



INDEPENDENT
MARKET
OPERATOR

Final Rule Change Report

Title: Relevant Demand of a Demand Side Programme

RC_2012_02

Standard Rule Change Process

Date: 18 July 2013

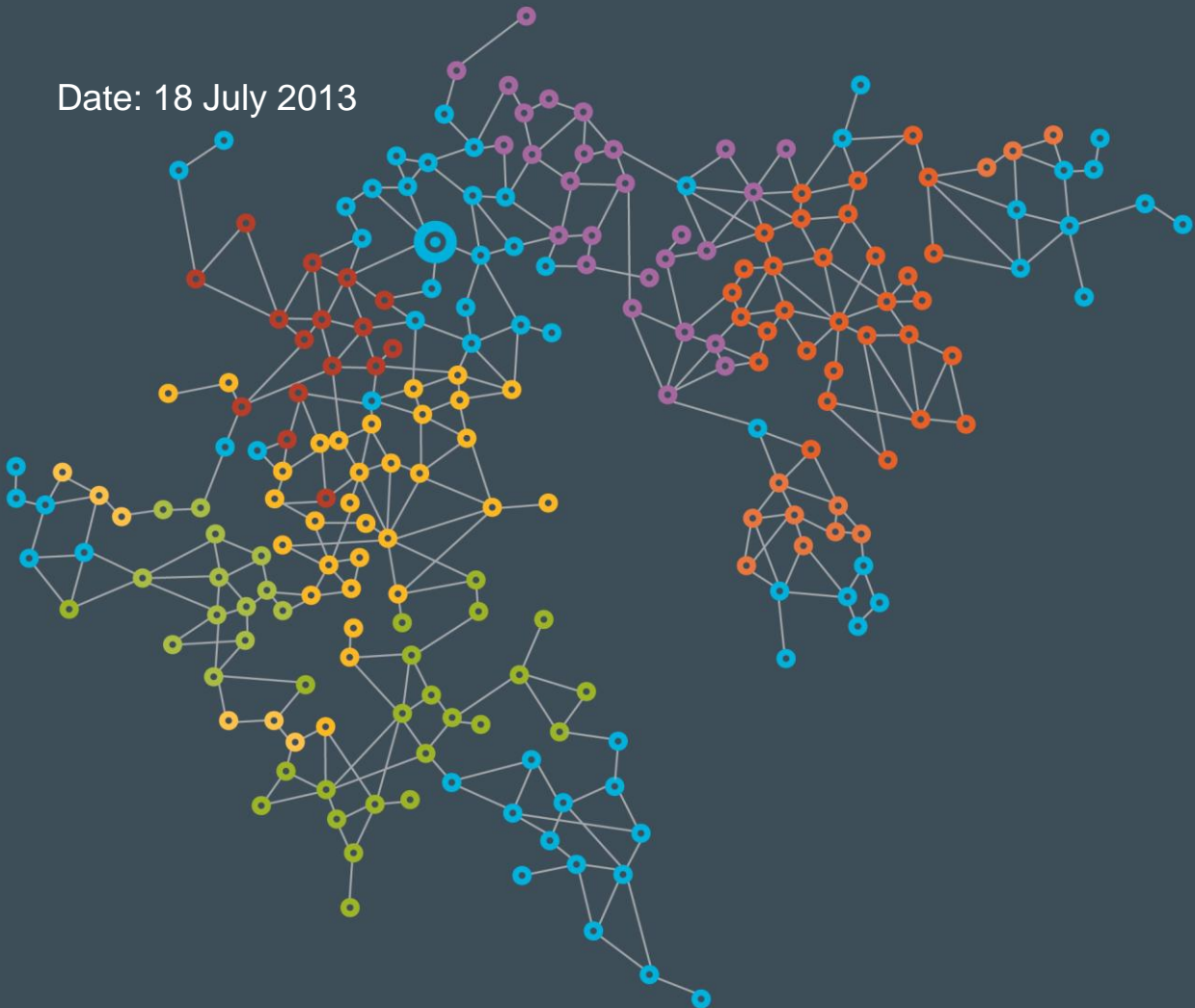


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Executive Summary

Proposed amendments

This Rule Change Proposal submitted by EnerNOC seeks to change the methodology for calculating the Relevant Demand of a Demand Side Programme (DSP), an estimate of the likely total consumption of a DSP during peak Trading Intervals. The current methodology sums the consumption quantities of each Associated Load within a DSP to determine the total DSP consumption for each of the relevant 32 Trading Intervals from the Hot Season of the previous Capacity Year. The Relevant Demand is then calculated as the median of the 32 DSP consumption values. The proposed methodology calculates the median consumption of each Associated Load within a DSP over the relevant 32 Trading Intervals and then sums those values in order to determine the Relevant Demand.

