



Draft Rule Change Report

Title: Cost_LR

Ref: RC_2010_33
Standard Rule Change Process

Date: 2 March 2011

CONTENTS

1.	INTRODUCTION	3
2	CALL FOR SECOND ROUND SUBMISSIONS	4
3.	THE RULE CHANGE PROPOSAL	4
3.1	Submission Details	4
3.2	Summary details of the Proposal	4
3.3	The Proposal and the Wholesale Market Objectives	5
3.4	Amending Rules proposed by the IMO	5
3.5	The IMO's Initial Assessment of the Proposal	5
4.	FIRST SUBMISSION PERIOD	5
4.1	Submissions received	5
4.2	Public Forums and Workshops	6
4.3	Additional Amendments to the Amending Rules	6
5.	THE IMO'S ASSESSMENT	8
5.1	Wholesale Market Objectives	9
5.2	Practicality and Cost of Implementation	10
5.3	Market Advisory Committee	10
5.4	Views Expressed in Submissions	11
6.	THE IMO'S DRAFT DECISION	11
6.1	Reasons for the decision	11
7.	PROPOSED AMENDING RULES	11
	APPENDIX 1: FULL DETAILS OF THE PROPOSAL	21
	APPENDIX 2: PROPOSED AMENDING RULES IN THE RULE CHANGE PROPOSAL	23
	APPENDIX 3: ADDITIONAL AMENDMENTS MADE BY THE IMO FOLLOWING THE FIRST SUBMISSION PERIOD	25

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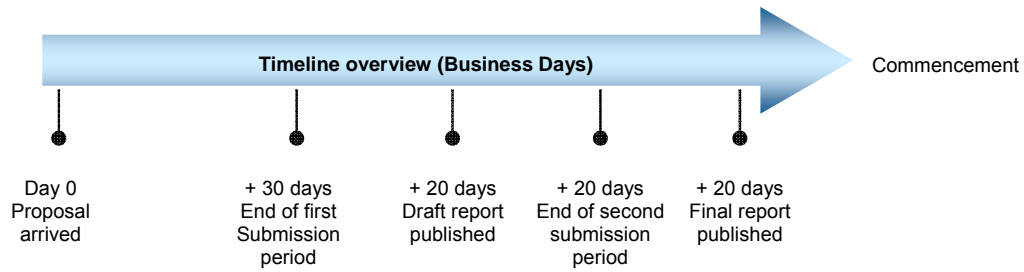
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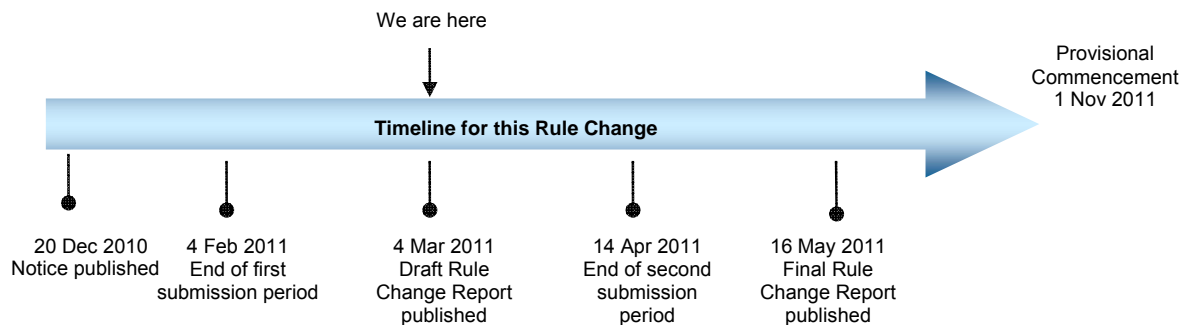
1. INTRODUCTION

On 17 December 2010 Verve Energy submitted a Rule Change Proposal regarding amendments to clauses 9.9.1, 9.11.1 and new clause 9.9.3A of the Wholesale Electricity Market Rules (Market Rules).

This proposal is being processed using the Standard Rule Change Process, described in section 2.7 of the Market Rules. The standard process adheres to the following timelines:



The key dates in processing this Rule Change Proposal are:



Please note the commencement date is provisional and may be subject to change in the Final Rule Change Report.

The draft decision of the IMO Chief Executive Officer is to accept the Rule Change Proposal as proposed and modified following the first submission period. The detailed reasons for the decision are set out in section 5 of this report.

In making its draft decision on the Rule Change Proposal, the IMO has taken into account:

- the Wholesale Market Objectives;
- the practicality and cost of implementing the proposal;
- the views of the Market Advisory Committee (MAC); and
- the submissions received.

All documents related to this Rule Change Proposal can be found on the IMO website: http://www.imowa.com.au/RC_2010_33.

2 CALL FOR SECOND ROUND SUBMISSIONS

The IMO invites interested stakeholders to make submissions on this Draft Rule Change Report. The submission period is 28 Business Days from the publication date of this report. Submissions must be delivered to the IMO by 5.00pm, **Thursday 14 April 2011**.

The IMO prefers to receive submissions by email (using the submission form available on the IMO website: <http://www.imowa.com.au/rule-changes>) to: market.development@imowa.com.au

Submissions may also be sent to the IMO by fax or post, addressed to:

Independent Market Operator
Attn: General Manager, Development
PO Box 7096
Cloisters Square, PERTH, WA 6850
Fax: (08) 9254 4399

3. THE RULE CHANGE PROPOSAL

3.1 Submission Details

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Date submitted:	17 December 2010
Urgency:	Standard Rule Change Process
Change Proposal title:	Cost_LR
Market Rule affected:	9.9.1, 9.9.3A(new) and 9.11.1

3.2 Summary details of the Proposal

In its Rule Change Proposal, Verve Energy noted that under the current market design it is the default provider of Ancillary Services in the Wholesale Electricity Market (WEM). System Management is however able to contract with other suppliers for any of the Ancillary Services. The total cost of an Ancillary Service is:

- proposed by the IMO or System Management; and
- determined by the Economic Regulation Authority (ERA) (the ERA could approve the proposal or it could amend the total cost based on its own processes).

Verve Energy's compensation for each Trading Month is then determined as the balance from the total after deducting the total payment to other suppliers of Ancillary Services.

In the case of System Restart Service, the total is proposed by System Management for determination by the ERA once every three years, although there is provision under the Market Rules for System Management to propose a revised total amount for years two and three of any three-year Review Period. These revised totals are also subject to determination by the ERA.

Verve Energy noted that under the current settlement rules any third party suppliers of System Restart Services will be paid in accordance with the terms of their contracts. These payments are then deducted from the total determined by the ERA. In the event that, for whatever reason, the ERA sets the System Restart Service cost to be zero, this will give rise to a negative amount to be paid to Verve Energy. Effectively, Verve Energy will be paying the third party suppliers to supply the System Restart Services. Verve Energy submitted that it will also be required to provide any further System Restart Services, additional to those provided by the third parties, without any compensation.

Verve Energy proposed to amend the settlement equations to remove the anomaly of Verve Energy paying third party suppliers for System Restart Services when the benefit goes to the market as a whole.

Full details of the Rule Change Proposal are available in Appendix 1 of this report.

3.3 *The Proposal and the Wholesale Market Objectives*

Verve Energy submitted that the proposed amendments address a fundamental value that underwrites the market and thus the Market Objectives. Verve Energy proposed that it is inequitable for a Market Participant to be required to pay for services provided by third party Market Participants when the benefit is received by the market as a whole. Verve Energy considered that in correcting this inequity the rule change should be seen as supporting the market and consistent with the Market Objectives.

3.4 *Amending Rules proposed by the IMO*

The amendments to the Market Rules originally proposed by Verve Energy are presented in Appendix 2 of this report.

3.5 *The IMO's Initial Assessment of the Proposal*

The IMO decided to proceed with this proposal on the basis that Market Participants should be given an opportunity to provide submissions as part of the rule change process.

4. FIRST SUBMISSION PERIOD

The first submission period for this Rule Change Proposal was between 21 December 2010 and 4 February 2011.

4.1 *Submissions received*

The IMO received submissions from Landfill Gas & Power (LGP), Perth Energy and Synergy. The full text of the submissions is available on the IMO website.

The submissions received all support the Rule Change Proposal. Specifically:

- LGP considers that it is inequitable for a Market Participant to be required to pay for services provided by third party Market Participants when the benefit is received by the market as a whole; and
- Perth Energy considers that the issue should be addressed as soon as possible, to ensure that Verve Energy is not penalised for performing its role as default Ancillary Services provider.

Perth Energy also supports a further development of the Ancillary Services market to introduce more meaningful competition for these services. In this regard, Perth Energy welcomes the recent presentation to the MAC by System Management about the competitive provision of Ancillary Services, and looks forward to participating in any development work that may be required to move towards competitive provision of Ancillary Services.

Synergy considers that any System Restart cost should fall on customers, as they are the ultimate beneficiaries of the network having access to a System Restart capability. Synergy agrees that payment to third party suppliers should therefore be recovered from Market Customers through the Reconciliation Settlement amount. Synergy also notes that while the current System Restart value is zero, Verve Energy is the only provider of System Restart under a contractual arrangement put in place prior to market start. However, Synergy notes that this arrangement will expire on 30 June 2011.

