



Australian Energy Market Commission

RULE DETERMINATION

National Electricity Amendment (Publication of a Carbon Dioxide Equivalent Intensity Index for the National Electricity Market) Rule 2010

Rule Proponent

Australian Energy Market Operator

Commissioners

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22 July 2010

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For and on behalf of the Australian Energy Market Commission

**RULE
CHANGE**

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About the AEMC

The Council of Australian Governments, through its Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005 to be the rule maker for national energy markets. The AEMC is currently responsible for rules and providing advice to the MCE on matters relevant to the national energy markets. We are an independent, national body. Our key responsibilities are to consider rule change proposals, conduct energy market reviews and provide policy advice to the Ministerial Council as requested, or on AEMC initiative.

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Summary

The Australian Energy Market Commission (AEMC or Commission) has determined to make a Rule that provides for the Australian Energy Market Operator (AEMO) to publish a Carbon Dioxide Equivalent (CO₂-e) Intensity Index for the National Electricity Market (NEM) (NEM CO₂-e Intensity Index).

The Rule Change Request arises in response to market participants seeking a single and standard reference point of information about the carbon intensity of generation in the NEM (for a specified time period, i.e. day or week) that would assist in determining and accounting for a carbon price (should one be present in the future) in the settlement of certain forward electricity contracts.

The National Electricity Rules do not include an explicit obligation under the Rules regarding provision of a NEM CO₂-e Intensity Index. The Rule as Made therefore explicitly introduces a new obligation and framework in Chapter 3 of the Rules for the provision of a NEM CO₂-e Intensity Index by AEMO.

In making this determination, the Commission took into account the impacts of the Rules as Made in promoting the efficient investment in, and operation of electricity services. The Commission considers that the Rule as Made provides clarity to AEMO regarding its role and reduces the administrative costs burden on market participants by providing for a reliable, transparent and consistent Index which can be used to inform commercial decision making in the NEM. The Commission also considers that given the proposed use of the Index in the market, that the Rule as Made is likely to support liquidity in forward electricity contracting, which in turn is likely to promote efficient pricing in the wholesale spot market and encourage greater investment certainty in electricity services in the NEM.

This Rule Determination and the Rule as Made is consistent with, the draft Rule determination and draft Rule. The Commission has made only minor wording clarifications to the Rule as Made. The Rule as Made commences on 22 July 2010.

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1 AEMO Rule Change Request

1.1 The Rule Change Request

On 13 November 2009, AEMO (Rule Change Proponent) made a request to the AEMC to make a Rule regarding the publication of a NEM CO₂-e Intensity Index (the Rule Change Request).¹ The Rule Change Request proposed amendments to Chapter 3 of the National Electricity Rules (NER or Rules).

1.2 Rule Change Request rationale

The Rule Change Request arises in response to AEMO terminating the publication of an informal greenhouse intensity index on its website in April 2009. This was in response to advice that the information provided by the index was being used as an input to inform and support certain commercial trading applications.² AEMO specifically terminated the publication of its informal greenhouse intensity index (GII) because it considered that:

- the informal GII was not robust enough in nature to be relied upon for commercial negotiations (the emission factors of individual generators were outdated and those generators which did not have established emission factors were not included in the GII); and
- given the use of the information, the index in its current form, with the absence of a formal governance arrangement presented specific risks to AEMO regarding its role, and
- there were also risks to market participants and other interested parties given that there was no certainty on the form and/or its continuation in the future.³

AEMO noted that the development of policy initiatives on climate change, including the Australian Government's proposed Carbon Pollution Reduction Scheme (CPRS) has placed greater significance and reliance upon information about the carbon intensity of generation in the NEM. This information has become particularly important in the context of the ongoing policy uncertainty relating to the proposed

¹ [http://www.aemc.gov.au/Electricity/Rule-changes/Open/Publication-of-a-Carbon-Dioxide-Equivalent CO₂-e -Intensity-Index-for-the-National-Electricity-Market-NEM.html](http://www.aemc.gov.au/Electricity/Rule-changes/Open/Publication-of-a-Carbon-Dioxide-Equivalent-CO₂-e-Intensity-Index-for-the-National-Electricity-Market-NEM.html)

² Since January 2000, AEMO had published on its website a Greenhouse Intensity Index (GII) (an alternate naming convention to a CO₂-e Intensity Index). The request for AEMO to publish a NEM GII was from the Commonwealth Government Department of Industry, Science and Resources responsible for energy policy matters at the time. The GII was provided as generic information in light of emerging policies regarding climate change and represented a single number that provided information on the amount of carbon dioxide equivalent greenhouse gas emitted per megawatt hour (MWh) of electricity sent out by generators operating in the NEM during the nominated week (tonnes CO₂-e/MWh).

³ AEMO Rule Change Proposal p.4.

CPRS.⁴ AEMO noted that the ongoing policy uncertainty associated with the proposed CPRS is presenting specific challenges for the market, particularly with respect to managing the price risks posed by CPRS on wholesale electricity prices, and as a result to settlement of longer term forward electricity contracts.⁵

In 2008, the Australian Financial Markets Association (AFMA), via its Electricity Committee⁶ developed an Addendum to its existing over-the-counter (OTC) contract documentation - Australian Carbon Benchmark Addendum (ACBA).⁷ The ACBA effectively provides a means for a relevant carbon price (should one be present in the future) to be taken into account in the settlement of a forward electricity contract, when the settlement takes place.⁸ To derive the relevant carbon price, the ACBA nominates a NEM CO₂-e Intensity Index (published by AEMO)⁹ and a nominated carbon reference price. In the absence of this form of a NEM CO₂-e Intensity Index, parties who wish to use the ACBA are required to negotiate an outcome, or if an agreement cannot be reached within a certain time period, appoint an independent expert.¹⁰

AEMO outlined in the Rule Change Request that industry participants consider that there is no other alternative suitable index available for use which market participants can rely upon and hence are seeking that AEMO publish a future NEM CO₂-e Intensity Index.

The proposed Rule Change request seeks to introduce a new obligation under the Rules for AEMO to publish a NEM CO₂-e Intensity Index for use by the market. AEMO considers a formal obligation and framework is required because such an arrangement would:

- remove uncertainty as to whether AEMO is the appropriate provider of the NEM CO₂-e Intensity Index and therefore would provide clarity and the appropriate protections with respect to AEMO's role;
- reduce uncertainty faced by commercial parties, particularly when entering into financial contracts, as to whether a type of NEM CO₂-e Intensity Index will be available in the future;

⁴ AEMO Rule Change Proposal p.4.

⁵ The Australian Government intended to introduce a CPRS in 2011. Consideration of a CPRS has now been delayed. Refer to <http://www.climatechange.gov.au/government/initiatives/cprs.aspx> for more information.

⁶ The AFMA Electricity Committee comprises representatives from generators, retailers, financial institutions and brokers participating in over-the-counter hedge market.

⁷ The OTC market is part of the financial market. Derivative products that are commonly traded in the OTC market to hedge exposure to electricity spot price are forward contracts.

⁸ AEMO Rule Change Proposal, p.6.

⁹ The 2008 and 2009 ACBA references the previous NEM GII published by AEMO. The Index represents the average carbon intensity (expressed as in tonnes of CO₂-e/MWh of generating units (as defined in the NER)).

¹⁰ Refer to AFMA Addendum p.18 of AEMO Rule Change Request.