EnerNOC considered that the proposed amendments would increase transparency for end-use customers by establishing a clear relationship between individual load baselines and a DSP's Relevant Demand. EnerNOC also considered that the proposed amendments would reduce the sensitivity of the portfolio Relevant Demand to changes in the portfolio so as to improve certainty for end-use customers around the value of their individual Relevant Demand.

Consultation

- A Pre Rule Change Discussion Paper was discussed by the MAC at its 14 March 2012 meeting. At the meeting it was agreed that the IMO would undertake further analysis on this issue and assess if there were any material differences on the determination of the Relevant Demand for existing DSPs resulting from different approaches. This analysis, which found no significant bias between the two approaches, was distributed in the papers for the 11 July 2012 meeting and presented at the 8 August 2012 meeting, where the MAC supported the formal submission of the proposal into the rule change process.
- EnerNOC formally submitted the Rule Change Proposal on 23 August 2012 and the IMO published its Rule Change Notice on 3 September 2012. Having further considered the proposal following the August 2012 MAC meeting, the IMO raised concerns in the Rule Change Notice that overall the proposal may be inconsistent with the Wholesale Market Objectives.
- The first submission period was held between 4 September 2012 and 16 October 2012. Submissions were received from Alinta Energy, Community Electricity, EnerNOC and Synergy. Synergy supported the proposal while Community Electricity and Alinta Energy opposed it. EnerNOC supported its proposal but suggested that it should be held in abeyance until other work streams which may impact on the Relevant Demand methodology (such as the work of the Reserve Capacity Mechanism Working Group) were completed.
- The second submission period was held between 23 May 2013 and 20 June 2013. The IMO received no submissions in the second submission period.

Assessment against Wholesale Market Objectives

The IMO considers that overall the proposed amendments are inconsistent with the Wholesale Market Objectives. While the proposed amendments may provide some benefit in terms of Wholesale Market Objective (e), they are inconsistent with Wholesale Market Objective (a) and

potentially inconsistent with Wholesale Market Objective (c).

Practicality and Cost of Implementation

The cost to amend the IMO's IT systems was estimated to be approximately \$16,000. No other significant costs were identified by stakeholders. No issues relating to the practicality of implementation were identified.

The IMO's Decision

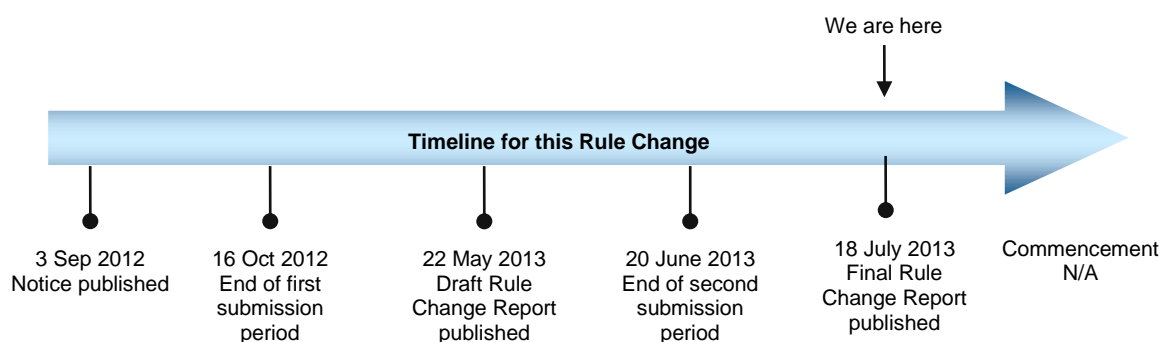
The IMO's decision is to reject the Rule Change Proposal.

1. Rule Change Process and Timetable

On 23 August 2012 EnerNOC submitted a Rule Change Proposal regarding amendments to clause 4.26.2CA 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. In accordance with clause 2.5.10 of the Market Rules, the IMO decided to extend the timeframe for the preparation of the Draft Rule Change Report. Further details of the extensions are available on the Market Web Site: http://www.imowa.com.au/RC_2012_02.

