Independent Market Operator

Reserve Capacity Mechanism Working Group (RCMWG)

Agenda

Meeting No.	8
Location:	IMO Boardroom, Level 17, Governor Stirling Tower, 197 St. Georges Tce, Perth
Date:	Thursday 11 October 2012
Time:	2:00 pm to 5:00 pm

Item	Subject	Responsible	Time
1.	**WELCOME**	**Chair**	2 min
2.	**APOLOGIES / ATTENDANCE**	**IMO**	2 min
3.	**MINUTES FROM MEETING 7**	**IMO**	10 min
4.	**ACTIONS ARISING**	**IMO**	60 min
5.	**RESERVE CAPACITY PRICE** *Discussion by Mr Mike Thomas*	**The Lantau Group**	90 min
6.	**GENERAL BUSINESS**	**Chair**	5 min

Reserve Capacity Mechanism Working Group

Minutes

Meeting No.	7
Location:	IMO Boardroom Level 17, 197 St Georges Terrace, Perth
Date:	Thursday 13 September 2012
Time:	Commencing at 2.10pm – 5.20pm

Attendees	Class	Comment
Allan Dawson	Chair	
Suzanne Frame	IMO	
Andrew Sutherland	Market Generator	
Brad Huppatz	Market Generator (Verve Energy)	
Ben Tan	Market Generator	Left at 4.40 pm
Shane Cremin	Market Generator	
Wendy Ng	Market Customer	
Geoff Gaston	Market Customer	Proxy
Steve Gould	Market Customer	
Stephen MacLean	Market Customer (Synergy)	
Andrew Stevens	Market Customer/Generator	
Jeff Renaud	Demand Side Management	
Geoff Down	Contestable Customer	
Justin Payne	Contestable Customer	
Brendan Clarke	System Management	
Wana Yang	Observer (Economic Regulation Authority)	
Paul Hynch	Observer (Public Utilities Office)	Left at 5:00 pm
Apologies	**Class**	**Comment**
Patrick Peake	Market Customer	
Also in attendance	**From**	**Comment**
Richard Tooth	Presenter (Sapere Research Group)	
Mike Thomas	Presenter (The Lantau Group)	
Aditi Varma	Minutes	
Fiona Edmonds	Observer	
Jenny Laidlaw	Observer	
Natasha Cunningham	Observer	

George Sproule	Observer	

Item	Subject	Action
1.	**WELCOME AND APOLOGIES / ATTENDANCE** The Chair opened the seventh meeting of the Reserve Capacity Mechanism (RCM) Working Group (RCMWG) at 2:10pm. The Chair welcomed the members in attendance and noted Mr Patrick Peake's apology.	
2.	**MINUTES ARISING FROM MEETING 5** The following amendments were noted: • On page 5, Mr Brad Huppatz requested the following change: *Mr Brad Huppatz noted Verve Energy's support for the dynamic regime but added that ~~with~~ increasing risk and uncertainty must be balanced by a lowering of expected refunds ~~a Market Participant's exposure in the market will increase.~~* • On page 8, members asked for the following change: *~~The Chair noted that the members agreed that the proposed approach seemed the most efficient and feasible solution in the short - term.~~* Discussion ensued among members on decisions made on the Reserve Capacity Price (Work Stream 1) in the previous meeting. The following points were noted: • Mr Ben Tan and Mr Stephen MacLean noted that the ensuing email conversations after the last meeting indicated that a common understanding on the issue of Reserve Capacity Price had not been reached and that the effects of the recent reduction in the Maximum Reserve Capacity Price (MRCP) needed to be further assessed. • Discussion ensued on whether this work-stream should be opened for discussion again. Mr Shane Cremin noted that members had discussed that there could be better solutions to deal with the over-supply of capacity, but *in the short term* a framework was needed to deal with the current problem. • Mr Andrew Stevens queried if there was general agreement on the fundamental framework of the model, not on the numbers illustrated in it per se. Mr MacLean noted that following his discussions with Mr Mike Thomas, the model presented might not be practical in achieving the objective of incentivising bilateral contracting. Mr Cremin noted that the implications around bilateral contracting being further incentivised required additional examination. He added that there was a need for further discussion around the structural framework which should be followed. Mr Stevens agreed with Mr Cremin. Mr MacLean added that from the point of view of retailers, retailers would like to hedge their risks by contracting up to the amount of their liability and would not like to see other transactions take place in the market that could impose an extraneous cost to them. • Mr Thomas observed that it was important that the members	

	divide the two questions: does the proposed solution improve the current situation; and whether the proposed solution is the most suitable option that the members would like to progress. Mr Cremin noted that the working group needed a better understanding of how the proposed solution would deliver in the market. Mr MacLean observed that in the past, other more complicated price reduction methodologies had been used to deal with the excess capacity problem. He noted that if a broader reform of the Reserve Capacity Mechanism was the issue to be addressed, it might be useful to give some thought to whether the RCMWG was the appropriate group to deal with it. • The Chair observed that the IMO Board had laid out the terms of reference for the RCMWG as addressing the problem of excess capacity by using price as a signal for entry or exit of capacity. He added that the IMO Board was aware of the impact of the MRCP review on the market and had indicated to Mr Thomas that a material change in MRCP may be sufficient to address the oversupply issue. The Chair also added that the recent Weighted Average Cost of Capital (WACC) determination for Western Power would impact the MRCP for 2016/17. Mr MacLean disagreed and added that Synergy had offered a different proposal with fewer changes suggesting that if a Market Participant made a bilateral declaration in a Capacity Year, then the IMO should not pay that Market Participant for that year. Members discussed the pros and cons of Synergy's proposal. • The Chair observed that after all the discussions; if the group believed that a credible case for change could not be made, then that would be reasonable advice to provide to the IMO Board. • Mr MacLean suggested that the RCMWG consider Mr Cremin's proposal for a broader review to be undertaken to evaluate the RCM holistically. Mr Cremin noted that in his opinion, the RCM was not entirely suitable in the Wholesale Electricity Market. He added that issues around having an unconstrained network, lack of locational signals, continued use of old generation assets etc. were not being considered in the current review. If those issues had to be dealt with, a new working group may have to be created. • Some discussion ensued on the WACC determination used in the MRCP review. The Chair also added that the IMO would recalculate the MRCP with an updated WACC component and present the results at the next RCMWG meeting. *Action Point: The IMO to publish amended minutes of RCMWG meeting no.5 on the Market Web Site.* *Action Point: The IMO to recalculate the MRCP with an updated WACC component and present the results at the next RCMWG meeting.*	
3.	**ACTIONS ARISING** Ms Suzanne Frame noted that Action Item 1(The Lantau Group to investigate the options for implementing a dynamic capacity refund mechanism and present to the RCMWG for discussion) was on the agenda. She noted that Action Item 2(The IMO to include information on	