- clarify how suitable inputs for the calculation of the NEM CO₂-e Intensity Index should be identified; and
- clarify whether certain inputs to the NEM CO₂-e Intensity Index are to be treated as confidential.¹¹

1.3 Solution proposed in the Rule Change Request

The Rule Change Request proposes to add a new provision to Chapter 3 of the Rules that would place an obligation on AEMO to establish, maintain, update and publish a NEM CO₂-e Intensity Index. The Index would represent an approximation of the volume weighted average of the greenhouse gas emissions from all market generating units and scheduled generating units for a specified time period.

The proposal also included a requirement for AEMO to:

- develop, in consultation with stakeholders,¹² publically available procedures that would set out the mechanism for how the CO₂-e Intensity Index is calculated, timing of publication of the Index and the form of emission factors AEMO would use in respect of the market generating units and scheduled generating units. These procedures would also include how any other supplementary intensity indicators would be determined and published;
- publish and maintain a list of all generating units that have been included in the NEM CO₂-e Intensity Index or supplementary greenhouse gas intensity indicators, the emission factors and sources used in respect of each generating unit; and
- include the timing obligations for the NEM CO₂-e Intensity Index in the spot market operations timetable.¹³

1.4 Commencement of Rule making process

On 23 December 2009, the Commission published a notice under section 95 of the National Electricity Law (NEL) advising of its intention to commence the Rule making process and the first round of consultation in respect of the Rule Change Request. A consultation paper was prepared by Australian Energy Market Commission (AEMC) staff which identified specific issues or questions for consultation, and was published with the Rule Change Request. Submissions closed on 11 February 2010.

The Commission received five submissions on the Rule Change Request as part of the first round of consultation, which are available on the AEMC website.¹⁴ A summary of

¹¹ AEMO Rule Change Proposal, p.7.

¹² AEMO proposes to undertake stakeholder consultation in accordance with the Rules consultation procedures - rule 8.9 of the NER.

¹³ Clause 3.4.3 of the Rules.

¹⁴ www.aemc.gov.au

the issues raised in submissions and the Commission's response to each issue is contained in Appendix A.1.

The Rule Proponent had requested that the Commission consider expediting the Rule Change Request on the basis that the Rule Change Request was non-controversial because it would provide support for trading in the NEM and does not impose any additional reporting/compliance obligations on generators.¹⁵ The Commission considered that the Rule Change Request was not a request for a non-controversial Rule and therefore decided not to expedite the Rule Change Request under section 96 of the NEL.

1.5 Publication of draft Rule determination and Draft Rule

On 6 May 2010 the Commission published a notice under section 99 of the NEL and a draft Rule determination in relation to the Rule Change Request (Draft Rule Determination). The Draft Rule Determination included a draft Rule (Draft Rule).

Submissions on the Draft Rule Determination closed on 17 June 2010. The Commission received six submissions on the Draft Rule Determination that are available on the AEMC website.¹⁶ A summary of the issues raised in submissions, and the Commission's response to each issue, is contained in Appendix A.2.

1.6 Extensions of time

The Commission issued a notice under section 107 of the NEL that extended the date for the publication of its Draft Rule Determination. Specifically, on 15 April 2010, a notice was published that extended the date for the publication of the draft determination to 17 June 2010, due to a material change in circumstances. This allowed the Commission to have sufficient time to consider the relevant issues raised by the Rule Change Request.

¹⁵ Under section 96 of the NEL, if the AEMC considers that a request for a Rule is a request for a non-controversial Rule or for an urgent Rule, the AEMC may expedite the Rule Change Request process such that the final Rule determination in respect of the relevant Rule must be published 6 weeks from the date of the publication of the notice under section 95 of the NEL.

¹⁶ www.aemc.gov.au

2 Final Rule Determination

2.1 Commission's determination

In accordance with section 102 of the NEL the Commission has made this final Rule determination in relation to the Rule proposed by AEMO. In accordance with section 103 of the NEL the Commission has determined to make, with amendments, the Rule proposed by the Rule proponent.¹⁷

The Commission's reasons for making this final Rule determination are set out in section 3.1.

The *National Electricity Amendment (Publication of a Carbon Dioxide Equivalent Intensity Index for the National Electricity Market) Rule No. 8 2010 (Rule as Made)* is published with this final Rule determination. The Rule as Made commences on 22 July 2010. The Rule as Made is different from the Rule proposed by the Rule Proponent. Its key features are described in section 3.2.

2.2 Commission's considerations

In assessing the Rule Change Request, the Commission considered:

- the Commission's powers under the NEL to make the Rule;
- the Rule Change Request;
- the fact that there are no relevant Ministerial Council on Energy (MCE) Statement of Policy Principles in relation to this Rule Change Request;¹⁸
- submissions received during first and second rounds of consultation; and
- the Commission's analysis as to the ways in which the proposed Rule will or is likely to, contribute to the achievement of the National Electricity Objective (NEO).

2.3 Commission's power to make the Rule

The Commission is satisfied that the Rule as Made falls within the subject matter about which the Commission may make Rules. Under section 34(1)(a)(iii) of the NEL, the Commission may make Rules for or with respect to regulating "the activities of persons (including Registered participants) participating in the national electricity market or

¹⁷ Under section 103 (3) of the NEL the Rule that is made in accordance with section 103(1) need not be the same as the draft of the proposed Rule to which a notice under section 95 relates or the draft of a Rule contained in a draft Rule determination.

¹⁸ Under section 33 of the NEL the AEMC must have regard to any relevant MCE statements of policy principles in making a Rule.

involved in the operation of the national electricity system". AEMO participates in the NEM. The Rule as Made seeks to regulate the activities of AEMO in so far as it requires AEMO to, among other things, develop, review and update a carbon dioxide equivalent intensity index. AEMO's activities under the Rule as Made are associated with its participation in the NEM because the carbon dioxide equivalent intensity index is calculated by AEMO, in part, on the basis of metered energy data collected by AEMO in its role as operator and administrator of the wholesale exchange of electricity.

Separately, under section 34(1)(b) of the NEL, the AEMC may make Rules for or with respect to "any matter or thing contemplated by this Law, or is necessary or expedient for the purposes of this Law".

What matters are "contemplated by" the NEL is guided by consideration of the NEO, as the NEO sets out the objectives of the NEL.

The NEO is set out in section 7 of the NEL and states:

"The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity;
and
- (b) the reliability, safety and security of the national electricity system."

For the reasons set out in section 2.4 below, the Commission considers that the Rule as Made will contribute to the achievement of the NEO and is therefore a matter contemplated by the NEL.

2.4 Rule making test

Under section 88(1) of the NEL the Commission may only make a Rule if it is satisfied that the Rule will, or is likely to, contribute to the achievement of the NEO. This is the decision making framework that the Commission must apply.

For the Rule Change Request, the Commission considers that the relevant aspect of the NEO is promoting efficient investment in, and efficient operation of, electricity services for the long term interests of consumers with respect to price and reliability of supply of electricity.¹⁹

The Commission is satisfied that the Rule as Made will, or is likely to, contribute to the achievement of the NEO because the Rule as Made promotes administrative efficiency – the Rule as Made provides clarity to AEMO regarding its role to develop and publish

¹⁹ Under section 88(2), for the purposes of section 88(1) the AEMC may give such weight to any aspect of the NEO as it considers appropriate in all the circumstances, having regard to any relevant MCE statement of policy principles.

a NEM CO₂-e Intensity Index, and reduces the burden of administrative costs on market participants by providing for a reliable, transparent and consistent Index which can be used to inform commercial decision making in the NEM.

