

MARKET PROCEDURE: SUPPLEMENTARY RESERVE CAPACITY

PREPARED BY: System Capacity (WA)
DOCUMENT REF:
VERSION: 32.0
EFFECTIVE DATE: 18 April 2017 ~~dd30-monthNovember 2015~~ TBC
STATUS: FINAL

Approved for distribution and use by:

APPROVED BY: ~~Erin Stone~~ Cameron Parrotte
TITLE: ~~Executive General~~ Group Manager, Development and Capacity WA

VERSION RELEASE HISTORY

Version	Effective Date	Summary of Changes
1.0	23 January 2012	New Market Procedure for Supplementary Reserve Capacity resulting from PC_2010_08
2.0	30 November 2015	Changes resulting from the transfer of functions from the IMO to AEMO
3.0	18 April 2017 month 2017 TBC	Changes resulting from the transfer of System Management functions to AEMO

CONTENTS

CHAPTER 1. PROCEDURE OVERVIEW	5
1.1. Relationship with the Market Rules	5
1.2. Purpose of this Procedure	5
1.3. Application of this Procedure	5
1.4. Associated Market Procedures	5
1.5. Conventions Used	5
1.6. Terminologies and Definitions	5
1.7. General Notes	6
CHAPTER 2. PROCEDURE STEPS	7
2.1. Determination of the amount of SRC Required	89
2.2. Determination of the process to be used to secure SRC	89
2.3. Determination of the Maximum Contract Value	89
2.4. Acquisition of SRC via a Tender Process	1044
2.5. Acquisition of SRC by Direct Negotiation	1142
2.6. Standard Form Supplementary Capacity Contract	1243
2.7. [Blank]	1344
2.8. Settlement Process	1344
2.9. Process following each call for SRC or acquisition of Eligible Services	1344
CHAPTER 1. PROCEDURE OVERVIEW	4
1.1. Relationship with the Market Rules	4
1.2. Purpose of this Procedure	4
1.3. Application of this Procedure	4
1.4. Associated Market Procedures	4
1.5. Conventions Used	4
1.6. Terminologies and Definitions	4
1.7. General Notes	5
CHAPTER 2. PROCEDURE STEPS	5
2.1. Determination of the amount of SRC Required	5
2.2. Determination of the process to be used to secure SRC	6
2.3. Determination of the Maximum Contract Value	6
2.4. Acquisition of SRC via a Tender Process	7
2.5. Acquisition of SRC by Direct Negotiation	9
2.6. Standard Form Supplementary Capacity Contract	10
2.7. Information to be provided to System Management	11
2.8. Settlement Process	11
2.9. Process following each call for SRC or acquisition of Eligible Services	11

TABLES

Table 1 Defined terms	65
-----------------------	----

FIGURES

Figure 1 Acquisition of SRC

76

CHAPTER 1. PROCEDURE OVERVIEW

1.1. Relationship with the Market Rules

- 1.1.1. This Supplementary Reserve Capacity (SRC) Market Procedure (Procedure) should be read in conjunction with section 4.24 and clause 4.25.4F of the Wholesale Electricity Market (WEM) Rules (Market Rules).
- 1.1.2. Reference to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as of ~~10 January~~ ~~October~~ ~~December~~ 2016~~2~~. These references are included for convenience only, and are not part of this Procedure.

1.2. Purpose of this Procedure

- 1.2.1. This Procedure describes the steps AEMO ~~and (including in its capacity as System Management)~~ must follow in:
- (a) acquiring Eligible Services;
 - (b) entering into Supplementary Capacity Contracts; and
 - (c) determining the Maximum Contract Value per hour of availability for any Supplementary Capacity Contract.

1.3. Application of this Procedure

- 1.3.1. This Procedure applies to AEMO ~~and System Management~~.

1.4. Associated Market Procedures

- 1.4.1. The following Market Procedures are associated with this Procedure:
- (a) Reserve Capacity Testing;
 - (b) Undertaking the LT PASA and conducting a review of the Planning Criterion; and
 - (c) Settlements.
- 1.4.2. The following AEMO documents are associated with this Procedure (a copy is available on the Market Web Site):
- (a) Operational Financial Contingency.

1.5. Conventions Used

- 1.5.1. In this Procedure the conventions specified in clauses 1.3- 1.5 of the Market Rules apply.