The key dates in processing this Rule Change Proposal, as amended in the extension notices, are:



2. Proposed Amendments

2.1. The Rule Change Proposal

The Relevant Demand is an estimate of the likely total consumption of a Demand Side Programme (DSP) during peak Trading Intervals. As part of the Rule Change Proposal: Curtailable Loads and Demand Side Programmes (RC_2010_29) a “portfolio management” approach was introduced whereby the performance of a DSP is assessed in aggregate, rather than on a site by site basis.

As part of the development of the revised Relevant Demand methodology under RC_2010_29 the IMO commissioned Data Analysis Australia (DAA) to consider the Relevant Demand methodology. DAA investigated two ways of combining the data from the constituent loads to produce a portfolio Relevant Demand:

- Approach A – The Relevant Demand is calculated for each National Metering Identifier (NMI) in turn, then the results are summed to give the portfolio Relevant Demand; and
- Approach B – The Loads are summed first and the Relevant Demand is then calculated for the portfolio.

DAA’s analysis found no significant difference between Approach A and Approach B in terms of creating an obvious bias where one approach yields consistently higher Relevant Demands than the other.

In its proposal EnerNOC noted the following concerns associated with the use of Approach B (as implemented by RC_2010_29).

- Approach B is very sensitive to changes in the portfolio and can result in significant

uncertainty for end-use customers. The “value” of an end-use customer can be very different depending on what other Loads are in the DSP.

- Since the results are sensitive to the correlation between the loads, the contribution of any one NMI cannot be calculated unless the meter data for all the NMIs in the DSP is available. This means that an individual end user cannot calculate its contribution to the portfolio Relevant Demand.
- Without a clear relationship between the portfolio Relevant Demand and an individual Relevant Demand, a DSP operator is unable to clearly and transparently inform its customers of their individual baselines.
- Lack of transparency makes the approach highly complex. Baselines should be simple enough for all stakeholders to understand, calculate, and implement, including end-use customers.
- Approach B encourages aggregators to assemble their DSPs in a way that maximises Relevant Demand rather than ensure reliable performance. EnerNOC considers this risk does not exist under Approach A because the arrangement of Loads within DSPs does not affect the individual contribution of each Load.

Given the identified issues associated with the use of Approach B, and given that no significant difference (in terms of bias) between the two approaches was identified by DAA, EnerNOC proposed that Approach A should be adopted.

Appendix 1 contains details of two examples (“Figure 1” and “Figure 2”) provided by EnerNOC in the Rule Change Proposal, to explain its concerns with Approach B and demonstrate that neither approach has an obvious bias. For full details of the Rule Change Proposal please refer to the Market Web Site: http://www.imowa.com.au/RC_2012_02.

2.2. The IMO’s Initial Assessment of the Proposal

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

Following the discussion of the proposal at the August 2012 MAC meeting and its formal submission into the rule change process, the IMO gave further consideration to its preliminary assessment of the proposed amendments against the Wholesale Market Objectives. The assessment identified that in determining whether to accept the proposed amendments a trade-off between greater transparency and reduced accuracy of the Relevant Demand measure would be required. In particular, the IMO considered that the proposed amendments:

- potentially better achieve Wholesale Market Objective (e), by allowing end-use customers to better identify their relative contribution to a DSP, which benefits DSP aggregators and potentially impacts on the delivery of physical capacity to the market via the programmes operated by them;
- are potentially inconsistent with Wholesale Market Objective (a) as they would result in a measure of performance of a DSP that appears less accurate than under the current approach; and
- are potentially inconsistent with Wholesale Market Objective (c) as a DSP would no longer be treated equivalently to Market Generators whose output is currently measured at one connection point.

The IMO also noted the wider issues associated with the use of a static Relevant Demand and the determination of the IMO (based on the views expressed during the consultation process for RC_2010_29) to undertake a separate wider consideration of the options for implementing a dynamic Relevant Demand methodology in the future.

3. Consultation

3.1. The Market Advisory Committee

The MAC discussed the proposed amendments during its 14 March 2012 and 8 August 2012 meetings.

March 2012 MAC meeting

Dr Paul Troughton presented the Pre Rule Change Discussion Paper: Relevant Demand of a Demand Side Programme (PRC_2012_02).