Perth Energy considers that the proposed changes would have a beneficial impact on Wholesale Market Objective (a). LGP and Synergy agree with Verve Energy that the proposed changes are consistent with the Wholesale Market Objectives.

No issues were raised in the submissions.

4.2 Public Forums and Workshops

No public forums or workshops were held in relation to this Rule Change Proposal.

4.3 Additional Amendments to the Amending Rules

Following the first public submission period the IMO has made some additional changes to the proposed Amending Rules. A summary of these changes is provided below. The additional amendments are contained in Appendix 3 of this report.

It should be noted that, with the exception of the changes originally proposed by Verve Energy, the intention of the following amendments is only to provide clarification of existing processes, or to address minor typographical and manifest errors in the current Market Rules. The additional amendments do not involve any changes to the current settlement processes.

Calculation of ASP_Balance_Payment

Verve Energy has proposed the replacement of the term “ $\text{Sum}(i \in I, \text{ASP_Payment}(i, m))$ ” with a new term “ $\text{Sum}(i \in I, \text{ASP_Balance_Payment}(i, m))$ ” in the Electricity Generation Corporation AS Provider Payment calculation in clause 9.9.1. The new term is intended to be the sum of:

- (a) the sum of all the Ancillary Service Contract (ASC) payments for Load Following Service, Spinning Reserve Service and Dispatch Support Service for the Trading Month, and
- (b) the lesser of:
 - the sum of all ASC payments for Load Rejection Reserve Service and System Restart Service for the Trading Month, and
 - Cost_LR for the Trading Month.

However, summing the values of $\text{ASP_Balance_Payment}(i, m)$ as defined in the proposed new clause 9.9.3A does not give this result, because the sum of the values

calculated under clause 9.9.3A(c) may not equal (b) above. For example, if Cost_LR was \$1000 and there was one ASC payment for System Restart Service of \$300, no ASC payments for Load Rejection Reserve Service and 10 providers of Ancillary Services, then the sum of the clause 9.9.3A(c) values for the 10 providers would be $10 * \max(0, 1000 - 300) = \7000 , not the desired \$300. In general, it is not possible to tell whether the sum of the ASC payments for System Restart Service and Load Rejection Reserve Service exceeds Cost_LR by considering one provider at a time, as there may be multiple providers of System Restart Service and Load Rejection Reserve Service under ASCs.

The IMO has amended the proposed drafting so that clause 9.9.3A defines a total figure across all ASCs (“ASP_Balance_Payment(m)”), which is calculated as described above and used in clause 9.9.1 instead of “Sum($i \in I$, ASP_Balance_Payment(i,m))”.

Contracted Ancillary Services

An ASC can cover the provision of multiple Ancillary Services, which can be of the same or of different Ancillary Service types. A Rule Participant may also provide a particular type of Ancillary Service under more than one ASC. In these cases System Management would provide ASC details to the IMO under clauses 3.22.2 and 3.22.3 for each contracted Ancillary Service, rather than for the ASC or the Rule Participant as a whole. Terms defining Ancillary Services provided under an ASC (e.g. Contracted Ancillary Service, Contracted Spinning Reserve Service, etc) have been added to the Glossary and clauses 3.22.2, 3.22.3, 9.9.2, 9.9.3 and 9.9.4 have been updated to clarify this.

Restriction of clause 9.9.3 to Ancillary Service Providers

Currently clause 9.9.3 of the Market Rules only calculates ASC payments for Ancillary Service Providers, excluding other Rule Participants such as Market Generators and Market Customers (as an Ancillary Service Provider cannot be registered in any other Rule Participant Class). The clause has been corrected to refer to Rule Participants, reflecting the current practice.

References to ASC payments in clauses 9.9.1 and 9.9.1A

The references to ASC payments made to Market Participants in clause 9.9.1 and to non-Market Participants in clause 9.9.1A are overly complicated and technically invalid (as the terms “i” and “ASP i” are undefined). The references have been corrected and simplified.

Specification of Cost_LR shortfall in clause 9.11.1

The total of the ASSA(p,m) values calculated under clause 9.9.1 does not include amounts paid to Ancillary Service Providers under clause 9.9.1A, and so its proposed use in clause 9.11.1 would result in an unintentional payment of the total amount calculated under clause 9.9.1A to Market Customers. Further, the reason for the inclusion of the term in this clause (to cover the shortfall if the total cost of System Restart Service and Load Rejection Reserve Service ASCs exceeds Cost_LR) is not immediately apparent. The IMO proposes to use a new term “Cost_LR_Shortfall(m)”, defined explicitly in new clause 9.9.3B, in clause 9.11.1 instead of the total of the ASSA(p,m) values.

Definition of Non-Compliance Change settlement amount

The Non-Compliance Charge settlement amount for Verve Energy is defined in clause 9.10A.1 and used in the calculation of the Reconciliation Settlement amount for each Market Participant under clause 9.11.1. The amount is clearly intended to be the total charge for a Trading Month, e.g. it is denoted “NCC(p,m)” and calculated as a sum over all the Trading Intervals in Trading Month m. However, the current drafting incorrectly refers to the amount as “the Non-Compliance Charge settlement amount for Market Participant p for *Trading Interval t of Trading Day d*”. The IMO has updated the drafting to clarify that this is a monthly amount.

ASC quantities

Clause 3.22.3(b)(ii) has been updated to be more specific about the units of measure used for each Ancillary Service type. The definition of ASP_SRQ(i,t) (now ASP_SRQ(c,t)) in clause 9.9.2 has been updated to show the correct data source and to clarify that a MW value is required for the calculation.

Minor and Typographical Amendments

Clause(s)	Description of proposed amendment
9.9.1	The word “capacity” has been added to the definition of Capacity_LF(m), as this amount only covers the capacity cost for Load Following and not the availability cost.
9.9.2	The clause references in the definitions of ASP_SRPayment and ASP_LFPayment in clause 9.9.2 have been corrected.
9.9.2	The term currently used in clause 9.9.2 to define the set of all Trading Days in the Trading Month (“Peak and Off-Peak”) is technically incorrect, since a Trading Interval cannot be both Peak and Off-Peak. The term has been replaced with an explicitly defined term “T”.
9.9.2	The definition of MCAP in clause 9.9.2 has been simplified so that it refers explicitly to the clause in which MCAP is defined (clause 6.14.2).
9.9.2, 9.10.1A	The references to Trading Day “d” in clauses 9.9.2 and 9.10.1A have been removed as they are unnecessary and add complexity to the equations.
9.10.1A	The definition of NCQ in clause 9.10A.1 contains an invalid cross-reference (to clause 7.13.1(cC)). The clause has been amended to show the correct cross-reference (to clause 7.13.1A(a)).
9.11.1	The calculation in clause 9.11.1 has been amended to clarify that the term NCC(q,m) should not be added for each Trading Interval in the Trading Month.
General	Some amendments have been proposed to improve consistency in the naming of Ancillary Services by including the word “Service” in all service names e.g. System Restart Service.
General	Several minor corrections to spelling and punctuation have been proposed (e.g. the spelling of “Participant” has been corrected in clause 9.9.1A).

5. THE IMO’S ASSESSMENT

In preparing its Draft Rule Change Report, the IMO must assess the Rule Change Proposal in light of clauses 2.4.2 and 2.4.3 of the Market Rules.

Clause 2.4.2 outlines that the IMO “*must not make Amending Rules unless it is satisfied that the Market Rules, as proposed to be amended or replaced, are consistent with the Wholesale Market Objectives*”.

Additionally, clause 2.4.3 states, when deciding whether to make Amending Rules, the IMO must have regard to the following:

- any applicable policy direction from the Minister regarding the development of the market;
- the practicality and cost of implementing the proposal;
- the views expressed in submissions and by the MAC; and
- any technical studies that the IMO considers necessary to assist in assessing the Rule Change Proposal.

The IMO notes that there has not been any applicable policy direction from the Minister or any technical studies commissioned in respect of this Rule Change Proposal.

The IMO’s assessment is outlined in the following sections.

5.1 Wholesale Market Objectives

The IMO considers that the Market Rules as a whole, if amended, will be consistent with the Wholesale Market Objectives.

Wholesale Market Objective	Consistent with objective
(a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system	Yes
(b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors	Yes
(c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions	Yes
(d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system	Yes
(e) to encourage the taking of measures to manage the amount of electricity used and when it is used	Yes

Further, the IMO considers that the Market Rules if amended would not only be consistent with the Wholesale Market Objectives but also allow the Market Rules to better address Wholesale Market Objective (a):

Impact	Wholesale Market Objectives
Allow the Market Rules to better address objective	a
Consistent with objective	b, c, d, e
Inconsistent with objective	-

- (a) *to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West Interconnected System*

The IMO considers that the proposed Amending Rules will promote the economically efficient supply of electricity and electricity related services in the SWIS. The proposed changes will prevent a potentially significant cross subsidy from Verve Energy to Market Customers by ensuring that Verve Energy is not required to pay for System Restart and Load Rejection Reserve Services provided by third parties.

The IMO considers that the proposed changes are consistent with the remaining Market Objectives and improve the integrity of the Market Rules.

5.2 Practicality and Cost of Implementation

Cost:

The proposed amendments will require changes to the settlement systems operated by the IMO. These changes will cost approximately \$30,000 AUD.

The proposed amendments will also require minor changes to the Market Procedure for Settlement. The update costs fall within the IMO's normal operating budget.

