



Australian Energy Market Commission

## CONSULTATION PAPER

# National Electricity Amendment (Publication of a Carbon Dioxide Equivalent Intensity Index for the National Electricity Market) Rule 2009

### Rule Proponent

Australian Energy Market Operator

23 December 2009

RULE  
CHANGE

This Consultation Paper was prepared by the staff of the Australian Energy Market Commission to facilitate public consultation on the Rule change proposal and does not necessarily represent the views of the Commission or any individual Commissioner of the Australian Energy Market Commission.

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## **Citation**

AEMC 2009, *National Electricity Amendment (Publication of a Carbon Dioxide Equivalent Intensity Index for the National Electricity Market)* Consultation Paper, 23 December 2009, Sydney

## **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 policy advice covering the National Electricity Market and elements of the natural gas markets. It is an independent, national body. Our key responsibilities are to consider Rule change proposals, conduct energy market reviews and provide policy advice to the MCE as requested, or on AEMC initiative.

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## Abbreviations

AEMC	see Commission
AEMO	Australian Energy Market Operator
AFMA	Australian Financial Markets Association
Commission	Australian Energy Market Commission
CPRS	Carbon Pollution Reduction Scheme
GII	Greenhouse Intensity Index
MWh	megawatt hour
NEL	National Electricity Law
NGF	National Generators Forum
NEM	National Electricity Market
CO <sub>2</sub> -e	carbon dioxide equivalent
NEMMCO	National Electricity Market Management Company Limited (now AEMO)
NEO	National Electricity Objective
Rules	National Electricity Rules

# 1. Introduction

On 13 November 2009, the Australian Energy Market Operator (AEMO) submitted a Rule change proposal to the Australian Energy Market Commission (Commission).<sup>1</sup> The Rule change proposal is seeking to include a new provision under rule 3.13 (Market Information) of the National Electricity Rules (Rules) that would require AEMO to calculate and publish a Carbon Dioxide Equivalent (CO<sub>2</sub>-e) Intensity Index for the National Electricity Market (NEM).

The NEM CO<sub>2</sub>-e Intensity Index as proposed by AEMO would represent an approximation of the average greenhouse gas emissions from market generating units and scheduled generation units<sup>2</sup> in the NEM (i.e. the amount of carbon dioxide equivalent greenhouse gas emitted per megawatt hour of electricity sent out by generators operating in the NEM).

This Rule change proposal is likely to be of interest to:

- Market Participants;
- The National Generators Forum (NGF);
- Australian Financial Markets Association (AFMA) and its members;
- Australian Government Department of Climate Change, and
- Other parties that may have an interest in, or the use of, a NEM CO<sub>2</sub>-e Intensity Index.

This Consultation Paper was prepared by staff of the AEMC to facilitate public consultation on the Rule change proposal. It does not represent the views of the Commission or any individual Commissioner, and is intended to be read in conjunction with the Rule change proposal documentation.

In relation to the Rule change request, this Consultation Paper:

- sets out background information relevant to the Rule change proposal;
- summarises, at a high level, AEMO's proposed change to the Rules; and
- sets out some questions that stakeholders are encouraged to consider when preparing their submissions.

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<sup>1</sup> The AEMO Rule change proposal can be accessed from the Commission's website at [www.aemc.gov.au](http://www.aemc.gov.au)

<sup>2</sup> The definition of *market generating units/scheduled generation units* is in accordance with Chapter 10 of the Rules.

## 2. Background

The Rule change request arises in response to AEMO terminating the informal publication of an equivalent CO<sub>2</sub>-e Intensity Index in April 2009. AEMO, since April, have been working with relevant industry bodies to identify and formalise an arrangement for a revised Intensity Index.

### *Informal publication of a NEM CO<sub>2</sub>-e Intensity Index*

Prior to April 2009, AEMO (formally NEMMCO) had published on its website a weekly NEM Greenhouse Intensity Index (GII)<sup>3</sup> since January 2000.<sup>4</sup> This GII was provided on an informal basis<sup>5</sup> and acted as an information source in light of the emerging policy developments on climate change. The GII was a single number and provided information on the amount of carbon dioxide equivalent greenhouse gas emitted per megawatt hour of electricity sent out by generators operating in the NEM during the nominated week (tonnes CO<sub>2</sub>-e/MWh).