- Dr Troughton advised that the methodology used for calculating Relevant Demand did not allow for identifying the contribution of individual Loads. This creates some level of risk for DSP aggregators as they are unable to provide certainty to their end-use customers. He added that the current methodology hindered the level of transparency offered to end-use customers. He further suggested that the solution to the problem only involved changing some key words in the Wholesale Electricity Market Rules.
- In response to a question from Mr Andrew Sutherland, Dr Troughton said that this approach for calculating Relevant Demand was unique to the Wholesale Electricity Market.
- The Chair confirmed that the IMO currently calculates Relevant Demand using both the approach required by the Market Rules and the proposed approach incorporated in PRC_2012_02. Mr Stephen MacLean queried whether there was a significant difference in the Relevant Demand figure calculated using the two approaches. Dr Troughton answered that the examples presented in the Pre-Rule Change Discussion paper were for illustrative purposes only and in reality the difference in Relevant Demand calculated using the two approaches was insignificant.
- Mr Corey Dykstra mentioned that the problem faced by DSPs was not unique. A similar problem was faced by retailers when they add a customer to a portfolio to supply electricity. The customer can be priced either individually or as a part of a portfolio. He added that this constituted a business risk which could be minimised when creating supply contracts. He added that the issue mainly constituted a commercial risk and did not seem to add any market benefit.
- Mr Ben Tan queried whether the optimisation done under Approach A would be the same as Approach B. Dr Troughton answered that the goals are different. He added that the goal under Approach A was to optimise reliability whereas the goal under Approach B was a compromise between reliability and maximising the Relevant Demand.
- Mr Shane Cremin suggested that at the time RC_2010_29 was proposed, it was possible that the other approach could have been adopted if this issue was raised at that time. He added that as the two approaches did not produce different results and if it was clear that a Market Objective was being achieved, this rule change could be progressed further. However, it was not apparent why the urgency was classified as high. The Chair added that the reasoning behind adopting the current approach was to treat a DSP as a single facility. He added that it might be beneficial from a communication perspective to adopt the second

approach which would allow the DSP to report individual contribution of customers.

- Discussion ensued on the resultant implications of the proposed rule change for the DSP.
- Mr MacLean alluded to the analysis conducted by DAA and suggested that IMO consider engaging DAA to check if the original conclusions on different approaches were accurate. He also suggested that the IMO consider implementing DAA's main recommendation which was to use 12 readings instead of 32 to assess the Relevant Demand. He added that should the IMO decide not to use this recommendation, it could consider using a methodology that would cap the Relevant Demand for a particular load at its Individual Reserve Capacity Requirement (IRCR). This would remove the problem of double counting the IMO identified in RC_2010_29.
- Mr Sutherland added that this issue exemplified how DSM capacity was different from generation capacity. The Chair suggested that such comments should be directed to the issues under consideration of the Reserve Capacity Mechanism Working Group (RCMWG)
- Dr Paul Biggs noted that the examples in the document suggest that the alternative approach might be more volatile. However, he added that Market Objective (e) might be achieved if the result of this rule change was increased uptake of DSM.
- The Chair suggested that the IMO would conduct further analysis on this issue and assess if there are any material differences on the determination of the Relevant Demand for existing DSP resulting from different approaches. The members agreed with this suggestion.

August 2012 MAC meeting

Mr Greg Ruthven provided an overview and update of the analysis results distributed for, but not discussed at the previous MAC meeting.

- Mr Ruthven explained that at the time of analysis there were eight Demand Side Programs (DSPs) in operation with more than one Associated Load. Of these DSPs, four showed a higher RD using EnerNOC's methodology while four showed a lower RD, with the net outcome being an increase in total RD of about 4%.
- Mr Ruthven noted that since the original analysis was completed there had been changes to the Associated Loads for one DSP and the commencement of a new DSP. One of these showed a decrease of 2.4% using EnerNOC's methodology and the other an increase of 2.3%. Mr Ruthven did not consider there to be anything statistically significant in the results. Mr Michael Zammit advised that EnerNOC had undertaken its own analysis and its results aligned with those of the IMO.
- Mr MacLean noted that EnerNOC's methodology did not increase the number of Capacity Credits assigned to a DSP. Mr MacLean considered that it made sense to move to a system where changing the Associated Loads in a DSP would not disadvantage or reward any of the Loads in that DSP and so supported the progression of the proposal.
- The Chair considered that provided there was no substantive impact on the Capacity Credits allocated, the increase in transparency stemming from this rule change would be beneficial to the Market. The MAC supported the formal submission of the proposal into the rule change process.