The proposed amendments do not require changes to any of System Management's systems or procedures. In addition there have been no identified changes to other Rule Participant's costs.

Practicality:

The IMO has not identified any issues with the practicality of implementing the proposed changes.

5.3 Market Advisory Committee

The MAC discussed the proposal at the 15 December 2010 MAC meeting. An overview of the discussion from the MAC meeting is presented below. Further details are available in the MAC meeting minutes available on the IMO website:

http://www.imowa.com.au/MAC_34

December 2010 MAC meeting

Mr Andrew Everett noted that the Pre Rule Change Discussion Paper from Verve Energy proposes to remove a current anomaly in the Market Rules, which would require Verve Energy to pay to provide System Restart services if the current Cost_LR value is zero and services are contracted to another party. Any costs for System Restart services provided by third party suppliers would be allocated to Market Customers through the Reconciliation Statement.

Mr Dykstra questioned how a Cost_LR value of zero could result in Verve Energy paying for the services. Mr Everett confirmed that this would be the case and noted that this had been confirmed by both Verve Energy and the IMO.

Mr MacLean questioned whether the ASP_Payment variable needs to be retained in the calculation contained in clause 9.9.1 given the new ASP_Balance_Payment variable that has been proposed. Mr Everett agreed to review the drafting further to ensure that the calculation correctly reflects the required amendments.

Discussion ensued around the chain of events which lead to the situation where Cost_LR had been set equal to zero. Mr Chris Brown noted that the ERA will be soon releasing an issues paper and consulting on the revised Cost_LR value with industry.

The MAC supported the progression of the proposal through the rule change process, subject to Mr Everett's review of the drafting and the incorporation of any further necessary amendments.

5.4 Views Expressed in Submissions

The IMO received three submissions during the first submission period, all supporting the Rule Change Proposal. No issues were raised in the submissions.

6. THE IMO'S DRAFT DECISION

The IMO's draft decision is to accept the Rule Change Proposal as modified by the amendments outlined in section 4.3 and specified in Appendix 3 of this report.

6.1 Reasons for the decision

The IMO has made its decision on the basis that the Amending Rules:

- will allow the Market Rules to better address Wholesale Market Objective (a);
- are consistent with the remaining Wholesale Market Objectives;
- improve the integrity of the Market Rules;
- have the support of the MAC; and
- are supported by all the submissions received during the first submission period.

Additional detail outlining the analysis behind the IMO's reasons is outlined in section 5 of this Draft Rule Change Report.

7. PROPOSED AMENDING RULES

The IMO proposes to implement the following Amending Rules (added text, ~~deleted text~~):

Clauses 3.22.2 and 3.22.3 have been amended to clarify that if an ASC covers multiple Ancillary Services then System Management will provide details for each of the contracted Ancillary Services, rather than for the ASC as a whole. Clause 3.22.3(b)(ii) has been updated to be more specific about the units of measure used for each Ancillary Service type.

3.22.2. When System Management has entered into an Ancillary Service Contract with a Rule Participant, System Management must as soon as practicable and not less than 20 Business Days prior to the Ancillary Service Contract taking effect, provide the IMO with:

- (a) the identity of the Rule Participant; and
- (b) for each Contracted Ancillary Service ~~the Ancillary Service contracted~~ to be provided by the Rule Participant under the Ancillary Service Contract;
 - i. a unique identifier for the Contracted Ancillary Service;
 - ii. the type of Ancillary Service where this can be one of:
 1. Spinning Reserve Service;

2. Load Following Service;
3. Load Rejection Reserve Service;
4. System Restart Service; or
5. Dispatch Support Service; and

iii. the form of settlement data that System Management will provide to the IMO for the Contracted Ancillary Service provided by the Rule Participant, where this data must be one of the formats allowed by clause 3.22.3.

- (c) ~~a unique identifier for the Ancillary Service Contract;~~
- (d) ~~the form of settlement data that System Management will provide to the IMO for the Contracted Ancillary Service provided by the Rule Participant, where this data must be one of the formats allowed by clause 3.22.3.~~

3.22.3. System Management must provide the following information to the IMO for each Rule Participant holding an Ancillary Service Contract for a Trading Month by the date specified in clause 9.16.2(a):

- (a) the identity of the Rule Participant;
- (b) for each Contracted Ancillary Service provided under an Ancillary Service Contract held by the Rule Participant:
 - i. the type of Ancillary Service where this can be one of:
 1. Spinning Reserve Service;
 2. Load Following Service;
 3. Load Rejection Reserve Service;
 4. System Restart Service; or
 5. Dispatch Support Service;
 - ii. for each Trading Interval of the Trading Month the quantity of Ancillary Service to a precision of 0.001 units ~~(where no specific unit of measure will be assumed)~~, where the unit of measure is:
 1. MWh for Spinning Reserve Service;
 2. MWh for Load Following Service;
 3. MWh for Load Rejection Reserve Service;
 4. as determined by System Management for System Restart Service; or
 5. as determined by System Management for Dispatch Support Service; and
 - iii. either:

1. a total monthly payment for the Ancillary Service in dollars and whole cents; or
2. a price in dollars and whole cents per unit of the quantity described in (ii) per Trading Interval.

A new term ASP_Balance_Payment(m) has been introduced, replacing the existing term $\text{Sum}(i \in I, \text{ASP_Payment}(i,m))$ in the definition for Electricity Generation Corporation AS Provider Payment(p,m). ASP_Balance_Payment(m) is determined in a new clause 9.9.3A. The term representing the total payment to Market Participant p for Ancillary Services provided under Ancillary Service Contracts has been corrected (“d(p,i) x ASP_Payment(i,m)” replaced with “ASP_Payment(p,m)”).

9.9.1. The Ancillary Service settlement amount for Market Participant p for Trading Month m is:

$$\begin{aligned} \text{ASSA}(p,m) = & \text{Electricity Generation Corporation AS Provider Payment}(p,m) \\ & + \cancel{d(p,i) \times \text{ASP_Payment}(i,m)} \text{ASP_Payment}(p,m) \\ & - \text{Load_Following_Share}(p,m) \\ & \times (\text{Capacity_LF}(m) + \text{Availability_Cost_LF}(m)) \\ & - \text{Reserve_Cost_Share}(p,m) \\ & - \text{Consumption_Share}(p,m) \times \text{Cost_LRD}(m) \end{aligned}$$

Where

the Electricity Generation Corporation AS Provider Payment(p,m) =
0 if Market Participant p is not the Electricity Generation Corporation
and

$$\begin{aligned} & (\text{Availability_Cost_R}(m) + \text{Availability_Cost_LF}(m) + \text{Cost_LRD}(m)) \\ & - \cancel{\text{Sum}(i \in I, \text{ASP_Payment}(i,m))} \text{ASP_Balance_Payment}(m) \end{aligned}$$

otherwise;

d(p,i) is 1 if ASP i corresponds to Market Participant p and zero
otherwise;

ASP_Payment(ip,m) is the total payment to Market Participant p for Contracted Ancillary Services in Trading Month m, determined in accordance with clause 9.9.3;

ASP_Balance_Payment(m) is the amount determined in accordance with clause 9.9.3A for Trading Month m;

Load_Following_Share(p,m) is the share of the Cost_LF(m) allocated to Market Participant p in Trading Month m, where this is to be determined by the IMO using the methodology described in clause 3.14.1;

Reserve_Cost_Share(p,m) is defined in clause 9.9.2(b);

Consumption_Share(p,m) is the proportion of consumption associated with Market Participant p for Trading Month m determined by the IMO in accordance with clause 9.3.7;

Capacity_LF(m) is the total Load Following ~~service~~ Service capacity payment cost for Trading Month m as specified by the IMO under clause 3.22.1(a);

Availability_Cost_R(m) is the total Spinning Reserve Service availability payment costs, excluding Load Following costs, for Trading Month m, as calculated under clause 9.9.2(c);

Availability_Cost_LF(m) is the total Load Following Service availability payment costs for Trading Month m, as calculated under clause 9.9.2(d); and

Cost_LRD(m) is the total Load Rejection Reserve Service, System Restart Service, and Dispatch Support Service ~~services~~ payment costs for Trading Month m as specified by the IMO under clause 3.22.1(g).

Clause 9.9.1A has been updated to correct the invalid formula.

9.9.1A. The Ancillary Service settlement amount for Trading Month m for Rule Participant k_i where Rule Participant k ~~Participant i~~ is not a Market Participant is $d(k,i) \times \text{ASP_Payment}(i,m)$ where $d(k,i) = 1$ if ASP i corresponds to Rule Participant k and zero otherwise and ASP_Payment(i,m) is ASP_Payment(i,m), determined in accordance with clause 9.9.3.

Clause 9.9.2 has been updated to use terminology consistent with clauses 3.22.3, 9.9.3 and 9.9.4, and to address several minor and typographical issues.