1.6. Terminologies and Definitions

- 1.6.1. A word or phrase defined in the Market Rules, the Electricity Industry Act or the Regulations has the same meaning when used in this Procedure. In addition, the following defined terms have the meanings given.

Table 1 Defined terms

Term	Definition
Maximum Availability Percentage	If stipulated by AEMO, the maximum proportion of the total value of a Supplementary Capacity Contract that may be in the form of availability payments.
Maximum Contract Value	The maximum value, in dollars per megawatt per hour, for a Supplementary Capacity Contract that AEMO will accept, as determined in step 2.3 of this Procedure.
Notional Activation Price	A construct used in the calculation of the Maximum Contract Value, determined in accordance with step 2.3.1(b) of this Procedure.
Notional Availability Price	A construct used in the calculation of the Maximum Contract Value, determined in accordance with step 2.3.1(a) of this Procedure.
Tender Value	The value of a Tender for an Eligible Service in dollars, determined in accordance with step 2.4.6 of this Procedure.

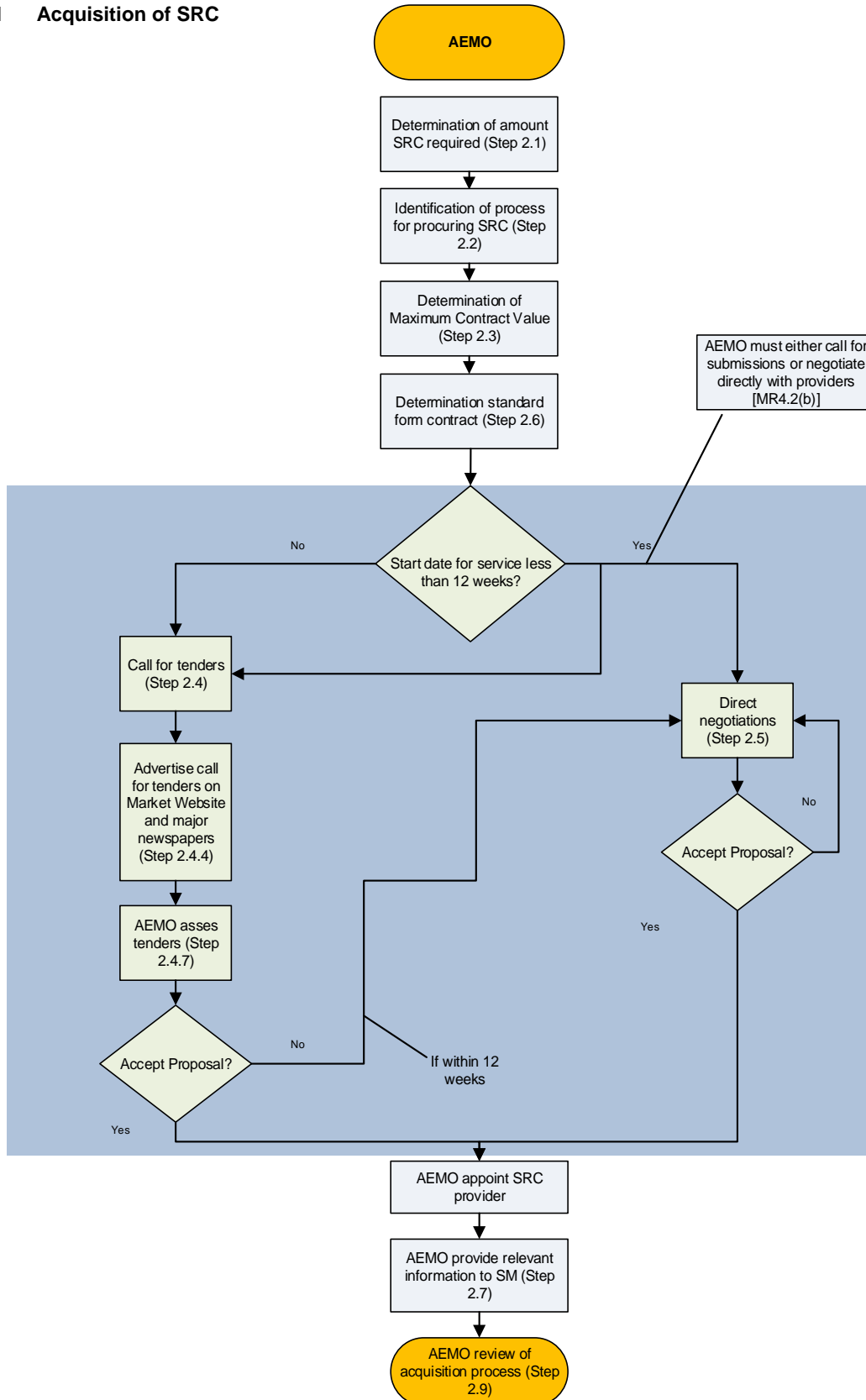
1.7. General Notes

- 1.7.1. SRC may only be provided by Eligible Services identified in clause 4.24.3 of the Market Rules **[MR Clause 4.24.3]**.
- 1.7.2. A Demand Side Programme that has had its Capacity Credits reduced in response to a request from the relevant Market Participant, in accordance with clause 4.25.4C of the Market Rules, is not an Eligible Service **[Clause MR4.25.4F]**.
- 1.7.3. Market Participants may not offer SRC from a Registered Facility that has had its Capacity Credits reduced due to a failed Reserve Capacity test, in accordance with clause 4.25.4, for any part of the current Capacity Year.
- 1.7.4. Payment for SRC is determined based on:
- the availability price which is provided to a generation facility for entering into the contract and making the agreed capacity available; and
 - the activation price which applies only when the service is called upon.

CHAPTER 2. PROCEDURE STEPS

This section outlines the procedure steps associated with the acquisition of, and entry into Supplementary Capacity Contracts for, SRC services. The diagram on the next page gives an overview of the process. Details of the associated sections of this Procedure are also indicated.

Figure 1 Acquisition of SRC



2.1. Determination of the amount of SRC Required

- 2.1.1. In determining the need for, and the amount of, SRC that is required and the associated timeframes, AEMO will:
- identify the actual level of Certified Reserve Capacity that will be available by reference to the level of Certified Reserve Capacity less any predicted plant outages, as published in the Medium Term Projected Assessment of System Adequacy;
 - using the most recently published forecasts, identify the level of Certified Reserve Capacity required to satisfy the SWIS reliability requirements, as set out in clauses 4.5.9(a) and 4.5.9(b) of the Market Rules;
 - determine the amount of SRC required by calculating the amount by which the quantity identified in step 2.1.1 (b) exceeds the quantity identified in step 2.1.1 (a) **[Clause MR4.24.1(b)]**;
 - determine the expected start and end dates for which the amount of SRC calculated in step 2.1.1 c) will be required **[Clause MR4.24.1 (a)]**;
 - determine the number of hours over the contract period during which SRC is expected to be required; and
 - determine the time of day when the SRC is expected to be required.

~~2.1.2. To assist in determining the amount of SRC, and associated timeframes,:~~

~~2.1.3. AEMO and System Management must consult; and~~

~~2.1.4.2.1.2. AEMO may consult with Market Participants.~~

2.2. Determination of the process to be used to secure SRC

- 2.2.1. If the expected start date of the shortfall is at least 12 weeks from the date AEMO becomes aware of the shortfall, then it must call for tenders from potential suppliers of SRC in an invitation to tender **[Clause MR4.24.2(a)]**.
- 2.2.2. If the expected start date of the shortfall is less than 12 weeks from the date AEMO becomes aware of the shortfall, then AEMO must either:
- call for tenders from potential suppliers of SRC in an invitation to tender; or
 - negotiate directly with potential suppliers of SRC **[Clause MR4.24.2(b)]**.
- 2.2.3. If AEMO decides to call for tenders for SRC it must follow the process set out in Section 2.4 of this Procedure.
- 2.2.4. If AEMO decides to negotiate directly with potential suppliers of SRC it must follow the process set out in section 2.5 of this Procedure.

2.3. Determination of the Maximum Contract Value

- 2.3.1. AEMO must determine the Maximum Contract Value per hour of availability for any Supplementary Capacity Contract that AEMO will accept in accordance with the following steps:
- The Notional Availability Price in dollars per megawatt (\$/MW) is calculated in accordance with the following formula:

$$NP_{av}(P_{RC}, d) = P_{RC} * d / x$$

Where:

P_{RC} is the Reserve Capacity Price for the Capacity Year for which the SRC is being procured in dollars per megawatt (\$/MW);

d is the term of the SRC contract in days; and

x is 121 days, which is the length of the Hot Season.