	the cost effectiveness of proposed solutions or harmonisation) was in progress.	
4.	**INDIVIDUAL RESERVE CAPACITY REQUIREMENT (IRCR) (WORK STREAM 4)** The Chair invited Dr Richard Tooth to present his paper. The following points of discussion were noted: • There was discussion among members on non-temperature dependent loads and their behaviour in the market. Mr Geoff Gaston observed that the IRCR could not affect market behaviour because the Trading Intervals used for IRCR calculations are not known by Market Customers even 6-8 months after a peak temperature event. If industrial loads wanted to take advantage, they would have to start reducing their consumption each time the temperature went above 35 degrees, because they would never know for sure what peak intervals are being used for the IRCR calculation. This is generally not possible for industrial loads. Mr MacLean added that whereas in the past, the peak event used to occur in late February, now temperatures are high almost throughout the summer period, implying that customers would have to try and reduce their demand over the entire summer period because they do not have any indication of a peak event beforehand. Discussion ensued on the potential of the peak moving more towards occurring during the evening as more solar PV cells connect to the grid, which might induce some industrial/commercial loads to shut down early and take advantage of a lower electricity bill. • On the topic of selection of peak Trading Intervals for IRCR allocation, the members agreed to proposal 1 i.e., the peak Trading Intervals selected for IRCR calculations would be changed to be selected from Trading Days with the highest peak demand rather than the highest daily consumption. • Ms Wendy Ng requested clarification on whether the scope of this work included exploring alternative methodologies for calculating IRCR. Dr Tooth answered that the scope was limited to evaluating the current calculation of IRCR. Ms Ng noted that there may be some potential to make the calculation more real-time by aligning it with metering data. She added that the IRCR could be calculated using a load profile weighting mechanism similar to the methodology for capacity refunds. Dr Tooth observed that IRCR was a division of a pie among Market Customers and that any sort of change to the methodology would result in winners and losers. • Following the presentation of proposal 2 (the number of Trading Intervals for IRCR calculation is not modified) and 3 (there is no change to the use of the median value in the IRCR calculation); the Chair asked members if there was agreement with regards to presenting the three proposals as advice from the working group to the IMO Board. Ms Ng noted her support in the absence of any other analysis for alternative methodologies for calculating the IRCR. Mr MacLean noted that he was not convinced that other viable options, such as annualising the capacity cost, did not exist. • On the relationship between Relevant Demand (RD) and IRCR, Mr Renaud asked for clarification on the definition of	

gaming. He added that in his view gaming, to the extent that RD and IRCR intervals overlap, would mean a customer requesting a higher RD in an interval because of a maintenance issue while simultaneously not accepting the lower IRCR adjustment. He added that his position on the issue was that the RD and IRCR intervals had no interaction with each other because they were intended for different purposes. He further added that he was supportive of a change that removed the potential for double benefits whenever there was overlap between RD and IRCR intervals. Mr Renaud added that there should be a provision in the Market Rules for adjustment to the IRCR when the Trading Intervals coincide with the RD Trading Intervals.

- In response to proposal 4 (i.e., consideration be given to limiting the modifications to load values used in the RD calculation whereby the modified RD values cannot exceed the Associated Load's IRCR Calculation of contribution to the system peak load) Mr Renaud noted that the basis for comparison with RD should be the uplifted IRCR, not the unadjusted IRCR. He added that the unadjusted IRCR is roughly 3800 MW whereas there were 5300 MW of Capacity Credits.
- Mr Brendan Clarke queried if there was any option to remove the IRCR Trading Intervals from those selected in the RD calculation. He added that there were 32 Trading Intervals which could be eliminated from the RD calculation so that there would be no chance of a double benefit being received. Dr Tooth responded that this restriction would not prevent gaming. Mr Renaud reiterated that in his opinion, the concern with gaming the IRCR outside of RD Trading Intervals was a broader question that was independent of the calculation of RD. He stated that the concern with gaming IRCR was if there was an incentive in the system to manipulate IRCR to one's personal benefit without providing a manifest benefit in decreasing the load forecast and so reducing the amount of capacity required. At this point, the Chair asked the members for their opinion on a potential situation where a Market Customer or a DSP would have more Capacity Credits to sell based on its adjusted or uplifted IRCR. Mr Tan noted that this perspective may change if the market had a capacity shortfall rather than excess.
- Mr Renaud further added that the debate was really about the two extremes: one focussing on the contribution to the system peak in the purest sense- the IRCR; and the other focussing on a truly dynamic baseline approach which was related to the amount of energy and capacity that a DSP could deliver when System Management needed it. This was irrespective of what the load did for the rest of the year. He observed that based on the IMO adopting the philosophical position that you could not sell what you did not buy, he could understand the position that the RD should not be above the uplifted IRCR.
- Mr MacLean proposed that the RD for a DSP should not exceed the expected peak demand (as measured by the IRCR for each load comprising the DSP). Mr Renaud contested this on the grounds that DSPs were paid for capacity on the basis of what they could deliver to the market when needed whereas linking RD to IRCR would be an artificial linkage that does not relate to what the market is

