Independent Market Operator

Reserve Capacity Mechanism Working Group (RCMWG)

Agenda

Meeting No.	1
Location:	IMO Board Room, Level 3, Governor Stirling Tower, 197 St Georges Terrace, Perth
Date:	Wednesday 15 February 2012
Time:	Commencing at 1.00 to 5.00pm

Item	Subject	Responsible	Time
1.	**WELCOME AND APOLOGIES / ATTENDANCE**	**Chair**	10 min
2.	**HISTORY OF RCM**	**Chair**	15 min
3.	**DEFINITION OF CAPACITY**	**IMO**	60 min
4.	**ISSUES FOR CONSIDERATION/PRIORITISATION**	**IMO**	140 min
5.	**PROPOSED RCMWG MEETING DATES FOR 2012**	**IMO**	5 min
6.	**GENERAL BUSINESS**	**IMO**	10 min

Agenda Item 3. Defining Capacity

1. BACKGROUND

At the Market Advisory Committee (MAC) meeting on 5 October 2011, members discussed issues arising out of The Lantau Group report *Review of RCM: Issues and Recommendations*. During that meeting it was agreed that the Reserve Capacity Mechanism Working Group (RCMWG) would be constituted under the auspices of the MAC to consider, assess and develop recommendations to the issues identified by The Lantau Group Report.

A proposed structure and draft Terms of Reference for the RCMWG was presented at the 14 December 2011 MAC meeting. During discussions of the draft Terms of Reference it was suggested that the RCMWG should consider how capacity should be defined. The IMO has prepared this paper to assist in consideration of this definition.

2. DEFINITION OF CAPACITY IN OTHER CAPACITY MARKETS

Reserve Capacity is generally defined as capacity available to meet unanticipated demand in a power system. However, international capacity markets define the capacity product to reflect the context in which it exists and is transacted. This section highlights definitions of Capacity as a product from a few international markets.

PJM Reliability Pricing Model defines Capacity Resources as megawatts of net capacity from existing or planned generation resources or load reduction capability provided by demand resources or ILR (Interruptible Load for Reliability) in the PJM Region.

ISO-New England defines Capacity Product as a call option on energy, contingent on the resourceôs availability, that is purchased by (or on behalf of) load to assure firm electric service consistent with reliability criteria. Both generation resources and demand side resources are included as capacity resources.

New York-ISO uses the concept of Unforced Capacity (capacity after taking into account forced outages) which represents the extent of a facilityôs contribution to satisfy the NYCA Minimum Installed Capacity Requirement (which is based on forecasted peak load and a reserve margin).

The Colombian Electricity Market (XM) defines Capacity as a financial call option with the backing of physical generation resources- which guarantees that sufficient resources will be available to produce firm energy when the requirement arises. Firm energy is defined as the ability to produce energy during a dry period. This reliability constraint is needed because of Colombiaôs high dependence on hydro-electricity.

Recommended Definition of Capacity for RCM: *Reserve Capacity is the capacity to generate electricity and send it out into a network forming part of the SWIS, or to reduce the consumption of electricity at a point of connection to a network forming part of the SWIS, that contribute to satisfying the Reserve Capacity Requirement.*

3. KEY FEATUES OF US CAPACITY MARKETS

This section summarizes the main features of capacity markets in the US. The auction-based capacity markets of PJM, ISO-NE and NY-ISO are designed to encourage investment in new generation in the absence of transparent price signals that would result from an efficient market. The markets aim to achieve sufficient capacity to provide for a target level of reliability. Reliability is defined by locational constraints - capacity resources in locations that are subject to network constraints are typically valued higher than resources in locations that are not experiencing constraints.

However, there are significant differences in key features of these markets. The table below highlights these differences:

Capacity Market Features	**PJM**	**ISO-NE**	**NY-ISO**
Capacity Procurement	Mandatory Auction with forward resource adequacy requirement placed on Load-Serving Entities (LSEs)	Mandatory Auction with forward resource adequacy requirement placed on Load-Serving Entities (LSEs)	Mandatory Auction with short-term resource adequacy requirement placed on LSEs
Capacity Market Schedule	Base Residual Auction 3 years prior to start of the delivery year followed by up to 3 readjustment auctions. Bilateral market allowed for covering any auction commitment shortages	Forward Capacity Auction 3 years prior to start of the delivery year with 3 annual readjustment auctions as well as monthly auctions held prior to each commitment month	Capability Period Auction which is a 6-month strip auction to provide forward capacity for the full 6 month period, followed by monthly auction to provide forward capacity for each remaining month. Installed Capacity (ICAP) Spot Market Auction held days before the commitment month begins provides LSEs final opportunity to meet capacity obligations
Shape of demand curve in auctions	Downward sloping demand curve	Descending clock auction based on the elasticity of supply	Downward sloping demand curve

Capacity Market Features	PJM	ISO-NE	NY-ISO
Obligations on Demand-Side Programs	Three different types of Load Management- Direct Load Control, Firm Service Level and Guaranteed Load Drop. Loads must be able to drop for six hours every day (different hours are specified depending on the season)	Five different products- Real-time Demand Response, Real-time Emergency Generation, Critical Peak, On Peak and Seasonal Peak. Each type has its specific obligations, but all Demand-Side programs must both offer and deliver capacity in all 12 months of the year	Installed Capacity Special Case Resources (SCR) are allowed to bid into capacity market. They must commit to a load reduction of at least 100 kW with 100 kW increments, subject to a one-hour verification through actual events or NY-ISO initiated tests
Performance incentives	Capacity payments are made based on installed capacity as well as capacity available during hours when the system is experiencing reserve shortages	Capacity payments are made based on installed capacity as well as capacity available during hours when the system is experiencing reserve shortages	Capacity payments are tied to Unforced Capacity (UCAP) which is the percentage of load that a generator is capable of serving taking into account a rolling average of forced outage rates.