- (b) The Notional Activation Price is calculated as double the Alternative Maximum STEM Price in dollars per megawatt hour (\$/MWh).
- (c) The Maximum Contract Value in dollars per megawatt per hour (\$/MW/hr) is calculated in accordance with the following formula:

$$MCV(NP_{av}, NP_{ac}, t) = (NP_{av} + (NP_{ac} * t)) / t$$

Where:

NP_{av} is the Notional Availability Price determined in step 2.3.1(a), in dollars per megawatt (\$/MW);

NP_{ac} is the Notional Activation Price determined in step 2.3.1(b), in dollars per megawatt hour (\$/MWh); and

t is the number of hours during which the capacity is expected to be required as determined in step 2.1.1(e).

- (d) In order to ensure sufficient incentive for a provider of an Eligible Service to activate that service, AEMO may stipulate that the availability price must not exceed a given percentage of the contract value. AEMO may set the Maximum Availability Percentage at any value up to:

$$MAP(NP_{av}, MCV, t) = NP_{av} / (MCV * t) * 100$$

Where:

NP_{av} is the Notional Availability Price determined in step 2.3.1(a), in dollars per megawatt (\$/MW);

MCV is the Maximum Contract Value determined in step 2.3.1(c), in dollars per megawatt per hour (\$/MW/hr); and

t is the number of hours during which the capacity is expected to be required as determined in step 2.1.1(e).

2.4. Acquisition of SRC via a Tender Process

- 2.4.1. AEMO must follow the process steps outlined in this section 2.4 of this Procedure if AEMO seeks to acquire SRC via a tender process.
- 2.4.2. AEMO must not call for tenders for SRC earlier than six calendar months prior to the calendar month in which the shortfall period is expected to start. **[Clause MR4.24.5]**
- 2.4.3. AEMO must prescribe the tender form to be used by those applying to provide Eligible Services. This form must require the specification of:
- (a) the name and contact details of the applicant;
 - (b) the nature of the Eligible Service to be provided;
 - (c) the amount of the Eligible Service available;
 - (d) the maximum number of hours over the term of the Supplementary Capacity Contract that the Eligible Service will be available;
 - (e) the maximum number of hours on each day during the term of the Supplementary Capacity Contract that the Eligible Service will be available;
 - (f) the time of each day during the term of the Supplementary Capacity Contract that the Eligible Service will be available;
 - (g) any information required to complete the relevant standard form Supplementary Capacity Contract for the Eligible Service and the applicant, together with full details of any amendments to the standard form Supplementary Capacity Contract required by the applicant;
 - (h) the mechanism for activating the Eligible Service;
 - (i) the mechanisms available for measuring the Eligible Service provided;
 - (j) the values of:
 - (i) the availability price for the Eligible Service expressed in dollars; and
 - (ii) the activation price for the Eligible Service, expressed in dollars per hour of activation, where this price must reflect direct or opportunity costs incurred, where the activation price plus:
 - (iii) the availability price; divided by
 - (iv) the lesser of:
 - (A) the number of hours specified in the advertisement for the call for tenders under step 2.4.5(d); and
 - (B) the number of hours specified for the Eligible Service in accordance with step 2.4.3(d),
 divided by the capacity of the Eligible Service specified in accordance with step 2.4.3(c) must not exceed the Maximum Contract Value **[Clause MR4.24.7]**; and
 - (v) the availability price divided by the Tender Value, determined in step 2.4.6, multiplied by 100 may not exceed the Maximum Availability Percentage determined in step 2.3.1(d); and
 - (k) the timelines associated with the tendering process.