The Rule as Made also promotes efficiency by supporting a greater level of certainty and predictability regarding the availability and level of the information provided by the NEM CO₂-e Intensity Index. This is likely to reduce to some extent the existing uncertainty and risks for market participants to settle forward electricity contracts which seek to take account of the price risks associated with a potential price on carbon. The Rule as Made therefore is likely to promote and support liquidity in forward electricity contracting, which in turn is likely to more promote efficient pricing in the wholesale spot market and encourage greater investment certainty in electricity services in the NEM. These are both essential to supporting competition in the market so as to deliver more efficient prices to consumers.

Under section 91(8) of the NEL the Commission may only make a Rule that has effect with respect to an adoptive jurisdiction if it is satisfied that the proposed Rule is compatible with the proper performance of AEMO's declared network functions. The Rule as Made is compatible with the proper performance of AEMO's declared network functions because it has no impact on Rules relating to AEMO's declared network functions.

3 Commission's reasons

The Commission has analysed the Rule Change Request and assessed the issues/propositions arising out of this Rule Change Request. For the reasons set out below, the Commission has determined that a Rule be made.

3.1 Assessment of Issues

As outlined in section 1.2, the Rule Change Request seeks to introduce a new governance arrangement under the Rules for AEMO to develop, maintain and publish a NEM CO₂-e Intensity Index. The proposed NEM CO₂-e Intensity Index (as published by AEMO on either a weekly/daily basis) is sought to provide standard, reliable and transparent information to inform and support commercial outcomes in the NEM. Specifically, to allow market participants to account for the ongoing uncertainty and the impact of a future price of carbon (should one be present in the future) on wholesale electricity prices, when settling forward electricity contracts.

The Commission has assessed the Rule Change Request in regards to the following key issues: the role of the CO₂-e Intensity Index and potential efficiency benefits in the NEM; the provision of a NEM CO₂-e Intensity Index by AEMO; and the proposed framework under the Rules for which the proposed NEM CO₂-e Intensity Index would be published. Detailed discussion of these issues is provided in Chapters 5 and 6.

The Commission considers that the provision of a standardised Index is likely to promote efficiency benefits in the NEM. This is because an Index that is reliable and transparent is likely to better represent the optimal information required to determine the potential uplift due to carbon on future wholesale electricity prices; reduce the existing uncertainty and eliminate the need for market participants to engage in separate, and costly, bilateral negotiations to determine the required value of the average carbon intensity of generation in the NEM. The provision of such an Index therefore is likely to provide a greater level of confidence to market participants to trade and settle longer term forward electricity contracts, which in turn is likely to promote more efficient pricing in the wholesale electricity market and provide for greater investment certainty in the NEM.

Currently there is no obligation under the Rules for the provision of information relating to the carbon intensity of generators in the NEM. The Commission considers that a Rule is required to provide clarity regarding the provision of a NEM CO₂-e Intensity Index by AEMO, enhance transparency regarding the processes which underpin the development and publication of the Index, and ensure reliability of information is maintained over time to inform more efficient outcomes in the NEM. The Rule also seeks to promote certainty and predictability for market participants regarding the availability of a suitable Intensity Index in the future so as to settle forward electricity contracts which seek to take account of the policy uncertainty related to a potential price on carbon.

3.2 Rule as Made

The Rule as Made introduces a new obligation in the Rules for AEMO to develop, review, amend and publish a CO₂-e Intensity Index for the NEM that represents the volume weighted average of the carbon dioxide equivalent greenhouse gas emissions from all scheduled generating units and market generating units for the relevant time interval. Taking into consideration issues raised in the second round of consultation, minor amendments were made to improve the clarity of the Rule.

The Rule as Made also includes the requirements for AEMO to:

1. develop and publish procedures to support the publication of the Index:
 - Under this requirement AEMO would, in consultation with stakeholders,²⁰ determine: the appropriate methodology for calculating the Intensity Index; the form of emission factors and energy measurements used (i.e. sent out emission factors and energy data); and the methodology for estimating any emission factors where the emission factors for the relevant generating units are not publicly available. In addition, AEMO in consultation with stakeholders would determine the appropriate time intervals for which the index is to be published and reviewed.
2. publish the appropriate information regarding the relevant generating units and emission factors used in the calculation of the Intensity Index:
 - Under this requirement, AEMO must publish a list of all generating units included in the Index and, for each generating unit, its emission factor and the source of the emission factor information. AEMO is required to update this information in accordance with agreed procedures. In addition, AEMO must update this information if it is advised that the emission factor for a generating unit has changed and the data on the emission factor is publicly available and, in AEMO's opinion, from a reliable source.

The Rule as Made also includes:

- the flexibility for AEMO to develop and publish supplementary indicators, where these relate to a subset of the relevant generating units included in the singular NEM CO₂-e Intensity Index. The same provisions provided above would apply to these supplementary indicators;
- guidance to AEMO with respect to maintaining an appropriate level of accuracy and reliability of the relevant data sources to calculate the Index. This is particularly with respect to how the emission factors of individual generators are sourced and/or determined by AEMO. In particular, the Rule as Made provides that AEMO is to have regard to the Australian Government's National Greenhouse and Energy Reporting System (NGERs).

²⁰ In accordance with rule 8.9 of the NER.

This is to ensure that there is the appropriate level of consistency with national approaches for deriving relevant emission factors/ greenhouse gas emissions.

Finally, the Rule as Made requires AEMO to modify the spot market operations timetable published under clause 3.4.3 of the Rules to include the time intervals in which AEMO must publish the NEM CO₂-e Intensity Index.

The commencement date for the Rule will be 22 July 2010. The first NEM CO₂-e Intensity Index procedures must be published by no later than 22 July 2011 and the first NEM CO₂-e Intensity index must be published as soon as practicable after the publication of the procedures.

4 Commission's assessment approach

This chapter describes the Commission's approach to assessing the Rule Change Request in accordance with the requirements set out in the NEL (and explained in Chapter 2).

In assessing this Rule Change Request, the Commission has considered the following issues, the:

- role of a standardised NEM CO₂-e Intensity Index and the potential benefits of such an Index for promoting efficiency in the NEM; and
- provision of a NEM CO₂-e Intensity Index by AEMO and proposed governance framework under the Rules for publication.

The Commission has focussed on this set of issues because:

- these issues relate to whether a regulatory obligation is required for AEMO to develop and publish a NEM CO₂-e Intensity Index; and
- are considered by the Commission to be of material significance as to whether or not the proposed Rule would meet the Rule making test.

In addition to the elements of the statutory Rule change process adhered to by the Commission, the application of the Commission's analytical approach in this instance has involved the following tasks and methods:

- bilateral consultation with stakeholders, including AEMO, AFMA and the Australian Government Department of Climate Change and Energy Efficiency on the issues raised in this Rule Change Request; and
- reviewing existing national protocols and approaches pertaining to greenhouse gas and energy reporting.

5 Role and potential efficiency benefits of a CO₂-e Intensity Index in the NEM

In the Rule Change Request, AEMO proposed to include a new provision in the Rules for it to publish a NEM CO₂-e Intensity Index. In order to assess whether the Rules should provide for the publication of a NEM CO₂-e Intensity Index, the Commission considered the role of the Intensity Index in the market and how provision of such an Index is likely to promote efficiency in the NEM.