Agenda Item 4. Prioritization of Issues for Consideration by the RCMWG

1. BACKGROUND

At the Market Advisory Committee (MAC) meeting on 5 October 2011, members discussed issues arising out of The Lantau Group report *Review of RCM: Issues and Recommendations*. During that meeting it was agreed that the Reserve Capacity Mechanism Working Group (RCMWG) would be constituted under the auspices of the MAC to consider, assess and develop recommendations to the issues identified by The Lantau Group Report.

The IMO has prepared this paper to assist in prioritising issues that were presented in The Lantau Group report. The paper also separates issues that may fall under the purview of the Reserve Capacity Mechanism but are being considered in other reviews or work streams.

The IMO Board has requested that the RCMWG complete its review within 9 months. The IMO has taken this into account in the order of priority presented below.

2. PRIORITISATION OF ISSUES

The following order of priority is proposed to be applied to the Issues List included in the RCMWG Terms of Reference:

1. The definition of capacity
2. The issues that impact surplus capacity
    - The consistent capacity surpluses secured in the Wholesale Electricity Market (WEM)
    - The pricing of capacity in oversupply conditions
    - The additional costs imposed on the market as a result of surplus capacity.

      Recommendation: The Lantau Group recommends considering amendment of the formula for calculating the Reserve Capacity Price
3. Performance requirements for reserve capacity
    - The role of Demand Side Management in the RCM

      Recommendation: The Lantau Group suggests harmonising the treatment of demand-side and supply-side by increasing the minimum availability requirement for Demand Side Programmes
    - The fuel requirements imposed on generation capacity providers

      Recommendation: The Lantau Group suggests refinement of the fuel supply requirement
4. The allocation of capacity costs to Market Customers (Individual Reserve Capacity Requirements)

   Recommendation: The Lantau Group suggests refinement of the method for determining Individual Reserve Capacity Requirements

5. The impact of forecasting inaccuracy on the RCM
6. The alignment of the implementation of a dynamic Reserve Capacity refund regime and the potential changes to the RCM resulting from the deliberations of the RCMWG on Issues 1-5

   Recommendation: The Lantau Group suggests implementation of a dynamic Reserve Capacity refund regime in which the value of refunds is linked to system conditions
7. The timeline and scope of a periodic review of the RCM

   Recommendation: The Lantau Group suggests a periodic review of the RCM

3. EXCLUSIONS FROM THE SCOPE OF THE REVIEW

As noted above, the IMO Board has requested that the RCMWG complete its review within 9 months. For this purpose, discussions will be limited to the priority list and the following issue areas will fall outside the scope of the RCMWGôs considerations:

1. *The Maximum Reserve Capacity Price (MRCP) methodology.* The MRCP methodology was reviewed by the MRCP Working Group, with the Procedure Change Process being completed on 21 October 2011. Amendments to the Market Procedure to enact the MRCP Working Groupôs deliberations were put forward in the *Procedure Change Proposal: 5-Yearly Review of the Methodology and Process for Determining the MRCP* (PC_2011_06). The amended Market Procedure commenced on 24 October 2011.
2. *The allocation of Capacity Credits to Intermittent Generators.* This issue was reviewed by the Renewable Energy Generation Working Group (REGWG), with the Rule Change Process concluding on 20 December 2011. The Amending Rules resulting from the IMO Boardôs considerations of the two Rule Change Proposals:
   - Calculation of the Capacity Valuation of Intermittent Generation ï Methodology 1 (IMO) (RC_2010_25); and
   - Calculation of the Capacity Valuation of Intermittent Generation: Methodology 2 (Griffin Energy) (RC_2010_37)

   resulted in a change to the valuation methodology for Intermittent Generators which commenced at 8:00am on 1 January 2012.
3. *The classification of outages.* Issues pertaining to the outage planning process (i.e. classification of Forced Outages) were considered by PA Consulting in undertaking the five-yearly review of the outage planning process prescribed under clause 3.18.18. The Final Report from PA Consulting was published on 10 October 2011. The IMO intends to progress the recommendations from the review in mid 2012.
4. *The Planning Criterion and the methodology for forecasting the Reserve Capacity Requirement.* As required under clause 4.5.15 of the Market Rules, the Planning Criterion and process by which the IMO forecasts peak SWIS demand will be the subject of a separate 5 yearly review during 2012.
5. *Dual fuel incentives*. The issue of incentivizing dual fuel is not on the agenda as policy direction is awaited from Office of Energy.

Agenda Item 5. Proposed RCMWG Meeting Dates FOR 2012

The proposed dates for RCMWG meetings in 2012 are contained in the table below. Note that RCMWG meetings will occur on the day prior to each MAC meeting.

The meeting time, subject to change on some occasions, is 2.00 ï 5.00 pm.

Table 1: Proposed RCMWG Meeting Schedule for 2012

Month	Meeting #	Date
March	2	13 March 2012
April	3	TBC
May	4	8 May 2012
June	5	12 June 2012
July	6	10 July 2012
August	7	7 August 2012
September	8	11 September 2012
October	9	9 October 2012