	paying for. Mr MacLean used the example of generators being rated for their effectiveness at an ambient temperature of 41 degrees whereas RD was calculated across four summer months, not the absolute peak days. He added that the equivalent would be to relate the RD to the 12 Trading Intervals used for IRCR as that would link it with the peak days. Mr Renaud noted that this was an issue related to the RD methodology not its linkage with IRCR. • The Chair observed that it would be useful to conduct some analysis on the number of RD Trading Intervals that coincide with IRCR Trading Intervals in the past 12 months to assess the significance of the issue. • Dr Steve Gould questioned when the application for an adjustment for maintenance is made by a DSP; whether prior to the notification of the relevant Trading Intervals or after. Mr Ruthven responded that some were made before the notification and some after. Dr Gould noted that in his opinion, the analogy for this adjustment was the application for a Planned Outage which is made in advance. He questioned why the notification of the adjustment could not be made in advance without knowledge of what the weather was on that particular day. Mr Renaud noted that that would involve a fairly large administrative exercise in terms of proactively filling applications for as many as 500 loads to assess their list of maintenance outages and submitting it to the IMO. The Chair also added that generator Planned Outages are currently managed by System Management and the number of generators was much lower than the number of loads. *Action Point: The IMO and Sapere Research Group to conduct analysis on the number of RD Trading Intervals that coincide with IRCR Trading Intervals in the past 12 months to assess the significance of the issue of gaming.*	
5	**RESERVE CAPACITY FORECASTING METHODOLOGY** The Chair invited Mr Ruthven to make his presentation. The following points of discussion were noted: • Mr Cremin observed that the forecasts from the IMO in relation to block loads connecting to the grid were different from that of Western Power. He queried whether there was consultation between the two entities on these forecasts. Mr Tan also queried why the forecasts were so different. The Chair responded that the IMO evaluated each project individually with regard to its likelihood of connecting to the grid and shared these details with Western Power. • The Chair noted that the forecasting methodology was currently under a five-year review and ACIL Tasman had been engaged to prepare a draft report that was going to be published the following Monday (17 September 2012).	
6.	**MOVING TO A DYNAMIC CAPACITY REFUND REGIME** The Chair invited Mr Mike Thomas to make his presentation. The following discussion points were noted: • Mr MacLean queried Mr Thomas if a different overnight capacity refund charge should be considered when the variation in load is considerably less and the need for	

	substantial reserve margin does not exist. Mr Thomas responded that this should be one of the questions to consider. • There was some discussion among members on the effect of dynamic refunds on the energy prices and that ultimately the impact of dynamic refunds may get built into bilateral contracts. • Discussion ensued on the slope of the refund exposure. Mr Thomas noted that the proposed option for consideration of recycling of refunds would reduce the burden of penalties by giving both a reward and a penalty simultaneously. Mr Cremin noted that the recycling approach also reinforced the value proposition of different facilities. He observed that ideally an inferior generator should be liable to pay more refunds. This would further incentivise a mix of reliable, more efficient plants. Mr Stevens added that the incentive or the reward should be there to incentivise generators to run. His opinion was that at the moment, generators react to the high risk in the market associated with refund exposure. Mr MacLean noted that the real test of the implementation of a dynamic refunds regime would be how bilateral contracts get re-written. • The Chair noted that the discussions indicated that these ideas required further consideration. He added that more analysis should be done on increasing certain refund factors to increase exposure during more critical periods. Mr MacLean added that more detail was needed on steepening the slope and concentrating more refund risk into peak months. Mr Sutherland added that the curve showing capacity factor, utilisation factor and refunds paid should reflect the actual scenario. • Ms Wana Yang provided a comment on availability of generating plants in the market. She observed that plants which have high rates of Planned Outages should be penalised by the refund mechanism. The Chair clarified that the IMO Board had evaluated particular clauses in the Market Rules which allowed the IMO to not allocate Capacity Credits to facilities which had a combined Forced and Planned Outage rate of greater than 30% over the past 36 months. He added that the IMO Board had considered allocating Capacity Credits to those facilities because of various security and reliability reasons. He further added that the IMO Board had requested an evaluation of these clauses to ensure that they provide incentives to improve performance and to expose poorly performing plants to refunds if they were above a certain threshold of outage rates. He noted that the IMO would embark upon this piece of work over the next few months. *Action Point: The Lantau Group to conduct further analysis on various issues and present a preferred proposed dynamic refund regime.*	
	CLOSED The Chair thanked the members and declared the meeting closed at 5.20 pm.	

Independent Market Operator

Reserve Capacity Mechanism Working Group (RCMWG)

Agenda item 4: RCMWG Action Points

Legend:

Shaded	Shaded action points are actions that have been completed since the last RCMWG meeting.
Unshaded	Unshaded action points are still being progressed.

#	Action	Responsibility	Meeting arising	Status/Progress
1	The Lantau Group to investigate the options for implementing a dynamic capacity refund mechanism and present to the RCMWG for discussion.	The Lantau Group	July	Completed
2	The IMO to include information on the cost effectiveness of proposed solutions or harmonisation	IMO	April	In progress
3	The IMO to recalculate the MRCP with an updated WACC component and present the results at the next RCMWG meeting.	IMO	September	Completed
4	The IMO and Sapere Research Group to conduct analysis on the number of RD Trading Intervals that coincide with IRCR Trading Intervals in the past 12 months to assess the significance of the issue of gaming.	IMO & Sapere Research Group	September	In progress
5	The Lantau Group to conduct further analysis on various issues and present a preferred proposed dynamic refund regime.	The Lantau Group	September	In progress

