provides additional details around the required level of access for each of the systems identified in Table 2.1.

Direct access to Network Operator systems is required by AEMO to support transition of System Management functions from Western Power. Direct access is expected to be replaced with information provision via electronic interfaces (e.g. ICCP, Web Services, Limit Notification, etc.) once new systems are progressively introduced. As such, Table 2.2 will substantially be modified as new systems come online.

Table 2.2 – Additional System Details

| System | Details |
|-------------------|---|
| Western Power EMS | For all users specified by System Management - access to displays to and tools in order to: |

| | |
|--|---|
| | <ul style="list-style-type: none"> • monitor the transmission network including <ul style="list-style-type: none"> ○ transmission network connectivity ○ transmission network equipment status ○ transmission network parameters (including MW, MVar, amps, kV, PF, tap position) ○ status of transmission network voltage management devices (e.g. capacitors, reactors, SVC's, SR's) ○ associated calculated values • monitor and control generation plant registered in the market • monitor and control system frequency • monitor transmission network outages • monitor transmission fault levels (where applicable) • view transmission network limits • monitor the status of special protection schemes • monitor the status of the communications and secondary equipment associated with the transmission network • monitor the status of the EMS itself • perform and store system security studies |
| Western Power historical SCADA data systems | Access to tools and interfaces that allow System Management to retrieve historical information recorded from the Western Power EMS. This would include historical SCADA data and historical SCADA events. |
| Western Power limit management systems | Access to tools and interfaces that allow System Management to view transmission network equipment limits and perform temporary re-ratings (as available). |
| Western Power protection and disturbance systems | Access to tools and interfaces that allow System Management to view and extract (where applicable) transmission disturbance information. |
| Western Power GIS systems | Access to tools, systems and data that represents geographical details for the Western Power network, including the location and details of structures, conductors, cables, transmission substations, power stations and distribution connected market participants (as well as details of those components). |

Table 2.3 identifies other information transfer requirements that are captured in the Market Rules and Market Procedures (including Power System Operating Procedures).

Table 2.3 – References to other Market Procedures

| Information | Market Procedure(s) |
|---|---|
| Loss Factors | Market Procedure – Determining Loss Factors |
| Network Modelling Data | Power System Operating Procedure – Network Modelling Data |
| Equipment Limits | Power System Operating Procedure – Network Modelling Data Power System Operating Procedure – Power System Security |
| Facility Technical Compliance Testing Information | Power System Operating Procedure – Commissioning and Testing |

| | |
|--|--|
| Security Limit Information | Power System Operating Procedure – Power System Security |
| Load Shedding Plans | In accordance with [MR 3.6] |
| System Restart Information | Power System Operating Procedure – System Restart Plan |
| Ancillary Service Information | Power System Operating Procedure – Ancillary Services |
| Network Outage Information | Power System Operating Procedure – Facility Outages |
| Consequential Outage Information | Power System Operating Procedure – Facility Outages |
| Commissioning Information | Power System Operating Procedure – Commissioning |
| Expected Transmission Network Capabilities | Market Procedure – Undertaking the LT PASA and Conducting a Review of the Planning Criterion |
| Information to Support Applications for Reserve Capacity | Market Procedure – Certification of Reserve Capacity |
| Network Control Service Information | In accordance with [MR 5.3A] |
| Network Control Service Settlement Information | In accordance with [MR 5.9] |
| Estimation of Non-Scheduled Generator Quantities | Power System Operating Procedure – Dispatch |

Table 2.4 – Network Operator Information Requirements

Table 2.4 describes the information which is to be provided by AEMO to a Network Operator, in order to assist in fulfilling its Network Operator obligations.

Note, reference in the below table to accessing a system or a tool *at all times* should read as being subject to that system or tool being available for use (e.g. not on outage).

| Information Requirement | Form, Manner and Timeframe | Rule references |
|--------------------------------|---|--|
| Generator planned availability | Access to generator planned availability at all times | In accordance with [MR 3.18.5D] |

3 IMS INTERFACE MARKET PROCEDURE CHANGE PROCESS

Where the items above are inadequate to allow either System Management or a Network Operator to comply with an obligation to provide information to the other under the Market Rules, the process described in **[MR 2.36A.2]** must be followed.

4 COMMUNICATION AND CONTROL SYSTEM DIRECTIONS

Where System Management determines that it must issue a direction to a Network Operator under **[MR 2.36A.3]** the following process will be followed:

1. System Management must identify the required changes (consulting with the Network Operator and/or any other participants where appropriate)
2. System Management must document the required changes in a Communication and Control System Change Request
3. System Management will issue the Communication and Control System Change Request electronically to the nominated Western Power Communication and Control System Change officer (as notified by Western Power to System Management and updated from time to time)
4. The Network Operator must respond within 10 business days with a proposed implementation timeframe
5. Where System Management agrees with the proposed timeframe, the Network Operator must implement the changes within that timeframe

4.1 Where a timeframe cannot be agreed, senior managers from AEMO and the Network Operator must meet to agree a timeframe. PROVISION OF MARKET PARTICIPANT SCADA

The process in section 4 above also applies where a Market Participant may be required by System Management to provide SCADA information or controls. In this case, System Management will agree with the Market Participant the requirements within a protocol document. These requirements will then be passed to Western Power for implementation within the Western Power EMS.

Where Market Participants are connecting Facilities (or modifying connections for Facilities) to the SWIS, Western Power must consult with System Management to determine any specific SCADA requirements to be implemented within the Western Power EMS (in accordance with the SWIS Technical Rules – Section 3.3.4 and 3.4.10).

5 COMMUNICATION AND CONTROL SYSTEM REQUIREMENTS

The communication and control system requirements must be agreed between System Management and Western Power (in accordance with the SWIS Technical Rules – Section 3.3.4 and 3.4.10). Western Power must document these requirements and System Management may publish these requirements electronically on the Market Website.