Further details are available in the MAC meeting minutes available on the Market Web Site: <http://www.imowa.com.au/MAC>

3.2. Submissions received during the first submission period

The first submission period for this Rule Change Proposal was held between 4 September 2012 and 16 October 2012. Submissions were received from Community Electricity, EnerNOC and Synergy, while an out of session submission was received from Alinta Energy.

EnerNOC and Synergy both supported the Rule Change Proposal. However, in light of the IMO's intention to review the Relevant Demand methodology (as noted in the Rule Change Notice), which could result in extensive baseline changes, EnerNOC recommended that the Rule Change Proposal be held in abeyance until such a review was completed.

Community Electricity and Alinta Energy did not support the proposal. Community Electricity considered the amendments would facilitate gaming of the Relevant Demand so as to maximise payment to the DSM provider and simultaneously decrease system security. Alinta Energy considered that given that previous amendments to the Market Rules implemented under RC_2010_29 encouraged the aggregation of a number of small loads into larger DSPs, it seemed counter intuitive to calculate the Relevant Demand of a DSP on an individual NMI basis. Both Alinta Energy and Community Electricity supported the consideration of a dynamic Relevant Demand approach in preference to the current static methodology.

The assessment by submitting parties as to whether the proposal would better achieve the Wholesale Market Objectives is summarised below.

Submitter	Wholesale Market Objective Assessment
Alinta Energy	Inconsistent with Wholesale Market Objectives (a) and (b).
Community Electricity	Compromises Wholesale Market Objective (a).
EnerNOC	Better achieves Wholesale Market Objectives (a), (c) and (e).
Synergy	Better achieves Wholesale Market Objectives (a) and (c).

A copy of all submissions in full received during the first submission period is available on the Market Web Site: http://www.imowa.com.au/RC_2012_02.

3.3. The IMO's response to submissions received during the first submission period

The IMO's response to each of the issues identified during the first submission period is presented in Appendix 2 of the Draft Rule Change Report available on the Market Web Site: http://www.imowa.com.au/RC_2012_02.

3.4. Second submission period

Following publication of the Draft Rule Change Report on the Market Web Site, the second submission period was held between 23 May 2013 and 20 June 2013.

The IMO received no submissions in the second submission period.

3.5. Public Forums and Workshops

No public forums or workshop were held in regard to this Rule Change Proposal.

4. The IMO's Draft Assessment

The IMO's draft assessment, against clauses 2.4.2 and 2.4.3 of the Market Rules, and analysis of the Rule Change Proposal can be viewed in the Draft Rule Change Report available on the Market Web Site: http://www.imowa.com.au/RC_2012_02.

5. The IMO's Proposed Decision

The IMO's proposed decision was to reject the Rule Change Proposal. The IMO made its proposed decision on the basis of its assessment that overall the proposed Amending Rules are inconsistent with the Wholesale Market Objectives.

6. The IMO's Final Assessment

In preparing its Final 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. A summary of the views expressed in submissions and by the MAC is available in section 3 of this report.

The IMO's assessment is outlined in the following sub-sections.

6.1. Wholesale Market Objectives

The IMO considers that overall the proposed amendments are inconsistent with the Wholesale Market Objectives. While the proposed amendments may provide some benefit in terms Wholesale Market Objective (e), they are inconsistent with Wholesale Market Objective (a) and potentially inconsistent with Wholesale Market Objective (c).

The IMO's assessment is presented below:

- (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 amendments to the determination of the Relevant Demand for a DSP (Approach A) would result in a measure of performance of a DSP that appears less

accurate than under the current approach (Approach B). While Approach A results may be equally likely to be above or below the Approach B results (as reflected in RC_2012_02 and supported by the IMO's analysis as presented at the August 2012 MAC meeting), this does not mean that the two approaches are equally good for determining an accurate Relevant Demand for the Facility as a whole. The IMO's concern with Approach A can be seen in the two examples provided in Appendix 1:

- For Figure 1, current Approach B gives a Relevant Demand result of 1.2 MW. This is a reasonable result given that the combined portfolio actually had a load of 1.2 MW for 30 of the 32 Trading Intervals. By contrast, using Approach A gives a result of 0.3 MW, a very low value which the combined portfolio only exhibited in 2 Trading Intervals.
- For Figure 2, Approach B gives a Relevant Demand of 1.2 MW, which again is a reasonable result given that the combined portfolio actually had a load of 1.2 MW for 30 of the 32 Trading Intervals. However Approach A gives a result of 2.1 MW, which the combined portfolio only reached in 2 of the 32 Trading Intervals. Most of the time the combined portfolio load was only 1.2 MW and it would seem inappropriate to use the much higher value as the Relevant Demand.