Reserve Capacity Price: Recommendation

Mike Thomas

October 2012

THE LANTAU GROUP
strategy & economic consulting

My views

- The RCM can be improved significantly
  - Valuable incentives are distorted
  - Responsiveness to market conditions is poor

- Primary concern is not quantity of excess reserve capacity per se, but
  - who pays for it;
  - how much do they pay for it and
  - what is it worth
  - For example the RCM results in a residual "shared capacity cost" allocation to retailers across a range of scenarios that cannot be hedged or managed in commercially sensible ways

- In addition to the RCM, concern that the RCM and the refunds regime need to be considered together, for consistency

How to improve the RCM

- Basic problems stem from two features of the current RCM
  - Not sufficiently dynamic to respond appropriately to market conditions
  - No symmetrical incentives for capacity providers and capacity users to manage risk through contracts

- A range of options have been considered over the past 18 months, falling into two broad categories:
  - Limit access to credits if there is already enough (QUANTITY)
  - Reduce incentive for capacity providers to develop more capacity if there is already enough (PRICE)

- We consider insights from other markets with working capacity mechanisms
  - What sort of quantity adjustment
  - What kind of price adjustment
  - What sort of risk exposure

- We then apply these concepts and insights to develop a recommendation for the WEM

Option: Limiting Quantity Certified

- If the underlying technical performance and energy market cost characteristics were exactly the same across all types of capacity (existing and new), then it would be trivial to limit new certification whenever there is excess
  - If “new” is exactly the same as “existing”, then they are completely fungible, and there is no point in certifying “new” when there is plenty of “existing”
- But this is not the situation
  - Innovation and technical performance differences exist
  - Different energy cost performance characteristics are possible
- Conferring “protection” on existing capacity is not consistent with a dynamic market with pressure for improved performance over time

Not Recommended

Stifles innovation
Protects inefficient capacity
Creates awkward gate-keeper role
Does not reward “value”
Does not reflect market risk
Inconsistent with energy market

IMO?

Option: “Truth in Declaration plus Auction”

- Synergy proposed that the IMO would make no payment to capacity electing a bilateral declaration ensuring a truth to the declaration
  - This could be implemented starting in the 2015/16 capacity year allowing uncontracted capacity three years to negotiate bilateral arrangements.
- Capacity remaining uncontracted for the 2015/16 capacity year may offer itself to the auction, if bilateral declarations are less than required; remain credited and receive no payment from the IMO; or if those alternatives are uneconomic, remove itself from the mechanism.
  - Throughout this process of bilateral contracting and excess capacity either remaining credited or exiting the market, the IMO must ensure that capacity requirements of all Availability Classes are met and initiate an auction where there is shortfall of bilateral trade offers.

Not Recommended

Appears to solve problem of retailers bearing the cost of excess capacity, but….

By removing / reducing IMO backstop, it increases impact of credit or counterparty risk to the detriment of competition – favors government-backed entities

Auction does not resolve the zero / infinity problem

Main benefit appears to be reduction of shared capacity costs – which can be achieved in other ways

Option 3A: “Buy / Sell Spread” Version 1

- Synergy Proposal
  - Uncontracted capacity receive payment from the IMO, albeit at a reduced rate. This payment should be set at no more than XX% of the MRCP.
  - A retailer not covering its capacity requirement would pay a value that is greater than what the capacity resource receives.

Not Recommended

Does not dynamically adjust with market condition

Market power issues on credit procurement based on counterparty risk given absence of backstop and exposure to “reduced” price

Could expose retailers to market power given contrived exposure to full MRCP rate – as “full MRCP rate” is not dynamically revised with market conditions

Does not explicitly address issue of excess capacity without additional mechanisms or assumptions

Must resolve disposition of “spread” revenue to avoid unintended incentives

May be inconsistent / incompatible with existing contractual definitions of the RCP

Option 3B: “Buy / Sell Spread” Version 2

- As discussed in July WG Session
  - Credits purchased by the IMO would be purchased at a discount to the RCP; credits sold by the IMO would be sold at a premium
  - Suggest adding a “slope” to the buy/sell prices so that they adjust based on the amount of excess reserve capacity

Not Recommended

Contracting incentive relates more to size of spread than to exposure to excess reserve capacity

Could be structured to address symmetry and expected value problems of Synergy version

Must resolve disposition of “spread” revenue to avoid unintended incentives

May be inconsistent / incompatible with existing contractual definitions of the RCP

Option: Auction
A workable auction must address the zero / infinity problem, which is not trivial

1. Introduce additional risk to the retailer so that there is "value" in being over-contracted

   Eliminate clear certainty of number of credits required for any given year – make the amount conditional on outcomes plus a margin. Set up the date for the auction sufficiently ahead of time so that the retailer may need to impute value to the risk of being over-contracted – effectively transmitting value to potential "excess" capacity credits

2. Introduce multiple tranches of auctions based on different forward dates

   An auction 1 year from the date may imply significant zero/infinity risk, but this can be reduced if other auctions are held two years out, three years out, etc, such that the total exposure to "zero / infinity" risk is reducing (hopefully) as the actual target date approaches.