9.9.2. The following terms ~~related~~ relate to Ancillary Service availability costs:

(a) the total availability cost for Trading Month m:

$$\begin{aligned} \text{Availability_Cost}(m) = & 0.5 \times (\text{Margin_Peak}(m) \times \text{Sum}(d \in D, t \in \text{Peak}, \text{MCAP}(d,t) \\ & \times (\text{Capacity_R_Peak}(m) - \\ & \text{Sum}(i \in I, \text{ASP_SRQ}(i,t) c \in \text{CAS_SR}, \text{ASP_SRQ}(c,t)))))) \\ & + 0.5 \times (\text{Margin_Off-Peak}(m) \times \text{Sum}(d \in D, t \in \text{Off-} \\ & \text{Peak}, \text{MCAP}(d,t) \\ & \times (\text{Capacity_R_Off-Peak}(m) - \\ & \text{Sum}(i \in I, \text{ASP_SRQ}(i,t) c \in \text{CAS_SR}, \text{ASP_SRQ}(c,t)))))) \\ & + \\ & \text{Sum}(i \in I, \text{ASP_SRPayment}(i,m) c \in \text{CAS_SR}, \text{ASP_SRPayment}(c, \\ & m)) \\ & + \text{Sum}(i \in I, \text{ASP_LFPayment}(i,m) \\ & c \in \text{CAS_LF}, \text{ASP_LFPayment}(c,m)) \end{aligned}$$

(b) the Spinning Reserve ~~Cost Share~~ cost share for Market Participant p, which is a Market Generator, for Trading Month m:

$$\begin{aligned}
 \text{Reserve_Cost_Share}(p,m) = & \\
 & 0.5 \times (\text{Margin_Peak}(m) \times \text{Sum}(d \in D, t \in \text{Peak}, \text{MCAP}(d,t) \\
 & \times \text{Reserve_Share}(p,t) \\
 & \times (\text{Capacity_R_Peak}(m) - \text{Sum}(i \in I, \text{ASP_SRQ}(i,t) \\
 & \underline{c \in \text{CAS_SR, ASP_SRQ}(c,t)} - 0.5 \times \text{LFR}(m))) \\
 & + 0.5 \times (\text{Margin_Off-Peak}(m) \times \text{Sum}(d \in D, t \in \text{Off-} \\
 & \text{Peak}, \text{MCAP}(d,t) \\
 & \times \text{Reserve_Share}(p,t) \\
 & \times (\text{Capacity_R_Off-Peak}(m) - \text{Sum}(i \in I, \text{ASP_SRQ}(i,t) \\
 & \underline{c \in \text{CAS_SR, ASP_SRQ}(c,t)} - 0.5 \times \text{LFR}(m))) \\
 & + \text{Sum}(t \in \text{Peak and Off_Peak } T, \text{Reserve_Share}(p,t) \\
 & \times \text{Sum}(i \in I, \text{ASP_SRPayment}(i,m) \\
 & \underline{c \in \text{CAS_SR, ASP_SRPayment}(c,m)} / \text{TITM}))
 \end{aligned}$$

- (c) the total Spinning Reserve ~~Availability Cost~~ availability cost for Trading Month m:

$$\begin{aligned}
 \text{Availability_Cost_R}(m) = & \\
 & \text{Sum}(p \in P, \text{Reserve_Cost_Share}(p,m))
 \end{aligned}$$

- (d) the total Load Following ~~Availability Cost~~ availability cost for Trading Month m:

$$\begin{aligned}
 \text{Availability_Cost_LF}(m) = & \\
 & \text{Availability_Cost}(m) - \text{Availability_Cost_R}(m)
 \end{aligned}$$

Where

t denotes a Trading Interval in Trading Month m;

T is the set of Trading Intervals in Trading Month m;

c denotes a Contracted Ancillary Service;

CAS_SR is the set of Contracted Spinning Reserve Services;

CAS_LF is the set of Contracted Load Following Services;

ASP_SRQ(i,t)-ASP_SRQ(c,t) is the quantity provided by System Management in accordance with clause 3.22.3(b)(ii) for Contracted Spinning Reserve Service c of Spinning Reserve provided by Ancillary Service Provider i in Trading Interval t multiplied by 2, in units of MW (this being one of the quantities referred to in clause 9.9.3);

ASP_SRPayment(i,m)-ASP_SRPayment(c,m) is defined in clause 9.9.4-9.9.3;

ASP_LFPayment(i,m)-ASP_LFPayment(c,m) is defined in clause 9.9.4-9.9.3;

TITM is the number of Trading Intervals in the Trading Month m (excluding any Trading Intervals prior to Energy Market Commencement);

Reserve_Share(p,t) is the share of the Spinning Reserve ~~service~~ Service payment costs allocated to Market Participant p in Trading

Interval t , where this is to be determined by the IMO using the methodology described in clause 3.14.2;

Margin_Peak(m) is the reserve availability payment margin applying for Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(c);

Margin_Off-Peak(m) is the reserve availability payment margin applying for Off-Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(d);

Capacity_R_Peak(m) is the capacity necessary to cover the Ancillary Services Requirement for Spinning Reserve for Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(e);

Capacity_R_Off-Peak(m) is the capacity necessary to cover the Ancillary Services Requirement for Spinning Reserve for Off-Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(f);

LFR(m) is the capacity necessary to cover the Ancillary Services Requirement for Load Following for Trading Month m as specified by the IMO under clause 3.22.1(fA);

~~MCAP(d,t) has the meaning given in clause 9.8.1 and $=0$ if $MCAP(d,t) < 0$~~ MCAP(t) is the greater of zero and the Marginal Cost Administered Price for Trading Interval t calculated in accordance with clause 6.14.2;

~~Peak denotes the set of Trading Intervals occurring during Peak Trading Intervals, where “ t ” refers to a Trading Interval during a Trading Day;~~ is the set of Peak Trading Intervals in Trading Month m ; and

~~Off-Peak denotes the set of Trading Intervals occurring during Off-Peak Trading Intervals, where “ t ” refers to a Trading Interval during a Trading Day;~~ and is the set of Off-Peak Trading Intervals in Trading Month m .

~~D denotes the set of Trading Days within Trading Month m , where “ d ” is used to refer to a member of that set.~~

Clause 9.9.3 has been updated to use terminology consistent with clause 9.9.4 and to apply to all Rule Participants with Ancillary Service Contracts, not just Ancillary Service Providers.

9.9.3. The value of ASP_Payment(i,m) for ~~Ancillary Service Provider~~ Rule Participant i in Trading Month m is the sum of:

- (a) the sum over all ~~Ancillary Service Contracts for Spinning Reserve~~ Contracted Spinning Reserve Services c provided by Rule Participant i of ASP_SRPayment(i,c,m), ~~the payment under that contract;~~

- (b) the sum over all ~~Ancillary Service Contracts for Load Following Contracted Load Following Services~~ c provided by Rule Participant i of ASP_LFPayment(i,c,m), the payment under that contract;
- (c) the sum over all ~~Ancillary Service Contracts for Load Rejection Reserve Contracted Load Rejection Reserve Services~~ c provided by Rule Participant i of ASP_LRPayment(i,c,m), the payment under that contract;
- (d) the sum over all ~~Ancillary Service Contracts for System Restart Contracted System Restart Services~~ c provided by Rule Participant i of ASP_BSPayment(i,c,m), the payment under that contract; and
- (e) the sum over all ~~Ancillary Service Contracts for Dispatch Support Contracted Dispatch Support Services~~ c provided by Rule Participant i of ASP_DSPayment(i,c,m), the payment under that contract

where each of the terms ASP_SRPayment(i,c,m), ASP_LFPayment(i,c,m), ASP_LRPayment(i,c,m), ASP_BSPayment(i,c,m) and ASP_DSPayment(i,c,m) is determined in accordance with clause 9.9.4.

A new clause 9.9.3A is added to define ASP_Balance_Payment(m) now used in clause 9.9.1. ASP_Balance_Payment(m) is the sum of all payments for Ancillary Service Contracts for the Trading Month m, except that the total combined payments for Load Rejection Reserve Service and System Restart Service are limited to Cost_LR(m). This ensures that if Cost_LR(m) is insufficient to cover the ASC payments for Load Rejection Reserve Service and System Restart Service then Verve Energy is not charged for the shortfall.

9.9.3A. The value of ASP Balance Payment(m) for Trading Month m is:

$$\begin{aligned}
 \text{ASP Balance Payment}(m) = & \\
 & \text{Sum}(c \in \text{CAS}_{\text{SR}}, \text{ASP_SRPayment}(c,m)) + \\
 & \text{Sum}(c \in \text{CAS}_{\text{LF}}, \text{ASP_LFPayment}(c,m)) + \\
 & \text{Min}(\text{Cost_LR}(m), \text{Sum}(c \in \text{CAS}_{\text{LR}}, \text{ASP_LRPayment}(c,m))) \\
 & + \text{Sum}(c \in \text{CAS}_{\text{BS}}, \text{ASP_BSPayment}(c,m)), + \\
 & \text{Sum}(c \in \text{CAS}_{\text{DS}}, \text{ASP_DSPayment}(c,m))
 \end{aligned}$$

where

c denotes a Contracted Ancillary Service;

CAS_SR is the set of Contracted Spinning Reserve Services;

CAS_LF is the set of Contracted Load Following Services;

CAS_LR is the set of Contracted Load Rejection Reserve Services;

CAS_BS is the set of Contracted System Restart Services;

CAS_DS is the set of Contracted Dispatch Support Services;

Cost_LR(m) is the amount specified by the IMO for Trading Month m under clause 3.22.1(g)(i) for Load Rejection Reserve Service and

System Restart Service, and Dispatch Support Services except those provided through clause 3.11.8B, and

each of the terms ASP_SRPayment(c,m), ASP_LFPayment(c,m),

ASP_LRPayment(c,m), ASP_BSPayment(c,m) and

ASP_DSPayment(c,m) is determined in accordance with clause 9.9.4.