The introduction of potential distortions in the calculation of a DSP's Relevant Demand (either upwards or downwards) is inconsistent with Wholesale Market Objective (a). If the Relevant Demand for a DSP is set too low then the actual capacity available from the DSP will not be fully recognised and rewarded. More importantly, if a Relevant Demand is set too high then it is more likely that when the DSP is dispatched it will not be consuming at that Relevant Demand level, and so will not be able to provide the capacity reduction expected by System Management. This has potential impacts with respect to System Management's ability to rely on a DSP to produce a required reduction in consumption when issued a Dispatch Instruction when compared to the status quo. This also has potential impacts on whether a DSP is over or under paid relative to their actual delivery. The IMO considers that there are likely implications with respect to the proposed amendments on system reliability when compared to the status quo.

The IMO agrees that Figures 1 and 2 show extreme, artificial profiles that do not represent "typical" Associated Loads. However, the examples do highlight the potential impact of highly variable Loads on Relevant Demands, and in particular of a Load that consumes much less than its median consumption on a relatively frequent basis. The IMO is concerned that Approach A may encourage the use of more variable Loads of this type, as only the consumption of a Load in the sixteenth and seventeenth Trading Intervals (i.e. when ranked in order of increasing consumption) will actually contribute to the Relevant Demand value. Such Loads are likely to be less attractive under Approach B, due to the more uncertain impact of any low consumption Trading Intervals on the overall Relevant Demand.

(b) *to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors.*

No impact.

(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*

The IMO acknowledges that although Approach A represents a departure from the general principle implemented under RC_2010_29 (that a DSP should be treated as a single Facility), this

is not in itself discriminatory. There is however a potential for DSP's to be afforded an advantage when compared to Market Generators if the approach encourages the inclusion of more variable and unreliable Loads in a DSP that inflate its Relevant Demand above the likely capacity of the Facility in peak times. This would result in a DSP aggregator being effectively over-compensated by the market for its likely available capacity, when compared with a Market Generator.

The IMO does not consider that the current use of Approach B indirectly discriminates against DSPs. The IMO uses quite different methodologies to estimate the available capacity of different facility types, each imposing its own administrative costs and commercial risks on the participant. While Approach A may be simpler to administer and present less commercial risk to DSP aggregators, it is not necessarily discriminatory to apply a slightly more complex approach if that approach provides a more reliable estimate of the available capacity of a DSP.

(d) *to minimise the long-term cost of electricity supplied to customers from the South West interconnected system*

No impact.

(e) *to encourage the taking of measures to manage the amount of electricity used and when it is used*

The IMO considers that the proposed amendments may encourage the participation of DSP aggregators in the market, by reducing their administrative costs and commercial risks. This would work to better achieve Wholesale Market Objective (e).

The IMO also agrees with the proposal that Approach A may also provide greater transparency and certainty to end-use customers, encouraging their participation in DSPs. However, even with the adoption of Approach A end-use customers may not necessarily be able to identify and verify their proportional contribution to the Relevant Demand of their DSP, particularly in cases where a DSP is over-subscribed to ensure it meets its performance requirements. It may be more appropriate to provide the desired transparency through other means, for example through the publication of summary statistics for each DSP on the Market Web Site (including total consumption for each of the 32 peak Trading Intervals and the total minimum load for the programme). This would allow each end-use customer to see how its Load contributed to the DSP.

The IMO also notes that the perceived complexities of the current approach do not appear to be a significant barrier to entry. There are nearly 600 Associated Loads currently participating in DSPs and the capacity provided by DSPs is expected to reach 524 MW by the 2014/15 Capacity Year.

6.2. Practicality and Cost of Implementation

6.2.1. Cost:

The proposed amendments would require changes to the IMO's IT systems. The estimated cost of the changes is approximately \$16,000. No other significant costs were identified by Rule Participants.