3. Impose constraints on auction price outcomes so as to avoid the zero / infinity problem
   1. Buy / Sell spread
   2. Caps or Floors

4. Auction multi-year credits (blend time periods) so that zero value for a single year is blended with rising values in later years
   1. Supplementary Reserve Auction reflects this principle to a degree
   2. But alternative is to use three or five year "products"

5. Complement the formal auction with short-term trading to allow rebalancing of requirements

Not Recommended

Complexity in a small lumpy market

Volatility / Risk

May reduce competition depending on perceptions of contracting alternatives

Addition of "mitigation" of zero/infinity problem makes auctions look more like a managed solution

We derive insights from auctions and other market mechanisms

- Insight 1
  - When excess reduces price go up, and retailers face higher exposure if they are not contracted
  - When excess increases, prices go do, and generators face higher exposure if they are not contracted
- Insight 2
  - The rate of fall off or increase is very steep in economic terms – implying considerable risk to be managed
  - But complex auction processes / designs endeavor to avoid the zero/infinity problem of capacity value
- Insight 3
  - Backstop processes are usually present to either support or promote competition and facilitate timely capacity
- Insight 4
  - The value of avoiding shortage is universally viewed as greater than the cost imposed by some excess

Recommended Approach

- Proposal requirements
  - Be consistent with market-based approaches
  - Mitigate zero / infinity risk
  - Be compatible with prudent risk management practices
  - Be aligned with sensible long-term market evolution direction
  - Be implementable at reasonable costs

- Recommendation Outline
  - Increase “85%” parameter to above 100%
  - Set the “slope” to be steeper than “-1” to create greater market sensitivity for all stakeholders, more in line with what an auction would yield

- Evaluation criteria
  - Sensible symmetry of risks for stakeholders depending on amount of excess reserve capacity
  - Limited exposure to cost of shared capacity
  - Works sensibly in periods of excess as well as in periods of approaching potential shortage
  - Avoids need for transition mechanism/sequence

Framework

- Analysis compares the difference between two cases
  - Case 1: No exposure to excess reserve capacity costs (“perfect”)
  - Case 2: Proposed RCM settings for evaluation
  - Difference: How the RCM impacts what is paid for capacity from the IMO and how that translates into shared capacity related costs

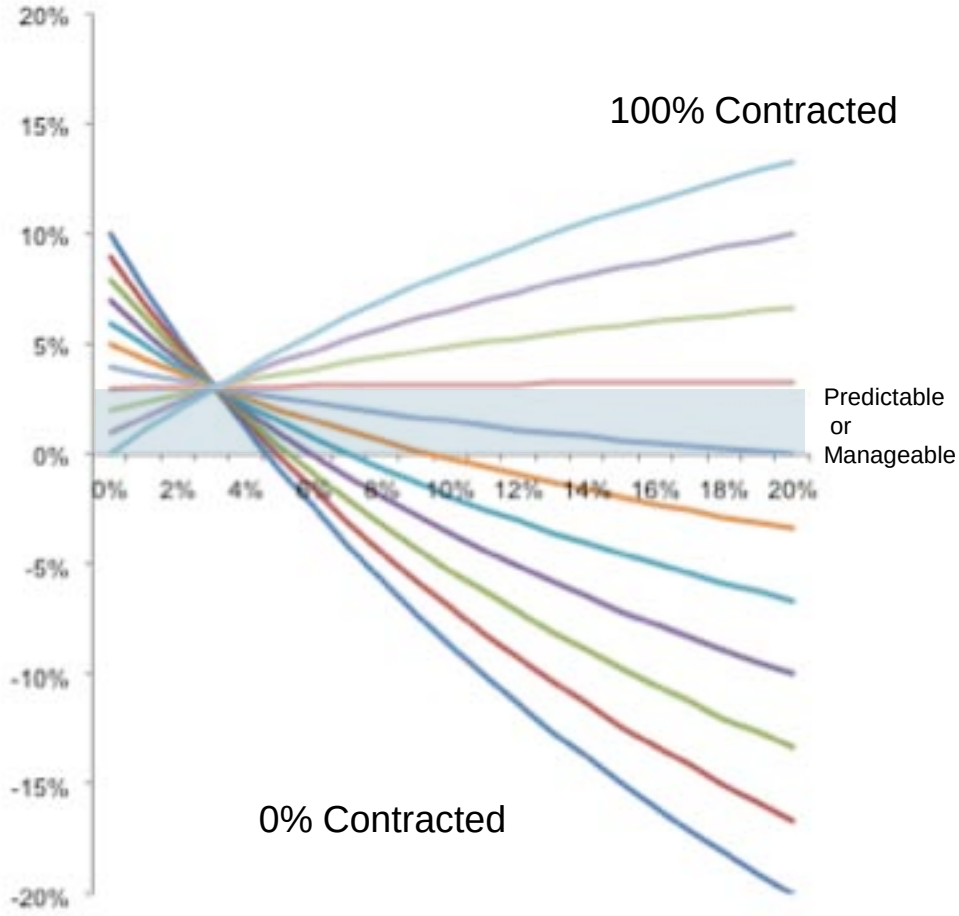
Example

			Parameters		Excess Capacity		No Excess Case
Excess Capacity [EC%]	%		15		15%		0%
Market Share (SET TO 100)	%		100		100%		100%
Bilateral_Contract Cover	%		50		50%		50%
SLOPE FACTOR (000s)			325		-3.250		-3.250
IMO MRCP SCALING FACTOR (%)	%		110		10%		10%
Reserve Capacity Requirement [RCR]	MW	[Input]			5773		5773
Credited Capacity [CC]	MW	[RCR]*(1+[EC%])			6,639		5,773
Excess Capacity [EC]	MW	[CC]-[RCR]			866		0
Retailer_IRCR	MW	[RCR]*Market Share			5,773		5,773
Bilateral_Contract_Cover	MW	[RCR]*Bilateral Contract %			2,887		2,887
Shortage_of_IRCR Cover MW	MW	Retailer_IRCR - Bilateral Contract Cover			2,887		2,887
Retailer's Shared_Capacity MW	MW	[EC]*Market Share			866		0
Maximum Reserve Capacity Price (MRCP)	$/MW	[Input]		$	163,900	$	163,900
Reserve Capacity Price (RCP)	$/MW	Choose(1=Non-Linear; 2=Linear)	1		121,203		163,900
			1 Non-Linear		121,203		163,900
			2 Linear		100,389		163,900
Assumed cost of bilateral capacity	$/MW			$	473,097,350	$	473,097,350
Cost of Targeted Capacity from IMO	$/MW				349,853,503		473,097,350
Cost of Shared Capacity from IMO	$/MW				104,956,051		0
Total Cost	$			$	927,906,903	$	946,194,700
Difference					Additional Cost	-$	**18,287,797**
							-1.93%