A new clause 9.9.3B is added to determine the shortfall in the event that Cost_LR(m) is insufficient to cover the Ancillary Service Contract payments for Load Rejection Reserve Service and System Restart Service. This amount will be recovered by the IMO from Market Customers through the Reconciliation Settlement Amount defined in clause 9.11.1.

9.9.3B. The value of Cost_LR_Shortfall(m) for Trading Month m is:

Cost_LR_Shortfall(m) =

Max(0, Sum(c∈CAS_LR, ASP_LRPayment(c,m))

+ Sum(c∈CAS_BS, ASP_BSPayment(c,m))

- Cost_LR(m))

where

c denotes a Contracted Ancillary Service;

CAS_LR is the set of Contracted Load Rejection Reserve Services;

CAS_BS is the set of Contracted System Restart Services;

Cost_LR(m) is the amount specified by the IMO for Trading Month m under clause 3.22.1(g)(i) for Load Rejection Reserve Service and System Restart Service, and Dispatch Support Services except those provided through clause 3.11.8B, and

each of the terms ASP_LRPayment(c,m) and ASP_BSPayment(c,m) is determined in accordance with clause 9.9.4.

Clause 9.9.4 has been updated to clarify that payments are calculated for each Contracted Ancillary Service and Trading Month (as an Ancillary Service Contract could cover the provision of the multiple Contracted Ancillary Services of the same or different types).

~~9.9.4. For each Ancillary Service Provider i and each Ancillary Service Contract~~
Contracted Ancillary Service c, the payments ASP_SRPayment(i,c,m) for Spinning Reserve Service, ASP_LFPayment(i,c,m) for Load Following Service, ASP_LRPayment(i,c,m) for Load Rejection Reserve Service, ASP_BSPayment(i,c,m) for System Restart Service and or ASP_DSPayment(i,c,m) for Dispatch Support Service, as applicable, are for Trading Month m is:

- (a) the applicable monthly dollar value specified by System Management for that Trading Month in accordance with clause 3.22.3(b)(iii)(1); ~~or, if no such value is specified,~~
- (b) where no value is specified under clause 9.9.4(a), the product of the applicable price specified in clause 3.22.3(b)(iii)(2) for that Trading Month and the sum over Trading Intervals in that Trading Month of the applicable quantities specified in clause 3.22.3(b)(ii).

Clause 9.10A.1 has been updated to clarify that NCC(p,m) is a monthly value, remove the superfluous index for Trading Day and correct the clause reference for the non-compliance quantity NCQ.

9.10A.1. The Non-Compliance Charge settlement amount for Market Participant p for Trading Interval t of Trading Day d ~~Month m~~ is:

If Market Participant p is the Electricity Generation Corporation

$$NCC(p,m) = - \text{Sum}(d \in D, t \in T, CP(d,t) \times ABS[NCQ(p,d,t)])$$

Otherwise

$$NCC(p,m) = 0$$

Where

T is the set of all Trading Intervals in Trading Month m, where “t” refers to a member of that set.

~~CP(d,t),~~ is the non-compliance cost applicable in Trading Interval t of Trading Day d as specified in clause 9.10A.2;

NCQ(p,d,t) is the MWh quantity of non-compliance for Market Participant p for Trading Interval t ~~of Trading Day d~~ as specified by System Management in accordance with clause ~~7.13.1(cC);~~ 7.13.1A(a); and

ABS[NCQ(p,d,t)] means the mathematical absolute value of NCQ(p,d,t);

~~D denotes the set of Trading Days within Trading Month m, where “d” is used to refer to a member of that set.~~

~~T denotes the set of all Trading Intervals in Trading Day d, where “t” is used to refer to a member of that set.~~

If Cost_LR(m) is insufficient to cover the Ancillary Service Contract payments for Load Rejection Reserve Service and System Restart Service, then the IMO will need to recover the shortfall (as it will no longer be covered by Verve Energy). The amendment to clause 9.11.1 is to recover the shortfall from Market Customers through the Reconciliation Settlement Amount. The clause has also been amended to clarify that the term NCC(q,m) should not be added for each Trading Interval in the Trading Month.

9.11.1. The Reconciliation Settlement amount for Market Participant p for Trading Month m is:

$$\begin{aligned} \text{RSA}(p,m) = & (-1) \times \text{Consumption_Share}(p,m) \times \\ & (\text{Sum}(q \in P, d \in D, t \in T, \text{BSA}(q,d,t)) \\ & + \text{Sum}(q \in P, \text{NCC}(q,m)) \\ & + \text{Cost_LR_Shortfall}(m)) \end{aligned}$$

Where

Consumption_Share(p,m) is the proportion of consumption associated with Market Participant p for Trading Month m determined by the IMO in accordance with clause 9.3.7;

BSA(q,d,t) is the Balancing Settlement Amount for Market Participant q for Trading Day d and Trading Interval t;

NCC(q,m) is the Non-Compliance Charge settlement amount for Market Participant q for Trading Month m;

Cost_LR_Shortfall(m) is determined in accordance with clause 9.9.3B:

...

Glossary

Contracted Ancillary Service: an Ancillary Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Dispatch Support Service: a Dispatch Support Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Load Following Service: a Load Following Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Load Rejection Reserve Service: a Load Rejection Reserve Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Spinning Reserve Service: a Spinning Reserve Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted System Restart Service: a System Restart Service provided by a Rule Participant under an Ancillary Service Contract.

Dispatch Support Service: Has the meaning given in clause 3.9.9.

Spinning Reserve Service: Has the meaning given in clause 3.9.2.

System Restart Service: ~~The Ancillary Service described~~ Has the meaning given in clause 3.9.8.

APPENDIX 1: FULL DETAILS OF THE PROPOSAL

Background

Verve Energy noted in its Rule Change Proposal that Ancillary Services are used to guarantee the safe, secure and reliable production of electricity on the South West interconnected system (SWIS) by ensuring the system can adequately respond to real time changes in load and generation under a range of scenarios. Ancillary Services are used to control key technical characteristics of the power system such as frequency and voltage. In particular Ancillary Services:

- help maintain Power System Security (ability of SWIS to deliver energy within reliability standards);
- help maintain Power System Reliability (ability of the SWIS to withstand sudden disturbances including restoration in the case of blackout);
- facilitate orderly trading in electricity; and
- ensure that electricity supplies are of acceptable quality.

Ancillary Services are required to support the Wholesale Electricity market (WEM) but are not traded as part of the WEM. Verve Energy noted that System Management is required to procure adequate quantities of these services, either from the Electricity Generation Corporation (Verve Energy) resources (the default option) or on a contestable basis from independent providers (if they provide a lower cost option to Verve's facilities).

System Management will budget the cost of procuring Ancillary Services, with budgeted costs approved by the Economic Regulation Authority. However, System Management will not fund Ancillary Services. Rather, the IMO recovers the costs of the Ancillary Services from Market Participants through the WEM settlement systems, and will use the revenue received to fund Ancillary Services provided by Verve Energy and any contracted Ancillary Service providers.

In the current market design Verve Energy is the default Ancillary Service provider. System Management is however able to contract with other suppliers for any of the Ancillary Services. The settlement system is designed on this basis:

- The total cost of an Ancillary Service is:
 - Proposed by the IMO or System Management; and
 - Determined by the Economic Regulation Authority (ERA) (the ERA could approve the proposal or it could amend the total cost based on its own processes).
- Verve Energy compensation is then determined as the balance from the total after deducting the total payment to other suppliers of Ancillary Services.

In the case of System Restart, the total is proposed by System Management once every three years for the ERA to determine, though there is a provision for System Management to propose a revised total amount for years 2 and 3 of the 3-year review period. These revised totals are also subject to determination by the ERA.

Issue

Verve Energy noted that under the current settlement rules any third party suppliers for System Restart will be paid as set out in their contracts. These payments will then be

deducted from the total determined by the ERA, In the event that, for whatever reason, the ERA sets the System Restart cost to be zero, this will currently give rise to a negative amount to be paid to Verve Energy. Effectively, that will mean that Verve Energy will be charged - actually paying the third party suppliers to supply the System Restart service. On top of making this payment Verve Energy will also be required to provide any further System Restart service in addition to the third party suppliers, as required by System Management under clause 3.11.7A, with no compensation.

Proposal

Verve Energy proposed to amend the settlement equations to remove the anomaly of Verve Energy paying third party suppliers for System Restart when the benefit goes to the market as a whole.