5.1 Rule Proponent's view

In the Rule Change Request, AEMO stated that a NEM CO₂-e Intensity Index is specifically required so that there is standard and consistent reference information about the average carbon intensity of generation in the NEM for a particular time period of operation of the NEM (i.e. a day or a week). AEMO noted that this information is specifically sought by market participants to allow the mark up on a contract due to carbon to be determined (if a carbon price should be present in the future) in the settlement of certain forward electricity contracts.²¹

5.2 Stakeholders' views

In submissions received in the first and second round of consultation, stakeholders noted the importance of a single, standard and consistent CO₂-e Intensity Index for the NEM. Generally, stakeholders considered that the provision of such an Index would assist to guide energy and financial transactions and allow market participants and other relevant parties to assess the likely future costs and benefits of carbon-inclusive pricing of electricity. Stakeholders also were of the view that the provision of a NEM CO₂-e Intensity Index would:

- ensure that an optimal approach is taken to price in potential future carbon costs and reduce the ongoing uncertainty faced by market participants;
- streamline existing processes to obtain such information; and
- support an open and competitive wholesale contract market, contributing to liquidity of forward electricity contract markets, and promoting efficiency with respect to operation of, and investment in, electricity services.

As noted, stakeholder comments and issues raised from the first and second round consultations are provided in Appendix A.1 and A.2 respectively.

²¹ AEMO Rule Change Proposal, p.5.

5.3 Commission's analysis

The Commission recognises that the ongoing policy debate and uncertainty related to a potential carbon scheme is presenting some challenges for market participants with respect to their ability to manage the price risks associated with a future price on carbon on NEM pool prices, and thus to negotiate and settle forward electricity contracts. This, as a result is also causing some level of investment uncertainty in the NEM.

The Commission notes that whilst forward contracting operates outside the Rules, it is inextricably linked to the efficient operation of the NEM. Forward contracting effectively provides a tool for market participants to manage the financial risks associated with the significant degree of spot price volatility in the NEM. Contracting also helps signal the need for new investment by converting the expected future spot market prices into a financial instrument that can be used to underwrite an investment decision. Liquidity in the financial electricity market therefore is important to promote efficient pricing in the wholesale market and assist in informing efficient investment decision making in the NEM.

The Commission understands that the Carbon Addendum developed by AFMA to its existing over-the-counter documentation references the provision of a NEM CO₂-e Intensity Index (published by AEMO)²² as one of the key determinants to determine the uplift due to carbon on a contract. The Commission notes that this Addendum is generally considered by stakeholders to be an equitable method of offsetting windfall gains and losses arising from the potential impact of carbon on NEM pool prices and a suitable tool to manage the ongoing policy uncertainty.

Currently, stakeholders consider that there is not a suitable CO₂-e Intensity Index for the NEM which is available for use or for market participants to rely upon when settling forward contracts which utilise the AFMA Addendum. As a result, in the absence of a suitable Index, market participants are required to enter into separate bilateral negotiations and/or appoint an independent expert if an agreement cannot be reached within a specified time period.²³ It is considered by stakeholders that these processes present even greater uncertainty and additional risks and costs for market participants to enter into and settle these contracts.

The Commission considers that the provision of standard NEM CO₂-e Intensity Index is likely to promote more efficient outcomes in the NEM. This is because the proposed CO₂-e Intensity Index provides market participants and the market with a more informed view of the likely uplift, due to a future price of carbon on wholesale electricity prices - the Index represents the average carbon intensity of generation in the

²² The 2008 and 2009 ACBA references the previous NEM GII published by AEMO. The Index represents the average carbon intensity (expressed as in tonnes of CO₂-e/MWh of generating units (as defined in the NER)). See AEMO Rule change request at <http://www.aemc.gov.au/Electricity/Rule-changes/Open/Publication-of-a-Carbon-Dioxide-Equivalent-CO2-e-Intensity-Index-for-the-National-Electricity-Market-NEM.html>

²³ Refer to AFMA Addendum p.18 of AEMO Rule Change Request.

NEM over a specified time period, which would be consistent with the dispatch and settlement outcomes of the wholesale spot market. The information would also be available to all market participants, which would provide greater transparency with respect to determining impact of carbon on wholesale electricity prices. In addition, the likelihood of different and multiple values used which seek to represent the carbon intensity of generation in the NEM would be reduced as market participants would not need to engage in separate bilateral process or to appoint an independent expert. As a consequence, the provision of a standardised NEM CO₂-e Intensity Index is likely to promote more efficient pricing in the wholesale spot market, and therefore prices paid by consumers. It is also likely that greater investment certainty will also be provided.

5.4 Conclusion

The Commission recognises that the provision of a NEM CO₂-e Intensity Index which provides standard and consistent reference information about the average carbon intensity of the NEM is likely to inform and support commercial outcomes in the NEM. In particular, to facilitate the trade and settlement of forward electricity contracts which account for the policy uncertainty related to the potential for a price to be placed on carbon. A NEM CO₂-e Intensity Index is therefore likely to support liquidity in the financial electricity market which in turn is likely to promote efficiency with respect to the operation of, and investment in, electricity services.

6 Provision of a NEM CO₂-e Intensity Index by AEMO and proposed governance framework under the Rules

This chapter sets out the Commission's considerations regarding the provision of the proposed NEM CO₂-e Intensity Index by AEMO and the need for, and application of, a governance arrangement and framework under the Rules.

6.1 Rule Proponent's view

As discussed in section 1.3, AFMA has requested that AEMO develop and publish a CO₂-e Intensity Index for the NEM as it is considered that there is no suitable Index available for market participants to rely upon and use following the termination of an equivalent greenhouse intensity index on AEMO's website in April 2009.²⁴

AEMO noted in their Rule Change Request that for it to publish a suitable future NEM CO₂-e Intensity Index, a formal governance arrangement is required under the Rules. AEMO consider that such an arrangement is necessary as it would:

- remove uncertainty for AEMO and market participants as to whether AEMO should provide the Index;
- provide the appropriate protections and guidance for AEMO to perform the role; and
- increase transparency and certainty for market participants regarding the form of the Index to be published, and also the availability of a NEM CO₂-e Intensity Index in the future.²⁵

AEMO considered that a framework that outlines the requirements to calculate and publish the NEM CO₂-e Intensity Index should be included in the Rules. Such requirements would include the development of detailed procedures which would set out the methodology, the form of data inputs to be used and the information which would be made publically available.²⁶

AEMO indicated that it intends to use publically available emission factors and internal information systems for retrieving the relevant energy data.²⁷

AEMO noted as a result, that it would incur the costs and administrative burden associated with developing and publishing the Index, with these costs being passed onto market participants. AEMO highlighted however that the administrative burden/costs would not be large as development activities would leverage, to the

²⁴ AEMO Rule Change Proposal, p.5.

²⁵ AEMO Rule Change Proposal, p.7.

²⁶ This would be in accordance with the Rules consultation procedures – rule 8.9 of the Rules.

²⁷ AEMO Rule Change Proposal, p.8.

extent possible, off the earlier design of the previous Intensity Index published and established market information systems.²⁸

6.2 Stakeholders' views

Stakeholders, in the first round of submissions, generally considered AEMO was the appropriate body to provide required the CO₂-e Intensity Index for the NEM. Stakeholders specifically noted that AEMO has access to the most accurate metered energy data (which is the changing variable for the Index) has the ability to source and update individual generators emission factors, and can utilise/build upon the existing processes used to develop the previous equivalent greenhouse intensity index.

Stakeholders also considered that the Rules should provide for the calculation and publication of the proposed Intensity Index by AEMO. Stakeholders considered that a formal and transparent framework which outlined the principles and objectives for the Index would reduce existing uncertainty faced by market participants and enhance transparency of information available to all market participants. It was also noted that the presence of such a framework is likely to enhance the transparency of electricity contract pricing in the NEM, which is likely to promote efficient operation of both physical and financial electricity markets.