Recommendation

- 110% Maximum RCP to align incentives more symmetrically for balanced risk management
- -3.25 slope to sharpen focus on market conditions and create more dynamism
- The intersection point on the x-axis becomes the set-off factor for the RCR, creating expected value consistency with the MRCP, while leaving significant exposure for risk management and competition
- No transition is needed

Normalised Additional Cost to Retailers Due to Cost of Shared Capacity



Percentage of Excess Reserve Capacity

The next slides build up the recommendation to highlight how each element works together

- The elements proposed would have common analogues in full market-based mechanisms

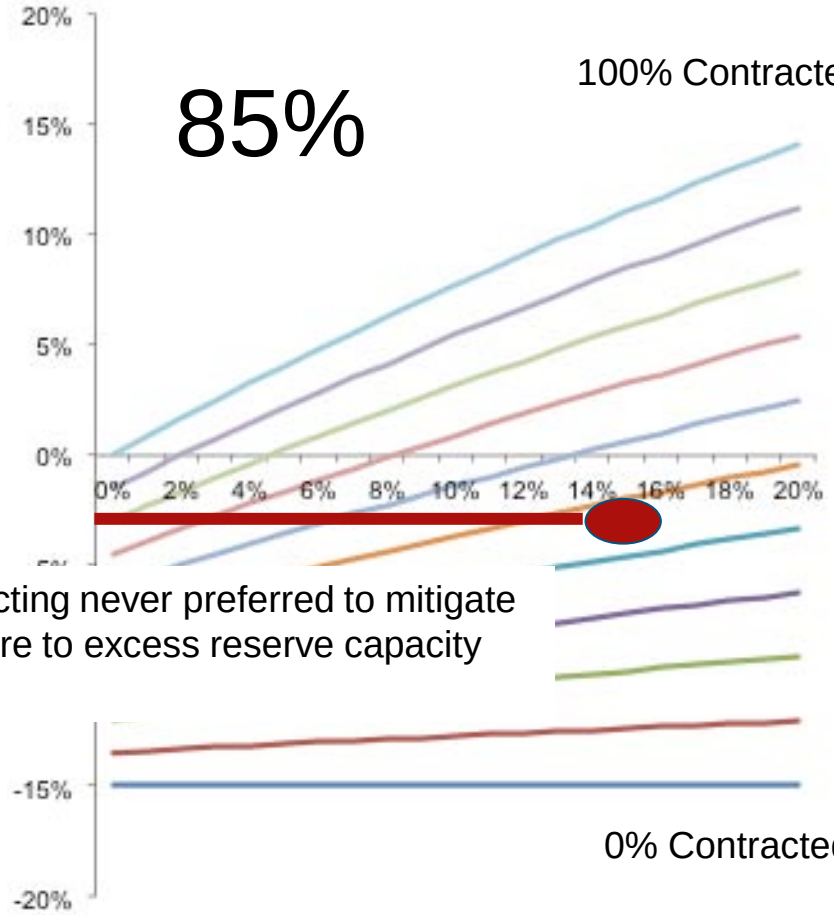
- Step 1: Show how the fixed 85% MRCP adjustment factor (and any factor below 100%) contributes to asymmetrical incentives and undermines risk management options

- Step 2: Show how the choice of steeper slope sharpens incentives and greatly reduces exposure to shared capacity costs to the point of those costs being essentially immaterial

- Step 3: Show how the selection of MRCP uplift improves symmetry and supports risk management options

If MRCP adjustment is less than or equal to 100% then retailers bear shared capacity cost risk when they enter into contracts with capacity resources

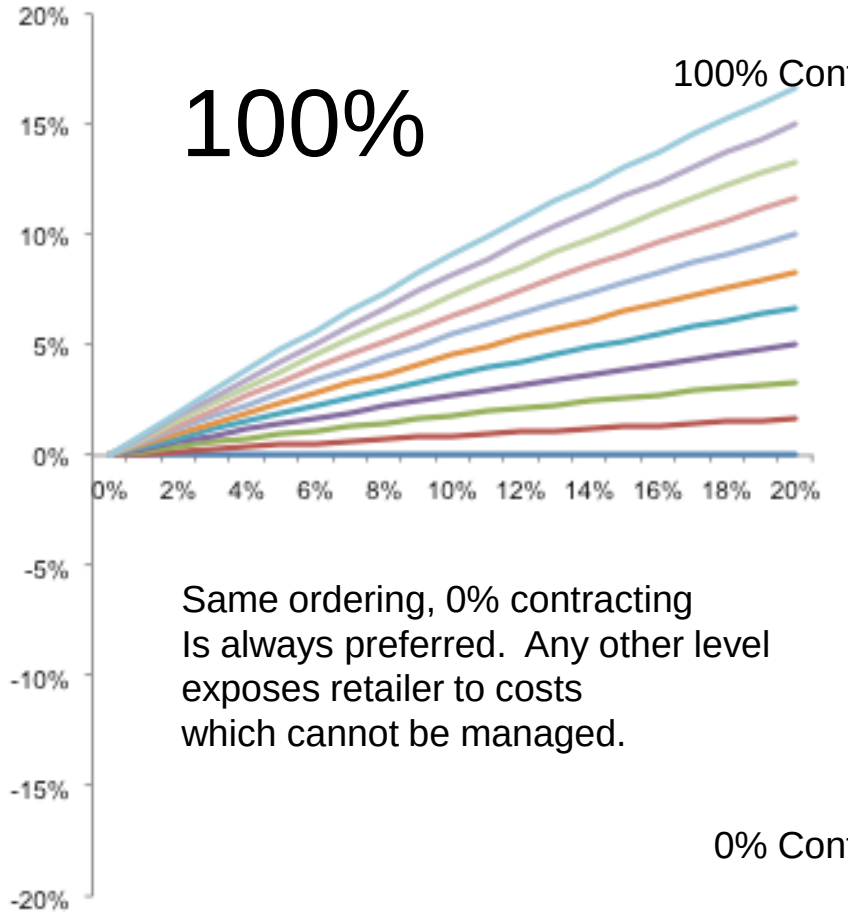
Normalised Additional Cost to Retailers Due to Cost of Shared Capacity