APPENDIX 2: PROPOSED AMENDING RULES IN THE RULE CHANGE PROPOSAL

Verve Energy proposed the following amendments to the Market Rules in its Rule Change Proposal (~~deleted text~~, added text):

A new term ASP_Balance_Payment(i,m) has been introduced replacing the existing term ASP_Payment (i,m) in the definition for Electricity Generation Corporation AS Provider Payment(p,m). Note that ASP_Payment(i,m) continues to be used in the formula. The new term ASP_Balance_Payment(i,m) is determined in a new clause 9.9.3A

9.9.1. The Ancillary Service settlement amount for Market Participant p for Trading Month m is:

$$\begin{aligned} \text{ASSA}(p,m) = & \text{Electricity Generation Corporation AS Provider Payment}(p,m) \\ & + d(p,i) \times \text{ASP_Payment}(i,m) \\ & - \text{Load_Following_Share}(p,m) \\ & \times (\text{Capacity_LF}(m) + \text{Availability_Cost_LF}(m)) \\ & - \text{Reserve_Cost_Share}(p,m) \\ & - \text{Consumption_Share}(p,m) \times \text{Cost_LRD}(m) \end{aligned}$$

Where

the Electricity Generation Corporation AS Provider Payment(p,m) =
0 if Market Participant p is not the Electricity Generation Corporation
and
(Availability_Cost_R(m) + Availability_Cost_LF(m) + Cost_LRD(m))
- Sum(i ∈ I, ASP_Balance_Payment(i,m)) otherwise.

d(p,i) is 1 if ASP i corresponds to Market Participant p and zero
otherwise;

ASP_Payment(i,m) is determined in accordance with clause 9.9.3;

ASP_Balance_Payment(i,m) is determined in accordance with clause 9.9.3A

...

A new clause 9.9.3A is added to define ASP_Balance_Payment(i,m) now used in clause 9.9.1. The new clause parallels the existing clause 9.9.3 except for subclause (c) for Load Rejection Reserve Service and System Restart. In this new subclause payment to Electricity Generation corporation is made non-negative.

9.9.3A. The value of ASP_Balance_Payment(i,m) for Ancillary Service Provider i in Trading Month m for determining the Ancillary Service settlement amount for the Electricity Generation Corporation is the sum of:

- (a) the sum over all Ancillary Service Contracts for Spinning Reserve of ASP_SRPayment(i,m), the payment under that contract;
- (b) the sum over all Ancillary Service Contracts for Load Following of ASP_LFPayment(i,m), the payment under that contract;

(c) for Ancillary Service Contracts for Load Rejection Reserve Service and System Restart:

Max(0, Cost_LR(m) – sum(iel, ASP_LRPayment(i,m)) – sum(iel, ASP_BSPayment(i,m))); and

(d) the sum over all Ancillary Service Contracts for Dispatch Support of ASP_DSPayment(i,m), the payment under that contract

Where

each of the terms ASP_SRPayment(i,m), ASP_LFPayment(i,m), ASP_LRPayment(i,m), ASP_BSPayment(i,m) and ASP_DSPayment(i,m) is determined in accordance with clause 9.9.4 and

Cost_LR(m) is the total Load Rejection Reserve Service and System Restart services payment costs for Trading Month m as specified by the IMO under clause 3.22.1(g)(i)

Having made the Load Rejection Reserve Service and System Restart payment to Electricity Generation Corporation non-negative, if the total amount determined by the Economic Regulation Authority is zero, the IMO will be short after paying the third party suppliers. The amendment to clause 9.11.1 is to recover this payment to third party suppliers from Market Customers through the Reconciliation Settlement Amount. Market Customers are not charged a second time in this process as with Cost_LR having a zero amount for Load Rejection Reserve Service and System Restart these services are not charged in clause 9.9.1.

9.11.1. The Reconciliation Settlement amount for Market Participant p for Trading Month m is:

$$RSA(p,m) = (-1) \times Consumption_Share(p,m) \times \sum(q \in P, d \in D, t \in T, BSA(q,d,t) + NCC(q,m) + ASSA(q,m))$$

Where

ASSA(q,m) is the Ancillary Service settlement amount for Market Participant q for Trading Month m;

...

APPENDIX 3: ADDITIONAL AMENDMENTS MADE BY THE IMO FOLLOWING THE FIRST SUBMISSION PERIOD

The IMO has made some amendments to the Amending Rules following its assessment of the first submission period responses. These changes are as follows (~~deleted text~~, added text):

Clauses 3.22.2 and 3.22.3 have been amended to clarify that if an ASC covers multiple Ancillary Services then System Management will provide details for each of the contracted Ancillary Services, rather than for the ASC as a whole. Clause 3.22.3(b)(ii) has been updated to be more specific about the units of measure used for each Ancillary Service type.

- 3.22.2. When System Management has entered into an Ancillary Service Contract with a Rule Participant, System Management must as soon as practicable and not less than 20 Business Days prior to the Ancillary Service Contract taking effect, provide the IMO with:
- (a) the identity of the Rule Participant; and
 - (b) for each Contracted Ancillary Service the Ancillary Service contracted to be provided by the Rule Participant under the Ancillary Service Contract;
 - i. a unique identifier for the Contracted Ancillary Service;
 - ii. the type of Ancillary Service where this can be one of:
 - 1. Spinning Reserve Service;
 - 2. Load Following Service;
 - 3. Load Rejection Reserve Service;
 - 4. System Restart Service; or
 - 5. Dispatch Support Service; and
 - iii. the form of settlement data that System Management will provide to the IMO for the Contracted Ancillary Service provided by the Rule Participant, where this data must be one of the formats allowed by clause 3.22.3.
 - ~~(c) a unique identifier for the Ancillary Service Contract;~~
 - ~~(d) the form of settlement data that System Management will provide to the IMO for the Contracted Ancillary Service provided by the Rule Participant, where this data must be one of the formats allowed by clause 3.22.3.~~
- 3.22.3. System Management must provide the following information to the IMO for each Rule Participant holding an Ancillary Service Contract for a Trading Month by the date specified in clause 9.16.2(a):
- (a) the identity of the Rule Participant;

- (b) for each Contracted Ancillary Service provided under an Ancillary Service Contract held by the Rule Participant:
- i. the type of Ancillary Service where this can be one of:
 1. Spinning Reserve Service;
 2. Load Following Service;
 3. Load Rejection Reserve Service;
 4. System Restart Service; or
 5. Dispatch Support Service;
 - ii. for each Trading Interval of the Trading Month the quantity of Ancillary Service to a precision of 0.001 units ~~(where no specific unit of measure will be assumed)~~, where the unit of measure is:
 1. MWh for Spinning Reserve Service;
 2. MWh for Load Following Service;
 3. MWh for Load Rejection Reserve Service;
 4. as determined by System Management for System Restart Service; or
 5. as determined by System Management for Dispatch Support Service; and
 - iii. either:
 1. a total monthly payment for the Ancillary Service in dollars and whole cents; or
 2. a price in dollars and whole cents per unit of the quantity described in (ii) per Trading Interval.

~~A new term ASP_Balance_Payment(i,m) has been introduced replacing the existing term ASP_Payment (i,m) in the definition for Electricity Generation Corporation AS Provider Payment(p,m). Note that ASP_Payment(i,m) continues to be used in the formula. The new term ASP_Balance_Payment(i,m) is determined in a new clause 9.9.3A. A new term ASP_Balance_Payment(m) has been introduced, replacing the existing term Sum(i∈I, ASP_Payment(i,m)) in the definition for Electricity Generation Corporation AS Provider Payment(p,m). ASP_Balance_Payment(m) is determined in a new clause 9.9.3A. The term representing the total payment to Market Participant p for Ancillary Services provided under Ancillary Service Contracts has been corrected (“d(p,i) x ASP_Payment(i,m)” replaced with “ASP_Payment(p,m)”).~~

9.9.1. The Ancillary Service settlement amount for Market Participant p for Trading Month m is:

$$\begin{aligned}
 \text{ASSA}(p,m) = & \text{Electricity Generation Corporation AS Provider Payment}(p,m) \\
 & + d(p,i) \times \text{ASP_Payment}(i,m) \text{ ASP_Payment}(p,m) \\
 & - \text{Load_Following_Share}(p,m) \\
 & \times (\text{Capacity_LF}(m) + \text{Availability_Cost_LF}(m))
 \end{aligned}$$

- Reserve_Cost_Share(p,m)
- Consumption_Share(p,m) × Cost_LRD(m)

Where

the Electricity Generation Corporation AS Provider Payment(p,m) =
0 if Market Participant p is not the Electricity Generation Corporation
and

$$(Availability_Cost_R(m) + Availability_Cost_LF(m) + Cost_LRD(m)) - \sum_{(i \in I, ASP_Balance_Payment(i,m))}$$

ASP_Balance_Payment(m) otherwise-;

$d(p,i)$ is 1 if ASP i corresponds to Market Participant p and zero otherwise;

ASP_Payment(ip,m) is the total payment to Market Participant p for Contracted Ancillary Services in Trading Month m, determined in accordance with clause 9.9.3;

ASP_Balance_Payment(i,m) is determined in accordance with clause 9.9.3A for Trading Month m;

Load_Following_Share(p,m) is the share of the Cost_LF(m) allocated to Market Participant p in Trading Month m, where this is to be determined by the IMO using the methodology described in clause 3.14.1;

Reserve_Cost_Share(p,m) is defined in clause 9.9.2(b);

Consumption_Share(p,m) is the proportion of consumption associated with Market Participant p for Trading Month m determined by the IMO in accordance with clause 9.3.7;

Capacity_LF(m) is the total Load Following ~~service~~ Service capacity payment cost for Trading Month m as specified by the IMO under clause 3.22.1(a);

Availability_Cost_R(m) is the total Spinning Reserve Service availability payment costs, excluding Load Following costs, for Trading Month m, as calculated under clause 9.9.2(c);

Availability_Cost_LF(m) is the total Load Following Service availability payment costs for Trading Month m, as calculated under clause 9.9.2(d); and

Cost_LRD(m) is the total Load Rejection Reserve Service, System Restart Service, and Dispatch Support Service ~~services~~-payment costs for Trading Month m as specified by the IMO under clause 3.22.1(g).