6.2.2. Practicality:

The IMO did not identify any significant issues with the practicality of implementation of the proposed changes. EnerNOC estimated in its submission that it would take several months to

effectively communicate with its customers about the methodology change and its impacts.

7. The IMO's Decision

The IMO's decision is to reject the Rule Change Proposal.

7.1. Reasons for the decision

The IMO made its decision on the basis of its assessment that overall the proposed Amending Rules are inconsistent with the Wholesale Market Objectives..

Appendix 1. Relevant Demand Examples from the Rule Change Proposal

Comparison: Approach A vs. Approach B

IMO Note:

Approach A (the proposed methodology) calculates the median consumption of each Associated Load within a DSP over the relevant 32 Trading Intervals and then sums those values in order to determine the Relevant Demand.

Approach B (the current methodology) sums the consumption quantities of each Associated Load within a DSP to determine the total DSP consumption for each of the relevant 32 Trading Intervals from the Hot Season of the previous Capacity Year. The Relevant Demand is then calculated as the median of the 32 DSP consumption values.

EnerNOC supports DAA’s finding that neither approach has an obvious bias.

Either method can give the higher result, depending on the data. We demonstrate this with some extreme examples.

In Figure 1, the DSP’s RD using Approach B is 1.2MW, whereas using Approach A, gives a result of 0.3MW – a difference of 0.9MW.

Figure 2 illustrates two slightly different loads. In this case, the DSP’s RD using Approach A yields a RD result of 2.1MW, whereas Approach B yields a RD of 1.2MW; the same 0.9MW difference, but in the opposite direction.

Although this is a simplistic example, it clearly shows that either approach can yield a higher RD. When analysing different portfolios that exhibit similar characteristics this same principle would stand true.

Figure 1: Comparison of DSP Relevant Demand Approaches (A & B)

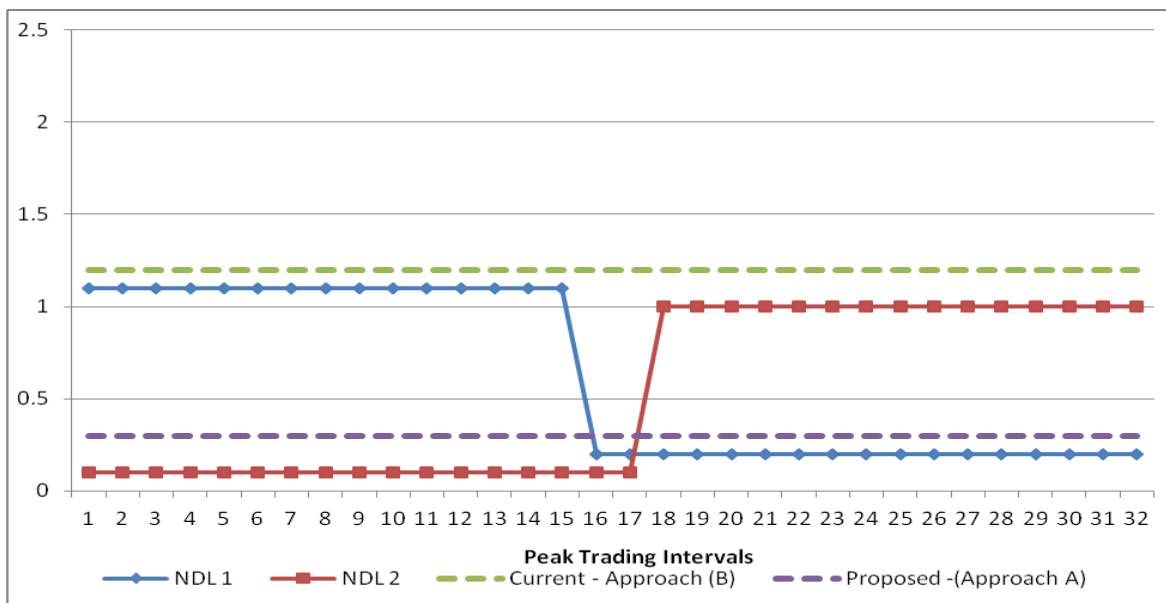
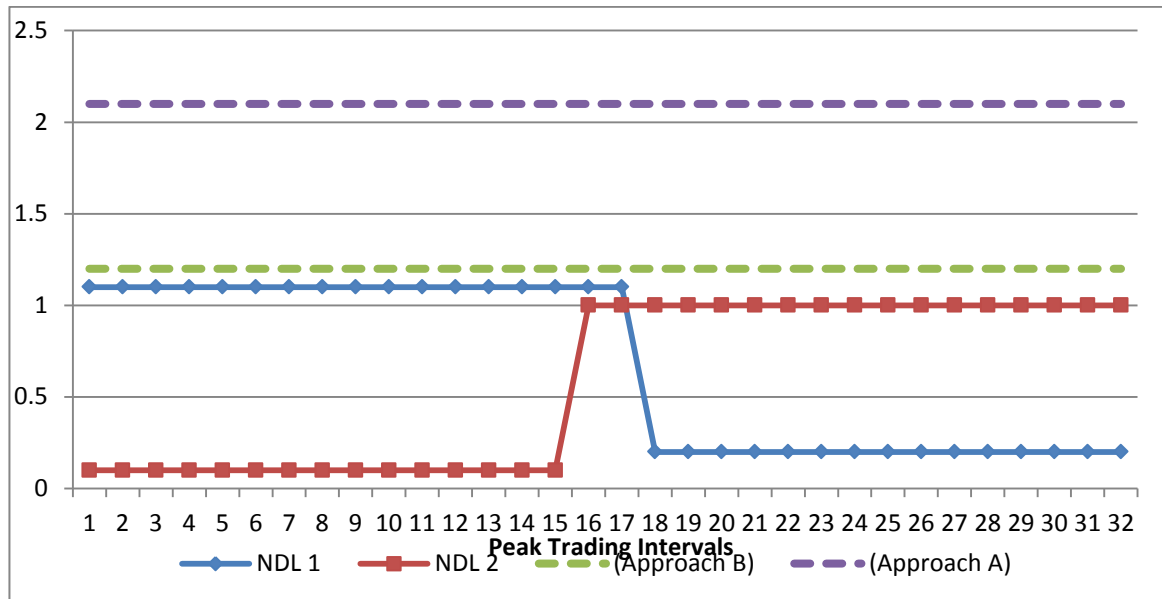