Contracting never preferred to mitigate exposure to excess reserve capacity costs

Percentage of Excess Reserve Capacity

Normalised Additional Cost to Retailers Due to Cost of Shared Capacity



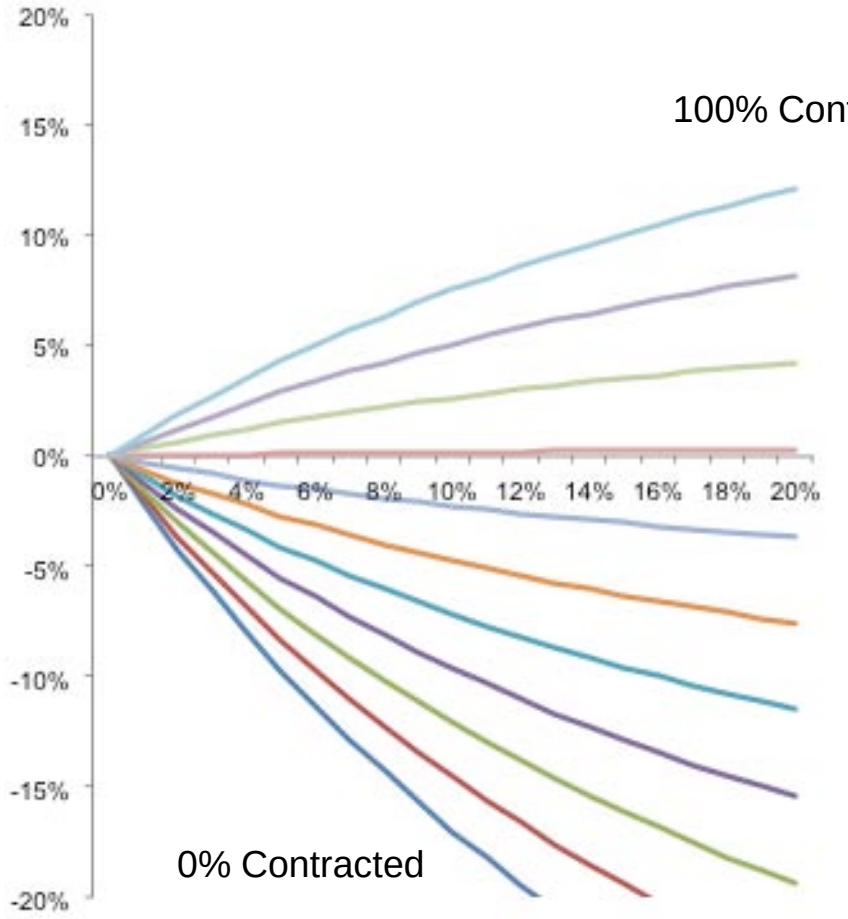
Same ordering, 0% contracting Is always preferred. Any other level exposes retailer to costs which cannot be managed.

Percentage of Excess Reserve Capacity

Increasing the “slope” from “-1” creates greater sensitivity to market conditions

- Capacity providers see more risk due to greater sensitivity to market conditions
  - Value of a CC falls off more quickly as the amount of excess reserve capacity increases
  - Even so, the fall off is much less “steep” than an auction might support
- Possible to reduce exposure to shared capacity costs down to “zero” through fixed policy of 70% contracting, but…..
- Retailers can always do better by contracting less (or not at all)
- Not stable

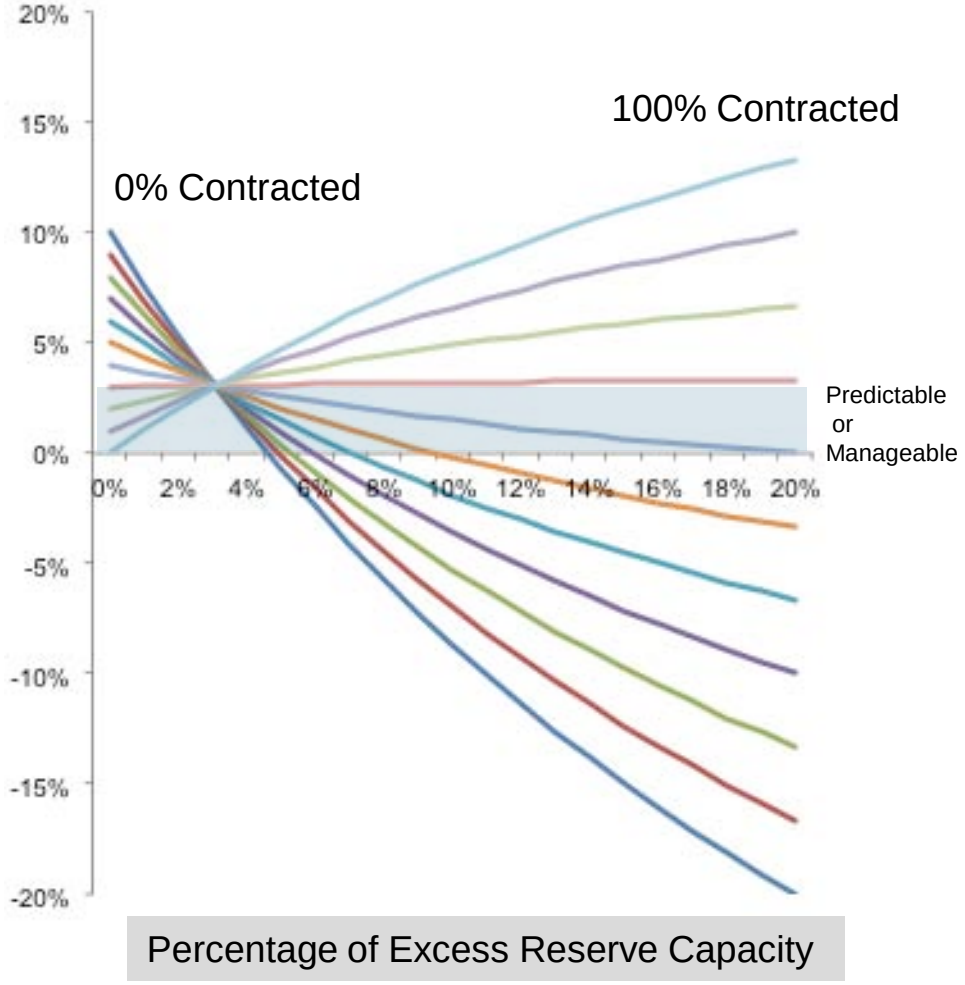
Normalised Additional Cost to Retailers Due to Cost of Shared Capacity