2.4.4. No earlier than thirty Business Days and no later than 10 Business Days prior to the proposed closing date for submission of tenders, AEMO must advertise the call for tenders on the Market

Web Site and in major local and national newspapers. **[Clause MR4.24.6]**

2.4.5. The advertisement must include:

- (a) the date and time at which any person wishing to tender to supply Eligible Services must have completed and lodged with AEMO the form specified in step 2.4.3 above.
- (b) contact details for AEMO;
- (c) the amount of capacity required;
- (d) the number of hours over which the capacity is expected to be used;
- (e) the time of the day where the capacity is expected to be required;
- (f) the expected term of any Supplementary Capacity Contracts entered into as a result of the call for tenders;
- (g) the Maximum Contract Value per hour of availability for any Supplementary Capacity Contract that AEMO will accept;
- (h) the location of copies of the standard form Supplementary Capacity Contracts on the Market Web Site;
- (i) the location on the Market Web Site of the tender form to be used in applying to provide Eligible Services; and
- (j) the Maximum Availability Percentage, where applicable. **[Clause MR4.24.6]**

2.4.6. The Tender Value in dollars for an Eligible Service is calculated as the sum of:

- (a) the availability price specified for the Eligible Service in accordance with step 2.4.3(j)(i); and
- (b) the product of the activation price specified for the Eligible Service in accordance with step 2.4.3(j)(ii) and the lesser of:
 - (i) the number of hours specified in the advertisement for the call for tenders under step 2.4.5(d); and
 - (ii) the number of hours specified for the Eligible Service in accordance with step 2.4.3(d). **[Clause MR4.24.8(c)]**

2.4.7. AEMO will assess all tenders following its internal procurement policy and advise tenderers of the outcome (in accordance with the timelines specified in the tender documentation).

2.4.8. AEMO is not under any obligation to accept any tender, or enter into a Supplementary Capacity Contract in respect of any tender, made in response to a call for tenders. **[Clause MR4.24.9]**

2.5. Acquisition of SRC by Direct Negotiation

2.5.1. If AEMO seeks to acquire SRC via negotiation, then AEMO must follow the process steps outlined in section 2.5 of this Procedure.

2.5.2. If AEMO negotiates directly with a potential supplier of Eligible Services, then it must provide the following information to the potential supplier:

- (a) the amount of capacity required;
- (b) the relevant standard form Supplementary Capacity Contract; and
- (c) details of the information to be provided by the potential supplier, including:
 - (i) the amount of the Eligible Service available;

- (ii) the mechanism for activating the Eligible Service;
- (iii) the mechanisms available for measuring the Eligible Service provided;
- (iv) the availability price for the Eligible Service expressed in dollars; and
- (v) the activation price for the Eligible Service, expressed in dollars per hour of activation, where this price must reflect direct or opportunity costs incurred.
[Clause MR4.24.10]

2.5.3. AEMO may accept or reject any proposals for the acquisition of SRC obtained by way of direct negotiation.

2.6. Standard Form Supplementary Capacity Contract

2.6.1. AEMO must develop and maintain a standard form Supplementary Capacity Contract which accords with the requirements in clause 4.24.13 of the Market Rules. **[Clause MR4.24.12]**

2.6.2. The standard form Supplementary Capacity Contract will require the supplier of an Eligible Service to reduce net consumption, or to increase generation, on instruction from AEMO (in its capacity as System Management) and must specify:

- (a) that there are no force majeure conditions;
- (b) the settlement process to be followed, including timing of payments;
- (c) contract variation conditions;
- (d) any conditions required to ensure that if a different person takes over the facility used to provide the Eligible Service, that the person taking over will be bound by the contract obligations (for example, by requiring the execution of a deed of assumption or novation);
- (e) the financial consequences of failing to supply the Eligible Service in accordance with the contract, based on the arrangements which apply under clause 4.26, where a Market Participant holding Capacity Credits for a Facility fails to comply with its Reserve Capacity Obligations;
- (f) ~~a condition allowing AEMO to disclose the information required by clause 4.24.16 and preventing the disclosure set out in clause 4.24.17;~~**[Blank]**
- (g) the technical standards and verification arrangements which facilities used to provide Eligible Services must comply with; and
- (h) blank schedules specifying:
 - (i) the term of the Supplementary Capacity Contract, where this term is not to exceed 12 weeks;
 - (ii) the sources of the net consumption reduction or generation increase;
 - (iii) the amount of net consumption reduction or generation increase required;
 - (iv) the notification time to be given for activation;
 - (v) the method of notification of activation;
 - (vi) the minimum duration of any activation;
 - (vii) the maximum duration of any single activation;
 - (viii) any limits on the number of times AEMO (in its capacity as System Management) ~~System Management~~ can request activation;
 - (ix) the basis to be used for measuring the response;
 - (x) the availability price;

- (xi) the activation price;
- (xii) technical matters relating to the facility (including testing); and
- (xiii) the fact that activation instructions will be given by ~~System Management~~ AEMO (in its capacity as System Management). **[Clause MR4.24.13]**

2.6.3. This standard form Supplementary Capacity Contract will be available on the Market Web Site in the event that AEMO decides to acquire SRC via a tender process.