Stakeholders raised a number of key issues with respect to the proposed framework for AEMO to calculate and publish the Intensity Index. These included:

- the data inputs to calculate the Index should be sufficiently reliable and accurate, but should not impose considerable regulatory burden on NEM participants;
- specific emission factors for individual generators should be sourced from public sources where possible, as long as these are updated as appropriate. It was noted that the emission factors should maintain an appropriate level of consistency with existing national greenhouse and energy measurement and reporting processes;²⁹
- any procedures developed to support the publication of the Index should be sufficiently transparent, available to the public and provide flexibility for AEMO to review and update accordingly; and
- generally a daily CO₂-e Intensity Index is appropriate as this would provide for greater flexibility for market participants to apply in their contracts based on their individual circumstances.

Generally stakeholders in their second round submissions supported to the recommendations in the draft Determination. Some stakeholders noted the following with respect to the proposed framework under the Rules:

²⁸ AEMO Rule Change Proposal, p.10.

²⁹ The national reporting system for greenhouse and energy reporting will be utilised as the national system that will be used to support reporting requirements under a proposed carbon scheme.

- that it is essential for market participants to contribute to the development of robust procedures for the index. Considered that this is likely to deliver a greater level of efficiency and certainty for market participants;
- AEMO should have some flexibility regarding the relevant form of data required. This should be guided by consistency with the national greenhouse and energy reporting system and minimising the administrative burden on generators;
- it is important for the Index to be maintained at appropriate frequency; and
- that, given the delayed start to the CPRS, the proposed timeframe of up to twelve months for AEMO to develop the procedures is appropriate. This will ensure that the initial Intensity Index is published prior to the commencement of a CPRS (or any other similar scheme).

Two stakeholders raised concerns regarding the approach for deriving and publishing the emission factors. Marubeni Power Development Pty Ltd noted that any emissions included in the Intensity Index which are from cogeneration facilities should ensure and recognise the thermal efficiency benefits of cogeneration. Thus the emission intensity factors for these generators should be reported appropriately and the relevant national technical guidelines which derive the appropriate emission intensity factor for these facilities should be utilised.

Alinta Energy, however, specifically indicated that it did not support the requirement of AEMO listing all generating units emission factors. It considered if AEMO were to publish emission factors, regardless of the source, the statistic will become "official" making it a reference point of contract formulation as a substitute for the NEM CO₂-e Intensity Index itself. Alinta noted that listing the source of emission factors utilised provides sufficient transparency for the Index. In addition, Alinta also raised the following key issues:

- AEMO should be required to publish a disclaimer with the NEM CO₂-e Intensity Index which sets out its purpose as well as acknowledging that the data that this index will have will not have the same level of accuracy and precision as provided by generators under NGERs; and
- a sunset clause should be included in the Rules to reflect the transitional role of the NEM CO₂-e Intensity Index.

The Commission has considered these issues in assessing the proposed framework for inclusion under the Rules. The relevant issues and comments by stakeholders are outlined in the submissions summary provided in Attachment A.1 and A.2.

6.3 Commission's analysis

In determining whether a new governance arrangement under the Rules is required for AEMO to develop a NEM CO₂-e Intensity Index, the Commission has had regard to the existing national regulatory reporting instruments which underpin climate change

policies as these are the primary mechanisms that provide for greenhouse gas emission/energy data.

6.3.1 National Greenhouse and Energy Reporting System

The Commission notes that the Australian Government has introduced a National Greenhouse and Energy Reporting System (NGERs) that provides a national approach for greenhouse and energy reporting. This reporting system encompasses the National Greenhouse and Energy Reporting Act 2007 (Cth) (NGER Act) which establishes the framework and mandatory corporate reporting system for greenhouse gas emissions, energy consumption and production. It has been noted that the NGER system will also support the reporting obligations of businesses under a potential carbon scheme.³⁰

The NGER Act mandates that corporations with greenhouse gas emissions, or energy consumption or production above a certain specified threshold, must report their relevant greenhouse and energy data to the appropriate designated authority (i.e. the Australian Government Department of Climate Change and Energy Efficiency). Under NGERs, the data is required to be reported by registered corporations at the end of each relevant financial year. That data is made available to all relevant Australian Government, state and territory officials nominated under the NGER Act, whilst aggregate level greenhouse and energy information of the relevant facilities is released publically, generally in the second quarter, after the end of the appropriate reporting financial year.

To calculate a NEM CO₂-e Intensity Index that represents an approximation of the average of the greenhouse gas emissions from all market generating units and scheduled generating units operating in the NEM over a specified time period, two important data sources are required. Firstly, the emission factors of individual generators, and secondly, the relevant energy data of those relevant generators. The level of information and time period sought for the NEM CO₂-e Intensity Index is, for example, a week or day of operation of the NEM, therefore for publication of the Index, specific operational data is required.

The Commission notes the objective of NGERs and its design is to provide corporations annual greenhouse and energy production data and which is based on facility level information (i.e. that is, the emissions/energy production/consumption for the whole site of the facility). To derive the required value for the NEM CO₂-e Intensity Index for the NEM, significant manipulation of the greenhouse and energy data reported under NGERs would be required. In addition, significant amendments would be needed to the existing online reporting tool to extract the appropriate level of information. This is likely to impose significant costs as a result. Further, any data that may be reported publically is not likely to be provided in a timely manner for market participants to use given the end of year financial reporting requirements under NGERs.

³⁰ Refer to <http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting.aspx>.

The Commission also notes that to publish the required information, changes to relevant legislation would be required. Firstly, the relevant emission factors of individual generators are currently commercial in confidence under the NGERs. Secondly, timely and sufficiently accurate energy data would need to be sourced from AEMO. Metered energy data is also currently treated as confidential information under the Rules. Changes to legislation are likely to involve lengthy processes and would be also subject to the objectives of each of the legislative instruments.

The Commission, taking into account these relevant issues, is therefore of the view that the use of the NGER reporting mechanism is not likely to be fit for purpose, in this instance, to provide a NEM CO₂-e Intensity Index for the market that could be relied upon to settle forward electricity contracts which utilise the existing Carbon Addendum.

6.3.2 Provision of a governance arrangement under the Rules

The Commission notes that an Intensity Index provided by AEMO is considered the preferred option for the market as this is likely to result in the most reliable and robust information for market participants to rely upon. The Commission also notes stakeholder views that AEMO has access to accurate metered energy data and the appropriate emission factors of generators which it gathers through other market reporting functions.

The Commission is of the view that AEMO is the appropriate body to provide the Intensity Index as alternative market approaches may deliver the most efficient outcomes in the NEM and may also present greater risks and thus costs for market participants. For example, alternative approaches provided by the market may not provide sufficiently reliable or transparent information and may impose greater costs if market participants are required to report information directly. There is also a risk that an Index published by the market may not be representative of all generators in the NEM. This is particularly if the data is not readily available in the public domain and/or generators do not wish to report their energy or emission factors data. In addition, there may not be sufficient incentives for generators to provide accurate data over time, or for the Index to be available in the future. Finally, the Commission considers that there also may be risks of multiple indices being published in response to the different stakeholders needs i.e. informing climate change policy outcomes. This is likely to result in inaccurate and different data being available and thus inefficiencies with respect to market participants determining the efficient future price of electricity for the purposes of contracting.