Clause 9.9.1A has been updated to correct the invalid formula.

9.9.1A. The Ancillary Service settlement amount for Trading Month m for Rule Participant k-i where Rule ~~Participant k~~ Participant i is not a Market Participant is

$d(k,i) \times \text{ASP_Payment}(i,m)$ where $d(k,i) = 1$ if ASP i corresponds to Rule Participant k and zero otherwise and $\text{ASP_Payment}(i,m)$ is ASP Payment(i,m), determined in accordance with clause 9.9.3.

Clause 9.9.2 has been updated to use terminology consistent with clauses 3.22.3, 9.9.3 and 9.9.4, and to address several minor and typographical issues.

9.9.2. The following terms ~~related~~ relate to Ancillary Service availability costs:

(a) the total availability cost for Trading Month m :

$$\begin{aligned} \text{Availability_Cost}(m) = & 0.5 \times (\text{Margin_Peak}(m) \times \text{Sum}(d \in D, t \in \text{Peak}, \text{MCAP}(d,t) \\ & \times (\text{Capacity_R_Peak}(m) - \\ & \text{Sum}(i \in I, \text{ASP_SRQ}(i,t)_{c \in \text{CAS_SR, ASP_SRQ}(c,t)}))) \\ & + 0.5 \times (\text{Margin_Off-Peak}(m) \times \text{Sum}(d \in D, t \in \text{Off-} \\ & \text{Peak}, \text{MCAP}(d,t) \\ & \times (\text{Capacity_R_Off-Peak}(m) - \\ & \text{Sum}(i \in I, \text{ASP_SRQ}(i,t)_{c \in \text{CAS_SR, ASP_SRQ}(c,t)}))) \\ & + \\ & \text{Sum}(i \in I, \text{ASP_SRPayment}(i,m)_{c \in \text{CAS_SR, ASP_SRPayment}(c,} \\ & \text{m})) \\ & + \text{Sum}(i \in I, \text{ASP_LFPayment}(i,m) \\ & \text{c} \in \text{CAS_LF, ASP_LFPayment}(c,m)) \end{aligned}$$

(b) the Spinning Reserve ~~Cost Share~~ cost share for Market Participant p , which is a Market Generator, for Trading Month m :

$$\begin{aligned} \text{Reserve_Cost_Share}(p,m) = & 0.5 \times (\text{Margin_Peak}(m) \times \text{Sum}(d \in D, t \in \text{Peak}, \text{MCAP}(d,t) \\ & \times \text{Reserve_Share}(p,t) \\ & \times (\text{Capacity_R_Peak}(m) - \text{Sum}(i \in I, \text{ASP_SRQ}(i,t) \\ & \text{c} \in \text{CAS_SR, ASP_SRQ}(c,t)) - 0.5 \times \text{LFR}(m))) \\ & + 0.5 \times (\text{Margin_Off-Peak}(m) \times \text{Sum}(d \in D, t \in \text{Off-} \\ & \text{Peak}, \text{MCAP}(d,t) \\ & \times \text{Reserve_Share}(p,t) \\ & \times (\text{Capacity_R_Off-Peak}(m) - \text{Sum}(i \in I, \text{ASP_SRQ}(i,t) \\ & \text{c} \in \text{CAS_SR, ASP_SRQ}(c,t)) - 0.5 \times \text{LFR}(m))) \\ & + \text{Sum}(t \in \text{Peak and Off_Peak}, \text{Reserve_Share}(p,t) \\ & \times \text{Sum}(i \in I, \text{ASP_SRPayment}(i,m) \\ & \text{c} \in \text{CAS_SR, ASP_SRPayment}(c,m) / \text{TITM})) \end{aligned}$$

(c) the total Spinning Reserve ~~Availability Cost~~ availability cost for Trading Month m :

$$\begin{aligned} \text{Availability_Cost_R}(m) = & \text{Sum}(p \in P, \text{Reserve_Cost_Share}(p,m)) \end{aligned}$$

(d) the total Load Following ~~Availability Cost~~ availability cost for Trading Month m :

$$\text{Availability_Cost_LF}(m) = \text{Availability_Cost}(m) - \text{Availability_Cost_R}(m)$$

Where

t denotes a Trading Interval in Trading Month m;

T is the set of Trading Intervals in Trading Month m;

c denotes a Contracted Ancillary Service;

CAS_SR is the set of Contracted Spinning Reserve Services;

CAS_LF is the set of Contracted Load Following Services;

ASP_SRQ(i,t) ~~ASP_SRQ(c,t)~~ is the quantity provided by System Management in accordance with clause 3.22.3(b)(ii) for Contracted Spinning Reserve Service c of Spinning Reserve provided by Ancillary Service Provider i in Trading Interval t multiplied by 2, in units of MW (this being one of the quantities referred to in clause 9.9.3);

ASP_SRPayment(i,m) ~~ASP_SRPayment(c,m)~~ is defined in clause 9.9.4 ~~9.9.3~~;

ASP_LFPayment(i,m) ~~ASP_LFPayment(c,m)~~ is defined in clause 9.9.4 ~~9.9.3~~;

TITM is the number of Trading Intervals in ~~the~~ Trading Month m (excluding any Trading Intervals prior to Energy Market Commencement);

Reserve_Share(p,t) is the share of the Spinning Reserve ~~service~~ Service payment costs allocated to Market Participant p in Trading Interval t, where this is to be determined by the IMO using the methodology described in clause 3.14.2;

Margin_Peak(m) is the reserve availability payment margin applying for Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(c);

Margin_Off-Peak(m) is the reserve availability payment margin applying for Off-Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(d);

Capacity_R_Peak(m) is the capacity necessary to cover the Ancillary Services Requirement for Spinning Reserve for Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(e);

Capacity_R_Off-Peak(m) is the capacity necessary to cover the Ancillary Services Requirement for Spinning Reserve for Off-Peak Trading Intervals for Trading Month m as specified by the IMO under clause 3.22.1(f);

LFR(m) is the capacity necessary to cover the Ancillary Services Requirement for Load Following for Trading Month m as specified by the IMO under clause 3.22.1(fA);

$MCAP(d,t)$ has the meaning given in clause 9.8.1 and $=0$ if $MCAP(d,t) < 0$; $MCAP(t)$ is the greater of zero and the Marginal Cost Administered Price for Trading Interval t calculated in accordance with clause 6.14.2;

~~Peak denotes the set of Trading Intervals occurring during Peak Trading Intervals, where “t” refers to a Trading Interval during a Trading Day;~~ is the set of Peak Trading Intervals in Trading Month m ; and

~~Off-Peak denotes the set of Trading Intervals occurring during Off-Peak Trading Intervals, where “t” refers to a Trading Interval during a Trading Day;~~ and is the set of Off-Peak Trading Intervals in Trading Month m .

D denotes the set of Trading Days within Trading Month m , where “ d ” is used to refer to a member of that set.

Clause 9.9.3 has been updated to use terminology consistent with clause 9.9.4 and to apply to all Rule Participants with Ancillary Service Contracts, not just Ancillary Service Providers.

9.9.3. The value of $ASP_Payment(i,m)$ for ~~Ancillary Service Provider~~ Rule Participant i in Trading Month m is the sum of:

- (a) the sum over all ~~Ancillary Service Contracts for Spinning Reserve Contracted Spinning Reserve Services~~ c provided by Rule Participant i of $ASP_SRPayment(i,c,m)$, ~~the payment under that contract;~~
- (b) the sum over all ~~Ancillary Service Contracts for Load Following Contracted Load Following Services~~ c provided by Rule Participant i of $ASP_LFPayment(i,c,m)$, ~~the payment under that contract;~~
- (c) the sum over all ~~Ancillary Service Contracts for Load Rejection Reserve Contracted Load Rejection Reserve Services~~ c provided by Rule Participant i of $ASP_LRPayment(i,c,m)$, ~~the payment under that contract;~~
- (d) the sum over all ~~Ancillary Service Contracts for System Restart Contracted System Restart Services~~ c provided by Rule Participant i of $ASP_BSPayment(i,c,m)$, ~~the payment under that contract;~~ and
- (e) the sum over all ~~Ancillary Service Contracts for Dispatch Support Contracted Dispatch Support Services~~ c provided by Rule Participant i of $ASP_DSPayment(i,c,m)$, ~~the payment under that contract~~

where each of the terms $ASP_SRPayment(i,c,m)$, $ASP_LFPayment(i,c,m)$, $ASP_LRPayment(i,c,m)$, $ASP_BSPayment(i,c,m)$ and $ASP_DSPayment(i,c,m)$ is determined in accordance with clause 9.9.4.

The original clause 9.9.3A proposed by Verve Energy in its Rule Change Proposal has been replaced.