Figure 2: Comparison of Relevant Demand Approaches (A & B)



Uncertainty and Lack of Stability

As will be elaborated below, the portfolio RD calculated using Approach B is very sensitive to changes in the portfolio and can result in significant uncertainty for end-use customers. Practically, this means that the “value” of an end-use customer can be very different depending on what other loads are in the DSP.

Examining the example of Figure 1, if the DSP consisted only of NDL1, the portfolio RD would be 0.2MW. Adding NDL2 increases the portfolio RD to 1.2MW. It could then be considered that NDL2 contributed 1MW, however this is inaccurate and inequitable, as the result is derived simply because they were added after NDL1. Equally, if the DSP consisted only of NDL2, the portfolio RD would be 0.1MW. Adding NDL1 increases the portfolio RD to 1.2MW. It could then be considered that NDL1 contributed 1.1MW, which again is inaccurate and inequitable.

Summary - Figure 1

In First	RD (MW)	In Second	Portfolio RD Result (MW)	Marginal Value of Second Site (MW)
NDL1	0.2	NDL2	1.2	1
NDL2	0.1	NDL1	1.2	1.1

Conversely, in Figure 2, NDL1 alone gives an RD of 1.1MW. Adding NDL2 increases the portfolio RD to 1.2MW. Similarly, NDL2 alone gives an RD of 1MW and adding NDL1 increases the portfolio RD to 1.2MW. Subsequently, it could be considered that NDL2 is worth 0.2MW and NDL1 0.1MW, however, this again would be inaccurate and inequitable based upon the timing of their introduction to the DSP. Alternatively, the first associated load would need to be informed that their contribution is not as high as initially thought.

Summary - Figure 2

In First	RD (MW)	In Second	Portfolio RD Result (MW)	Marginal Value of Second Site (MW)
NDL1	1.1	NDL2	1.2	0.1
NDL2	1	NDL1	1.2	0.2

As DSPs introduce or remove loads from their program over time, the contribution of individual constituent loads to the DSPs RD requires significant recalculation with the result wholly dependent upon the order in which individual loads are introduced into the calculation.

Using Approach A, these problems do not occur: in the example of Figure 1, the portfolio RD is 0.3MW, and in the example of Figure 2 it is 2.1MW. Each NDL's contribution is easy to calculate, using data from that site alone, and *remains stable*.