Currently there is no regulatory obligation for AEMO to provide a NEM CO₂-e Intensity Index, nor do the Rules provide for such information to be published generally. As discussed in Chapter 5, the role and need for a NEM CO₂-e Intensity Index is to provide suitable information about the carbon intensity of generation in the NEM so as to assist market participants to settle forward electricity contracts, which take account of the uncertainty related to a potential price on carbon on NEM pool prices. The Commission considers therefore that the benefit and value of a CO₂-e

Intensity Index to market participants and for promoting efficiency in the NEM, will be a function of the quality and appropriate level of data accuracy; and the certainty provided to market participants.

The Commission therefore considers that the inclusion of a framework in the Rules that sets out the intent of the Index and requirements for calculating and publishing the Intensity Index is likely to deliver a greater level of efficiency in the market and certainty for market participants than in the absence of such an arrangement. This is because a formal arrangement would provide a greater level of guidance on ensuring and maintaining reliability and accuracy of the data inputs over time, enhance transparency with respect to how the Index is calculated and provide certainty and predictability for market participants regarding the availability of the Index in the future. The Commission also considers that it is appropriate that there is sufficient clarity provided to AEMO regarding its role as a result of the proposed use of the Index in commercial applications.

6.3.3 Proposed framework to develop and publish the CO₂-e Intensity Index

AEMO proposed a framework to develop a CO₂-e Intensity Index for the NEM. The Commission has considered this framework having regard to the need to ensure a robust Index which market participants can rely upon and the level of administrative/regulatory burden placed on AEMO and NEM participants. These issues are discussed further below.

Information requirements for calculating the Intensity Index

As noted, to calculate the CO₂-e Intensity Index, specific emission factors of individual generators and the volume of metered energy (in MWh) for those generators is required. The proposed framework by AEMO does not include any explicit powers that would require generation businesses to provide information, specifically with respect to the relevant emission factors of individual generating units.

AEMO indicates that emission factors would be sourced from publically available sources. Where an explicit emission factor in respect of a particular generating unit cannot be found, AEMO anticipates that it would need to determine an estimate of the data. The means of estimation would be determined through the proposed stakeholder consultation process and included in the procedures supporting the Index. AEMO notes that energy data would be sourced from its metering databases.

The Commission considers that it is important that reliable and sufficiently accurate data inputs are sourced and derived by AEMO to calculate the Index. This is important to maintain the level of accuracy of the index over time which is in turn important for promoting allocative efficiency outcomes. The Commission understands that AEMO has access to sufficiently reliable data sources with respect to emission factors of generators, and maintains the most accurate metered energy data.

Whilst the Commission considers that flexibility should be provided to AEMO regarding the relevant form of data required (i.e. sent out energy data/emission

factors) and the methodology for calculating emission factors, the Commission has determined to include some guiding principles which AEMO should consider when deriving the relevant data inputs. These principles relate to maintaining the reliability of the data inputs, ensuring appropriate level of consistency with national guidelines for deriving emission factors of generators, and ensuring the Index is updated in accordance with changing circumstances.

The Commission notes that some stakeholders raised concerns regarding the details of how emission factors may be calculated for some generators and publication of emission factors of generators listed in the NEM CO₂-e Intensity Index. As proposed in the Rule as Made, AEMO in consultation with stakeholders is to determine the methodology of emission factors where these are not already publically available. AEMO in undertaking this, is to have regard to the national approaches/methodology for estimating emission factors for relevant generators as appropriate. The Commission also notes the concerns of stakeholders regarding publication of emission factors, however given that this data is already publically available by AEMO through its existing information reports to the market, publishing the information in the form proposed is consistent with that existing approach and ensure the appropriate level of transparency of the information.

Methodology

AEMO proposes to develop detailed procedures in consultation with stakeholders that would set out the methodology for publishing the NEM CO₂-e Intensity Index. The Commission considers that this is appropriate and that there should be some level of flexibility given with respect to the determining the mechanism for which the Index is calculated. This is likely to reduce the regulatory burden on AEMO and costs to derive the Index. It is noted, however, the procedures should provide for an the appropriate level of transparency and certainty for market participants regarding the methodology and the parameters for which the Intensity Index is published. Therefore the Commission has decided to specify the key parameters which AEMO should include in the procedures, and the information that should be made publically available.

Publication and Review

The Commission notes that some stakeholders raised a number of issues for publication and review of the proposed Index, including, the need for:

- a weekly or monthly index. Whilst AEMO did not propose the time period for which a NEM CO₂-e Intensity Index would be published, the Commission notes that a daily index is likely to provide the appropriate level of flexibility for market participants to determine the appropriate value needed to settle forward electricity contracts. The Commission is of the view however that the frequency of publication of the Intensity Index can be determined by AEMO, in consultation with stakeholders and specified in the procedures. Consequently, the Commission has not proposed to specify the time period for which the Index should be published;

- supplementary intensity indicators for a subset of information related to the primary NEM CO₂-e Intensity Index value. The Commission considers that it is appropriate for AEMO to derive and publish such information where this is a subset of the data provided in the NEM CO₂-e Intensity Index. The Commission notes that the proposed procedures would set out both information and methodology in the event that this information is required by market participants; and
- a sunset clause to be included in the Rules for the provision of the NEM CO₂-e Intensity Index. The Commission has determined not to include a date based sunset clause given the uncertainty of the commencement and implementation of the introduction of a CPRS. In addition, in accordance with standard rule making processes, AEMO or any other persons are able to submit a Rule change request if it is considered the use of the NEM CO₂-e Intensity Index is not required once a carbon scheme (or any other similar measure) is introduced.

6.4 Conclusion

The Commission considers that inclusion of a formal framework in the Rules for AEMO to develop, maintain and publish a NEM CO₂-e Intensity Index would ensure that the relevant considerations are taken into account when developing and publishing the Intensity Index. It would also ensure that there is appropriate level of guidance on the need for sufficiently reliable and accurate data sources, and that the reliability and relevance of the Index is maintained over time. The inclusion of a framework in the Rules will also enhance the transparency of information and methodology used to calculate the Index which will provide confidence to market participants and other parties regarding the form and availability of the Index in the future.

The Commission considers that such an arrangement is likely to benefit market participants, and will provide the certainty to settle forward electricity contracts. This is likely to promote liquidity in the electricity financial market, which in turn is likely to promote more efficient pricing in wholesale market and create a greater level of investment certainty. Therefore the Commission considers that the proposal is likely to contribute to the achievement of the National Electricity Objective.

Abbreviations

ACBA	Australian Carbon Benchmark Addendum
AEMC or Commission	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AFMA	Australian Financial Markets Association
CO ₂ -e	Carbon Dioxide Equivalent
CPRS	Carbon Pollution Reduction Scheme
GII	Greenhouse Intensity Index
MCE	Ministerial Council on Energy
MWh	megawatt hour
NEL	National Electricity Law
NEM	National Electricity Market
NEM CO ₂ -e Intensity Index	Carbon Dioxide Equivalent Intensity Index for the National Electricity Market
NEO	National Electricity Objective
NER or Rules	National Electricity Rules
NGERs	National Greenhouse and Energy Reporting System
OTC	over-the-counter

A Summary of issues raised in submissions

A.1 First round of consultation

The first round of consultation on the Rule Change Request closed on 11 February 2010. In total, five submissions were received. The issues raised in the submissions, and the AEMC's response to these issues, are summarised in the following table.