9.9.3A. ~~The value of $ASP_Balance_Payment(i,m)$ for Ancillary Service Provider i in Trading Month m for determining the Ancillary Service settlement amount for the Electricity Generation Corporation is the sum of:~~

- ~~(a) — the sum over all Ancillary Service Contracts for Spinning Reserve of $ASP_SRPayment(i,m)$, the payment under that contract;~~
- ~~(b) — the sum over all Ancillary Service Contracts for Load Following of $ASP_LFPayment(i,m)$, the payment under that contract;~~
- ~~(c) — for Ancillary Service Contracts for Load Rejection Reserve Service and System Restart:
 $Max(0, Cost_LR(m) - \sum(i \in I, ASP_LRPayment(i,m)) - \sum(i \in I, ASP_BSPayment(i,m)))$; and~~
- ~~(d) — the sum over all Ancillary Service Contracts for Dispatch Support of $ASP_DSPayment(i,m)$, the payment under that contract~~

Where

~~each of the terms $ASP_SRPayment(i,m)$, $ASP_LFPayment(i,m)$, $ASP_LRPayment(i,m)$, $ASP_BSPayment(i,m)$ and $ASP_DSPayment(i,m)$ is determined in accordance with clause 9.9.4 and~~

~~$Cost_LR(m)$ is the total Load Rejection Reserve Service and System Restart services payment costs for Trading Month m as specified by the IMO under clause 3.22.1(g)(i)~~

A new clause 9.9.3A is added to define $ASP_Balance_Payment(m)$ now used in clause 9.9.1. $ASP_Balance_Payment(m)$ is the sum of all payments for Ancillary Service Contracts for the Trading Month m , except that the total combined payments for Load Rejection Reserve Service and System Restart Service are limited to $Cost_LR(m)$. This ensures that if $Cost_LR(m)$ is insufficient to cover the ASC payments for Load Rejection Reserve Service and System Restart Service then Verve Energy is not charged for the shortfall.

9.9.3A. The value of $ASP_Balance_Payment(m)$ for Trading Month m is:

$$\begin{aligned} ASP_Balance_Payment(m) = & \underline{\underline{Sum(c \in CAS_SR, ASP_SRPayment(c,m)) +}} \\ & \underline{\underline{Sum(c \in CAS_LF, ASP_LFPayment(c,m)) +}} \\ & \underline{\underline{Min(Cost_LR(m), Sum(c \in CAS_LR, ASP_LRPayment(c,m))}} \\ & \underline{\underline{+ Sum(c \in CAS_BS, ASP_BSPayment(c,m)))}} + \\ & \underline{\underline{Sum(c \in CAS_DS, ASP_DSPayment(c,m))}} \end{aligned}$$

where

c denotes a Contracted Ancillary Service;

CAS_SR is the set of Contracted Spinning Reserve Services;

CAS_LF is the set of Contracted Load Following Services;

CAS_LR is the set of Contracted Load Rejection Reserve Services;

CAS_BS is the set of Contracted System Restart Services;

CAS_DS is the set of Contracted Dispatch Support Services;

Cost_LR(m) is the amount specified by the IMO for Trading Month m under clause 3.22.1(g)(i) for Load Rejection Reserve Service and System Restart Service, and Dispatch Support Services except those provided through clause 3.11.8B, and

each of the terms ASP_SRPayment(c,m), ASP_LFPayment(c,m),

ASP_LRPayment(c,m), ASP_BSPayment(c,m) and

ASP_DSPayment(c,m) is determined in accordance with clause 9.9.4.

A new clause 9.9.3B is added to determine the shortfall in the event that Cost_LR(m) is insufficient to cover the Ancillary Service Contract payments for Load Rejection Reserve Service and System Restart Service. This amount will be recovered by the IMO from Market Customers through the Reconciliation Settlement Amount defined in clause 9.11.1.

9.9.3B. The value of Cost_LR_Shortfall(m) for Trading Month m is:

Cost_LR_Shortfall(m) =

$$\frac{\text{Max}(0, \text{Sum}(c \in \text{CAS_LR}, \text{ASP_LRPayment}(c,m)) + \text{Sum}(c \in \text{CAS_BS}, \text{ASP_BSPayment}(c,m)) - \text{Cost_LR}(m))}{1}$$

where

c denotes a Contracted Ancillary Service;

CAS_LR is the set of Contracted Load Rejection Reserve Services;

CAS_BS is the set of Contracted System Restart Services;

Cost_LR(m) is the amount specified by the IMO for Trading Month m under clause 3.22.1(g)(i) for Load Rejection Reserve Service and System Restart Service, and Dispatch Support Services except those provided through clause 3.11.8B, and

each of the terms ASP_LRPayment(c,m) and ASP_BSPayment(c,m) is determined in accordance with clause 9.9.4.

Clause 9.9.4 has been updated to clarify that payments are calculated for each Contracted Ancillary Service and Trading Month (as an Ancillary Service Contract could cover the provision of the multiple Contracted Ancillary Services of the same or different types).

9.9.4. For each Ancillary Service Provider i and each Ancillary Service Contract Contracted Ancillary Service c, the payments ASP_SRPayment(i,c,m) for Spinning Reserve Service, ASP_LFPayment(i,c,m) for Load Following Service,

ASP_LRPayment(i,c,m) for Load Rejection Reserve Service,
 ASP_BSPayment(i,c,m) for System Restart Service and or
 ASP_DSPayment(i,c,m) for Dispatch Support Service, as applicable, ~~are for~~
Trading Month m is:

- (a) the applicable monthly dollar value specified by System Management for that Trading Month in accordance with clause 3.22.3(b)(iii)(1); ~~or, if no such value is specified,~~
- (b) where no value is specified under clause 9.9.4(a), the product of the applicable price specified in clause 3.22.3(b)(iii)(2) for that Trading Month and the sum over Trading Intervals in that Trading Month of the applicable quantities specified in clause 3.22.3(b)(ii).

Clause 9.10A.1 has been updated to clarify that NCC(p,m) is a monthly value, remove the superfluous index for Trading Day and correct the clause reference for the non-compliance quantity NCQ.

9.10A.1. The Non-Compliance Charge settlement amount for Market Participant p for ~~Trading Interval t of Trading Day d~~ Trading Month m is:

If Market Participant p is the Electricity Generation Corporation

$$NCC(p,m) = - \text{Sum}(d \in D, t \in T, CP(d,t) \times ABS[NCQ(p,d,t)])$$

Otherwise

$$NCC(p,m) = 0$$

Where

T is the set of all Trading Intervals in Trading Month m, where “t” refers to a member of that set.

CP(d,t), is the non-compliance cost applicable in Trading Interval t of Trading Day d as specified in clause 9.10A.2;

NCQ(p,d,t) is the MWh quantity of non-compliance for Market Participant p for Trading Interval t of Trading Day d as specified by System Management in accordance with clause ~~7.13.1(c);~~ 7.13.1A(a); and

ABS[NCQ(p,d,t)] means the mathematical absolute value of NCQ(p,d,t);

D denotes the set of Trading Days within Trading Month m, where “d” is used to refer to a member of that set.

~~T denotes the set of all Trading Intervals in Trading Day d, where “t” is used to refer to a member of that set.~~

~~Having made the Load Rejection Reserve Service and System Restart payment to Electricity Generation Corporation non-negative, if the total amount determined by the Economic Regulation Authority is zero, the IMO will be short after paying the third party~~

suppliers. The amendment to clause 9.11.1 is to recover this payment to third party suppliers from Market Customers through the Reconciliation Settlement Amount. Market Customers are not charged a second time in this process as with Cost_LR having a zero amount for Load Rejection Reserve Service and System Restart these services are not charged in clause 9.9.1. If Cost_LR(m) is insufficient to cover the Ancillary Service Contract payments for Load Rejection Reserve Service and System Restart Service, then the IMO will need to recover the shortfall (as it will no longer be covered by Verve Energy). The amendment to clause 9.11.1 is to recover the shortfall from Market Customers through the Reconciliation Settlement Amount. The clause has also been amended to clarify that the term NCC(q,m) should not be added for each Trading Interval in the Trading Month.

9.11.1. The Reconciliation Settlement amount for Market Participant p for Trading Month m is:

$$\begin{aligned} \text{RSA}(p,m) = & (-1) \times \text{Consumption_Share}(p,m) \times \\ & (\text{Sum}(q \in P, d \in D, t \in T, \text{BSA}(q,d,t)) \\ & + \text{Sum}(q \in P, \text{NCC}(q,m) + \text{ASSA}(q,m)) \\ & + \text{Cost_LR_Shortfall}(m)) \end{aligned}$$

Where

~~ASSA(q,m) is the Ancillary Service settlement amount for Market Participant q for Trading Month m;~~

Consumption_Share(p,m) is the proportion of consumption associated with Market Participant p for Trading Month m determined by the IMO in accordance with clause 9.3.7;

BSA(q,d,t) is the Balancing Settlement Amount for Market Participant q for Trading Day d and Trading Interval t;

NCC(q,m) is the Non-Compliance Charge settlement amount for Market Participant q for Trading Month m;

Cost_LR_Shortfall(m) is determined in accordance with clause 9.9.3B;

...

Glossary

Contracted Ancillary Service: an Ancillary Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Dispatch Support Service: a Dispatch Support Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Load Following Service: a Load Following Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Load Rejection Reserve Service: a Load Rejection Reserve Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted Spinning Reserve Service: a Spinning Reserve Service provided by a Rule Participant under an Ancillary Service Contract.

Contracted System Restart Service: a System Restart Service provided by a Rule Participant under an Ancillary Service Contract.

Dispatch Support Service: Has the meaning given in clause 3.9.9.

Spinning Reserve Service: Has the meaning given in clause 3.9.2.

System Restart Service: ~~The Ancillary Service described~~ Has the meaning given in clause 3.9.8.