Percentage of Excess Reserve Capacity

Symmetrical risks does not appear unless the maximum retailer exposure exceeds “expected” MRCP value

- By exposing retailers to the risk that, as capacity reserves decline, credits may cost more if purchased from the IMO
  - “Shortage” risk is introduced
  - Contracting to manage exposure is possible
  - Retailers have a more balanced incentive to participate in contracts
- The point is not to “incentivise contracts” but to remove distortions that make contracting a cost-increasing activity
  - Contracting should be a way of mitigating risk, not a way to increase exposure to a risk that cannot be hedged
- Higher values could be used to create appearance of even “more” symmetry, but proposal appears ample given that the RCM should not persistently support as much excess reserve capacity going forward



At 110% of MRCP and slope -3.25, most exposure can be managed by contracting

- Best *average* contracting strategy: 70%
- Maximum exposure to shared excess reserve capacity:

  10.0% at 0% contracting

  5.0% at 50% contracting

  4.0% at 60% contracting

  3.3% at 70% contracting

  13.3% at 100% contracting

- Minimum exposure to shared excess reserve capacity:

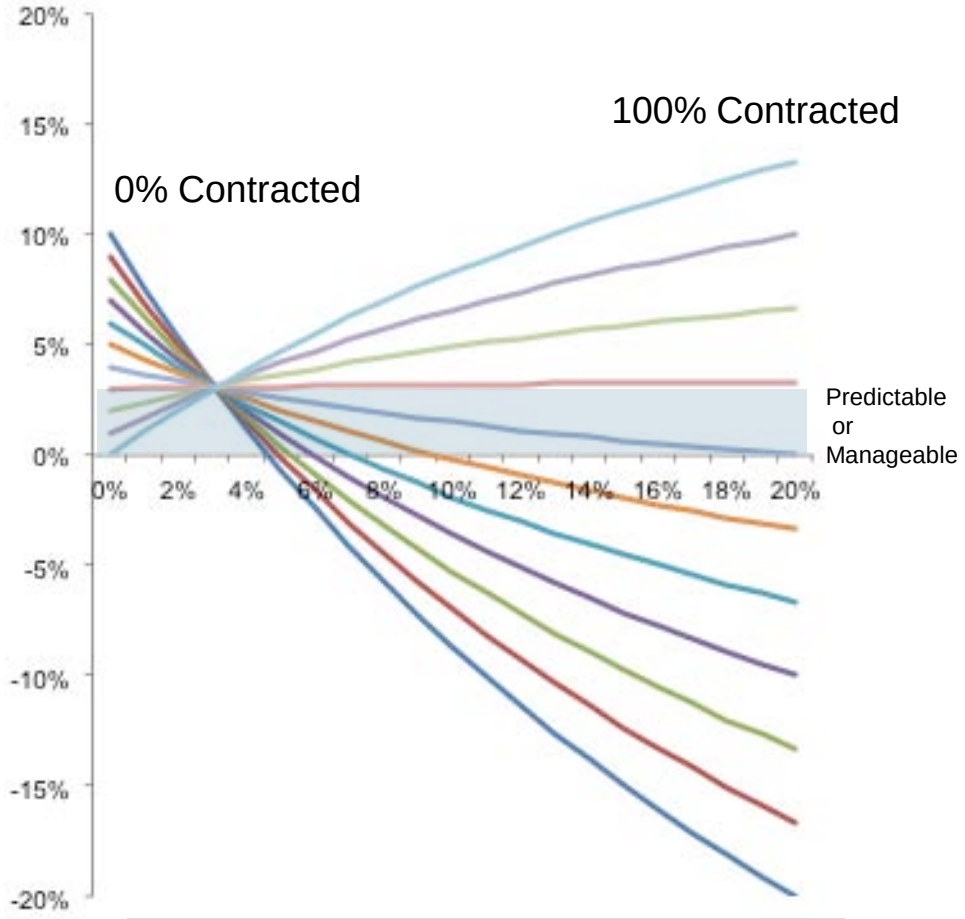
  -20.0% at 0% contracting

  -3.3% at 50% contracting

  0% at 60% contracting

  3.0% at 70% contracting

Normalised Additional Cost to Retailers Due to Cost of Shared Capacity



Summary

- Dynamic adjustment is crucial

- Symmetrical exposure is essential
  - Generators exposed to excess capacity
  - Retailers exposed to shortage capacity

- Mindful of recent MRCP review and reduction

- Risk management mechanisms must exist, with incentives linked to “market” dynamics, not overly contrived arrangements
  - MRCP becomes “SCP” → Sustainable Capacity Price
  - RCP can reach a maximum of 110% of the SCP, depending on market conditions
  - A slope of -3.25 to sharpen sensitivity to market conditions and simplify the transition

- No transition required