Stakeholder	Issue	AEMC Response
AGL	Supports proposed Rule change - considers Rule change will assist the wholesale electricity market transition to inclusion of carbon costs; will lead to streamlining within standard contracts applicable to wholesale electricity that are being written and traded prior to the proposed introduction of the CPRS; and support an open and competitive wholesale contract market that is not distorted by sub-regional characteristics - optimal way to price in uplift due to carbon as reflects the competitive wholesale market operation.	Noted. Analysis notes issues relating to the role of CO ₂ -e Intensity Index for the NEM and difficulties faced by market participants associated with pricing carbon in forward electricity contracts.
AGL	Consider AEMO is the most appropriate body to provide Index, given they house the most accurate data with respect to market dispatch within in the NEM.	Noted. Analysis of alternative arrangements suggests that these are not likely to be fit for purpose or maintain level of accuracy and transparency which could be provided by AEMO.
AGL	Supports inclusion of a governance framework in the Rules for AEMO to develop and publish the required Index. Provides clarity to AEMO of its Role to publish the Index and reduces uncertainty faced by market participants which will contribute to liquidity of the forward electricity markets. A formal structure regarding calculation and	Noted. Analysis suggests that inclusion of a formal arrangement in the Rules would provide clarity, improve transparency of information on likely price impacts of carbon for future electricity costs and is likely to reduce the existing uncertainty faced by market participants.

Stakeholder	Issue	AEMC Response
	publication frequency establishes an informed view of the key input into future electricity costs.	
AGL	Notes AEMO proposal to source emission factors of generating units from publically available information. Supports an approach that imposes least administrative burden for market participants and AEMO. Considers inputs to NEM CO ₂ -e Intensity Index do not need to be treated as confidential.	Noted. There is a need to ensure appropriate level of accuracy and relevance of data inputs for deriving the intensity index to ensure delivering of appropriate benefits for market participants and the NEM. The draft Rule did not propose to impose administrative/regulatory burden on NEM participants, however guidance to AEMO was included in the Draft Rule for deriving and sourcing emission factors. These provisions have been carried over to the Rule as Made.
AGL	Considers that there is review processes to ensure that NEM CO ₂ -e Intensity Index emission factors used do not stray from data used in national greenhouse accounts - index with emission factors that stray from national emissions and measuring reporting process may result in cost-pass through occurring that is not reflective of market costs (and emissions).	The risks of multiple sources of emission factors is noted. Guidance to AEMO relating to methodology for calculating and sourcing emission factors of individual generators was included in the Draft Rule. These provisions have been carried over to the Rule as Made.
AGL	Considers a weekly NEM CO ₂ -e Intensity Index is reasonable for commencing publication, however notes that the frequency should be subject to review based on market feedback and behaviour.	The flexibility required for market participants to utilise information in the Index accordingly to their individual needs is noted. The timing of publication of the Index, whether weekly or daily is to be established and specified by AEMO when developing procedures for the Intensity Index.
Clayton Utz	Supports proposed Rule change - considers publication of the Index is important to transparency and stability of price in the NEM for NEM participants and ultimately consumers. Will assist to stabilise electricity derivatives by providing information needed to make assessment of likely future costs and benefits of carbon-inclusive pricing of electricity.	Noted.

Stakeholder	Issue	AEMC Response
Clayton Utz	Supports approach of compiling Index on basis of publically available information as proposed by AEMO. Considers information sufficiently reliable allows AEMO to prepare Index without imposing additional compliance obligations on NEM participants.	Noted and agreed. The draft Rule incorporated guidance to maintain appropriate level of accuracy of data inputs to calculate the Intensity Index. These provisions have been carried over to the Rule as Made.
Clayton Utz	Supports publication of list of generating units, information/methodology used to calculate Intensity Index. Consider detailed procedures should provide for corrections to index to be made as soon as possible.	Agreed. There is a need to maintain transparency with respect to processes to calculate intensity Index. The draft Rule incorporated provisions for the development of procedures that provide requirements to calculate, update and publish the Intensity Index. These procedures are to be published and updated as appropriate. These provisions have been carried over to the Rule as Made.
Clayton Utz	Propose an amendment to proposed Rule to clearly allow AEMO publish more than one Index, i.e. weekly or monthly index. Most retail energy contracts operate on a monthly or quarterly billing cycle, a monthly intensity Index would assist in pass through of carbon values under those contracts.	Noted. The draft Rule provided for AEMO to publish supplementary indicators. The timing to publish the CO ₂ -e Intensity Index and supplementary indicators is to be determined by AEMO in consultation with stakeholders. These provisions have been carried over to the Rule as Made.
Ergon Energy	Supports AEMO to maintain, update and publish the Index with an explicit obligations under the Rules.	Noted.
Ergon Energy	Consider the need for detailed specification by AEMO in the procedures to be developed as to the means by which emission factors are to be derived and the nature of publically available information that may be relied upon, and estimation methodology to be applied in the absence of verified data.	Agreed. See comments above.

Stakeholder	Issue	AEMC Response
National Generators Forum	Supports development of a generic but robust Intensity Index for use by market participants and related financial institutions based on individual power station emission intensities and energy generated or sent out. Considers that it is appropriate for the calculation and publication of the Intensity Index to be provided for in the Rules. A transparent approach using appropriate inputs provides most cost effective and consistent way of developing and reporting the Index on a periodic basis.	Noted.
National Generators Forum	Consider AEMO appropriate body to provide the Index, given access to accurately metered generated and sent out energy data which is the key changing variable. AEMO is well placed to obtain/update necessary emission factors.	Noted.
National Generators Forum	Supports use of transparent publically available individual power station CO ₂ -e Intensities (emission factors) which is updated regularly (annual or more frequently basis).	Noted. See commentary above
National Generators Forum	Consider a daily Index is appropriate as provides most flexibility and allow parties to apply data according to their needs.	Noted. See commentary above.
Origin Energy	Consider that it is important for stakeholders to have confidence in data sourced from publicly available sources of information for emission factors. Propose that consideration is given to determining appropriate information required, need for appropriate level of confidentiality.	Agreed.

Stakeholder	Issue	AEMC Response
Origin Energy	Consider methodology to calculate the Index is best included in procedures. This would provide AEMO with appropriate flexibility to improve approach/inputs accordingly.	Agreed. The draft Rule provided for the development of detailed procedures that would include the methodology for how the Intensity Index is calculated and how/timing of processes and inputs are to be updated. These provisions have been carried over to the Rule as Made.
Origin Energy	Considers that there is consistency between the Intensity Index derived by AEMO and the information which Australian Government proposes to use for determining level of generator compensation as part of proposed CPRS. Maintaining appropriate level of consistency ensures that there is minimal potential for unintended wind-fall gains and losses.	Noted. The draft Rule provided guidance on the need for emission factors derived or sourced to have regard to national greenhouse reporting processes/guidelines. These provisions have been carried over to the Rule as Made.
Origin Energy	Without the presence of an Index, parties are required to agree on the average carbon intensity, or defer to a Independent Expert. Imperative that Index is operational prior to a CPRS, and thus the implementation period for producing first index should be as soon as practicable.	The purpose of CO ₂ -e Intensity Index is noted and its relevance relates to the fact that there is not an established carbon price to inform decision making on future price of electricity under a CPRS. The draft Rule indicated that the timing of publication of first Intensity Index is to be as soon as practicable after detailed procedures are to be published. Detailed procedures are to be developed and published at least by twelve months after the commencement date of the amending Rule. These provisions have been carried over to the Rule as Made.

A.2 Second round of consultation

The second round of consultation on the Rule Change Request closed on 17 June 2010. In total, six submissions were received. The issues raised in the submissions, and the AEMC's response to these issues, are summarised in the following table.