2.6.4. Despite the existence of the standard form Supplementary Capacity Contract, AEMO may enter into Supplementary Capacity Contracts in any form it considers appropriate. **[Clause MR4.24.14]**

2.7. Information to be provided to System Management[Blank]

~~2.7.1. AEMO must provide the following Supplementary Capacity Contract information to System Management, so as to allow System Management to dispatch the contracted Eligible Services:~~

- ~~(a) the identity of each contracted Eligible Service, listed in order of increasing activation price;~~
- ~~(b) the information required to contact the party which will activate the Eligible Service;~~
- ~~(c) the process to be followed in activating that Eligible Service, including required advance notification times; and~~
- ~~(d) the limitations on the availability of the Eligible Service. **[MR4.24.16]**~~

~~2.7.2. AEMO must not provide the following Supplementary Capacity Contract information to System Management for any Eligible Service:~~

- ~~(a) the activation price for that Eligible Service; or~~
- ~~(b) the availability price for that Eligible Service. **[MR4.24.17]**~~

2.8. Settlement Process

2.8.1. Settlement of Supplementary Capacity Contracts will be through the non-STEM settlement system.

2.8.2. AEMO must recover the full cost it incurs in respect of Supplementary Capacity Contracts in accordance with clause 4.28 and Chapter 9 of the Market Rules. **[Clause MR4.24.15]**

2.9. Process following each call for SRC or acquisition of Eligible Services

2.9.1. Following each call for tenders for SRC or otherwise acquiring Eligible Services, AEMO must review the SRC provisions in section 4.24 of the Market Rules.

2.9.2. This review must:

- (a) have regard to the Wholesale Market Objectives; and
- (b) undertake a public consultation process in respect of the outcome of the review. **[MR Clause 4.24.19]**

2.9.2. Following the review AEMO may propose amendments to the Market Rules and this Procedure (if applicable).

APPENDIX A. EXAMPLE CALCULATION OF MAXIMUM CONTRACT VALUE AND MAXIMUM AVAILABILITY PERCENTAGE

This Appendix contains example calculations of the Maximum Contract Value and Maximum Availability Percentage.

SRC REQUIREMENT (DETERMINED IN STEP 2.1):

Amount of SRC required = 60 MW

Start date = 15 Nov 2012

End date = 31 Jan 2013

d: Duration = 78 days (inclusive)

t: Number of hours during which the SRC is expected to be required = 75 hours

REFERENCE MARKET PRICES

PRC: Reserve Capacity Price = \$132,000 / MW / year

Alternative Maximum STEM Price = \$525 / MWh

MAXIMUM CONTRACT VALUE (STEP 2.3.1(A) TO (C))

$$\begin{aligned}
 NP_{av}: \text{Notional Availability Price} &= P_{RC} * d / x \\
 &= 132,000 * 78 / 121 \\
 &= \$85,091 / MW
 \end{aligned}$$

$$\begin{aligned}
 NP_{ac}: \text{Notional Activation Price} &= 2 * \text{Alternative Maximum STEM Price} \\
 &= 2 * \$525 \\
 &= \$1,050 / MWh
 \end{aligned}$$

$$\begin{aligned}
 MCV: \text{Maximum Contract Value} &= (NP_{av} + (NP_{ac} * t)) / t \\
 &= (85,091 + (1,050 * 75)) / 75 \\
 &= \$2,185 / MW / hr
 \end{aligned}$$

MAXIMUM AVAILABILITY PERCENTAGE (STEP 2.3.1(D))

$$\begin{aligned} \text{MAP: Maximum Availability Percentage} &= \text{NP}_{av} / (\text{MCV} * t) * 100 \\ &= 85,091 / (2,185 * 75) * 100 \\ &= 52\% \end{aligned}$$