Stakeholder	Comments/Issue	AEMC response
Role and potential efficiency benefits of a CO₂-e Intensity Index in the NEM		
Alinta Energy	<p>Broadly supports the recommendations in Draft Rule Determination on the basis that the proposed Index will support a well-functioning, competitive wholesale contract market when a price or tax on carbon is introduced.</p> <p>Supports, in principle, the introduction of a CO₂-e Intensity Index, which is complementary to the legislative framework introduced to set a price on carbon; includes a sunset clause; is stable and consistent in the short term (within a year); and is accurate as possible over the medium terms (greater than a year). p.1.</p>	Noted.
AGL	Supports draft determination and emphasised importance of a singular CO ₂ -e Intensity Index for the NEM. p.1. Considers that this will support an open and competitive wholesale contract market which is not distorted by sub-regional characteristics and will increase transparency and promote liquidity in contract market. p.1-2.	Noted.
AEMO	Noted support at a general level of draft Rule proposed. Suggested some minor drafting amendments to the draft Rule that seek to improve structure/clarity. p.1.	Noted. Some minor amendments have been made to Rule as Made to improve clarity of the Rule.
NGF	Supports the draft determination and considers the introduction of a NEM CO ₂ -e Intensity Index will contribute to an open and competitive wholesale contract market. In addition, considers that the NEM CO ₂ -e Intensity Index will provide for increased transparency and contribute to liquidity in the related markets which in turn is likely to promote efficient operation and investment in electricity services. p.1-2.	Noted.

Stakeholder	Comments/Issue	AEMC response
Provision of a NEM CO₂-e Intensity Index by AEMO and inclusion of a governance arrangement under the Rules		
Alinta Energy	Considers that having AEMO set a NEM CO ₂ -e Intensity Index which market participants can reference will provide: credibility; transparency; and information, which will promote efficient market operations, and investment in electricity services. p.1.	Noted.
NGF	Supports the determination framework in the Rules. Considers that such a framework is likely to deliver greater efficiency in the contract market and greater certainty for market participants than would be case in the absence of such an arrangement. p.1.	Noted.
Origin	Supports the AEMC's draft decision to require AEMO to publish a NEM CO ₂ -e Intensity Index. Considers such an index will provide certainty in the financial markets going forward by providing a reliable reference point for calculating carbon costs. p.1.	Noted.
Proposed governance framework for publication of a CO₂-e Intensity Index under the Rules		
<i>Information and data requirements</i>		
Alinta Energy	Does not support requirement of AEMO listing all generating units' emission factors. Considers that listing the source of emission factors utilised provides sufficient transparency. Notes that if AEMO were to publish emission factors, regardless of the source, the statistic will become "official" making it a reference point of contract formulation as a substitute for the NEM CO ₂ -e Intensity Index itself. p.2.	The Commission notes the concern raised by Alinta. The Rule as Made provides for AEMO to publish emission factors which are used as an input to derive the NEM CO ₂ -e Intensity Index. The Commission notes that AEMO intend to use publically available information regarding use of emission factors (i.e. information on AEMO's website). Therefore publishing emission factors is consistent with that existing approach and maintains an appropriate level of transparency.
AGL	Notes draft Rule considers AEMO should be awarded some degree of flexibility regarding the relevant form of data required. Supports such provisions, in context of rule having regard to NGERs. p.2.	Comments noted. The Rule as Made maintains the provision for AEMO to have regard to methodology for determining emission factors under the Australian Government's National

Stakeholder	Comments/Issue	AEMC response
		Greenhouse and Energy Reporting Framework.
Marubeni Power Development Australian Pty Ltd	Considers that if emission factors of generators are to be published by AEMO, the benefits of cogeneration must be taken into account i.e. taking into account the use of the appropriate national technical guidelines. Considers that any emissions reported from cogeneration facilities continue to recognise the benefits that cogeneration facilities provide to the market - i.e. offsetting alternate and inefficient fuel combustion processes within host's facilities. p.1-2.	The Commission notes the concern raised by Marubeni. The Rule as Made provides that AEMO, must in consultation with stakeholders determine the form of emission factors that will be used and the methodology of estimating emission factors where these are not already publically available. AEMO in developing the methodology for use of emission factors, is to have regard to the existing national methodology for estimating emission factors, including any appropriate guidelines under NGERs.
NGF	Supports the need for AEMO to have some flexibility regarding the relevant form of data required, which is guided by consistency with the national accounts and minimising the administrative burden on generators. Considers this flexibility will need to be tempered in practice by the objectives of a stable publication, and an index that reasonably represents actual emissions. p.1.	Comments noted.
Origin Energy	Supports the requirement for AEMO to have regard to the guidelines used to develop emissions intensity factors under the Australian Government's National Greenhouse and Energy Reporting System framework. p.1.	Refer to comment above.
<i>Methodology</i>		
AGL	Considered that it is essential that market participants contribute to developing functional and robust procedures. Consider that once the NEM CO ₂ -e Intensity Index is established, the Index will need to be maintained at an appropriate frequency, and be a reference point that has a strong degree of consistency in terms of its procedures for calculation. p.1.	The Rule as Made includes a requirement for AEMO to consult with stakeholders in accordance with stakeholder consultation procedures under the Rules when developing procedure that underpin the for the NEM CO ₂ -e Intensity Index.

Stakeholder	Comments/Issue	AEMC response
NGF	Supports that the draft Rule provides that the procedures for the NEM CO ₂ -e Intensity Index are to be determined through a stakeholder consultation process, which includes registered participants. Considers this is critical in maintaining reliability of the data inputs and ensuring an appropriate level of publication frequency. p.1.	Comments noted.
Origin	Considers the draft Rule strikes an appropriate balance between setting the high level principles and index objectives in the Rules while leaving the methodology to subordinate guidelines, including to promoting the use of accurate and quality data sources and stakeholder engagement. p.1.	Comments noted
<i>Publication and review</i>		
Alinta Energy	Considers delay to introduction of the scheme to price carbon removes time pressure to implement the NEM CO ₂ -e Intensity Index within the next two years. Noted that there remains some risk to introducing the Index in advance of legislation operation. p.1.	Noted. The Commission notes that the intent of the provision of a CO ₂ -e Intensity Index for the NEM is to provide information to the market and assist market participants to settle forward contracts whilst there is ongoing uncertainty regarding proposals that seek to place a price on carbon.
Alinta Energy	Considers that a sunset clause is included in the Rules to reflect the transitional arrangement of the NEM CO ₂ -e Intensity Index for contract purposes. p.2.	Noted. The Commission has not determined to include in the Rule as Made a sunset clause, given the ongoing uncertainty regarding the proposed commencement and implementation of a proposed scheme which seeks to place a price on carbon. In addition, in accordance with standard rule making processes, AEMO or any other persons are able to submit a Rule change request if it is considered the use of the CO ₂ -e Intensity Index is not required in the future.

Stakeholder	Comments/Issue	AEMC response
Alinta Energy	Considers that AEMO should be required to publish a disclaimer with the NEM CO ₂ -e Intensity Index which sets out its purpose as well as acknowledging that the data that this index will have will not have the same level of accuracy and precision as provided by generators under NGERs. p.2.	Noted. The Rule as Made provides AEMO with flexibility to include such elements under the requirements for the developing procedures for the CO ₂ -e Intensity Index.
Origin Energy	Considers that whilst an index should be published as soon as possible, the proposed twelve months should ensure AEMO publishes the initial Intensity Index prior to the commencement of a CPRS (or similar scheme) given the delay to start to the proposed Carbon Pollution Reduction Scheme. p.1.	Noted. The Rule as Made provides that the first carbon dioxide equivalent intensity index procedures must be published by no later than 22 July 2011 (twelve months from commencement of the Rule) and the first index must be published as soon as practicable after the publication of those procedures.