AEMO notes that the GII was calculated using the following inputs, the:

- volume of gross energy sent out (MWh) sent out from each generating unit in the NEM; and
- specific emission factors for each generator in the NEM (i.e. the ratio of greenhouse gas emissions per unit of electricity sent out by each generator).

Energy sent out data was sourced by AEMO from its revenue quality metering system where possible. Emission factors used were those provided to AEMO in January 2000 by the relevant Commonwealth government department at the time.

### *Termination of the AEMO NEM GII*

AEMO terminated the publication of this GII in April 2009. This was primarily due to concern over its use in commercial trading applications, specifically the forward electricity contract market.

The ongoing development of policy initiatives on climate change policy, such as the Australian Government's proposed Carbon Pollution Reduction Scheme (CPRS), has placed greater reliance on the importance of information about the carbon intensity of generation in the NEM and therefore on the GII published by AEMO. The CPRS is likely to have a significant impact on wholesale electricity spot prices. This impact will depend on the future market price of carbon under the CPRS.

Given the uncertainty the proposed CPRS is likely to place on wholesale electricity spot prices, NEM participants and the financial markets have been looking for a

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<sup>3</sup> A GII is an alternate naming convention to a CO<sub>2</sub>-e Intensity Index.

<sup>4</sup> The request for a NEM GII in January 2000 was from the Commonwealth Government Department of Industry, Science and Resources, responsible for energy policy matters at the time.

<sup>5</sup> To date, there has been no formal requirements such as the NER placing obligations on AEMO to report the Intensity Index.

mechanism that provides parties seeking to trade in forward contracts in electricity with the ability to agree on the impact of the future price of carbon in negotiations.

Forward contracting supports the efficient operation of the NEM as it provides a tool for electricity market participants to manage the financial risks associated with the significant degree of spot price volatility in the NEM. As discussed by AEMO, contracts predominately are entered into between generators and retailers as they face opposing spot market risks, and provide the buyer and seller with a fixed price for a specified quantity, for a period of time in the future. Spot market trading and settlement occurs separately to this financial activity, however, it is recognised that these are influenced by perceptions of future price outcomes.

In 2008, the AFMA developed an addendum its existing over-the-counter<sup>6</sup> contract documentation (*i.e. December 2008 and 2009 Australian Carbon Benchmark Addendum*). This effectively provides a means for a relevant carbon price, should one be present, to be taken into account in the settlement of a contract, when the settlement takes place<sup>7</sup>. AFMA advised AEMO that the addendum has a provision which nominates the previous NEM GII as a reference point to determine the mark up on a contract due to carbon, upon settlement.

On receiving advice that the data was being used to underpin the above commercial trading negotiations AEMO ceased publishing the NEM GII. AEMO considered that the data was not robust enough in nature to support such a use - the emission factors of individual generators were outdated and those generators which did not have an established intensity factor were not included in the GII. The lack of a formal requirement and consistent framework for calculation and publication of the Index also presented risks to potential users as there was no certainty on the form and continuation of the GII.

*Issues that the Rule change proposal is seeking to address*

Currently under the Rules there is no governance arrangement which requires AEMO to produce, maintain and publish a potential NEM CO<sub>2</sub>-e Intensity Index.

AEMO considers that for it to produce a future NEM CO<sub>2</sub>-e Intensity Index, a formal governance framework is required in the Rules. AEMO considers it necessary to include a framework in the Rules to:

- remove uncertainty as to whether AEMO is the appropriate provider of the NEM CO<sub>2</sub>-e Intensity Index given its proposed use;
- provide clarity and appropriate protections with respect to AEMO's role;
- reduce uncertainty faced by commercial parties, particularly when entering into financial contracts, as to whether a NEM CO<sub>2</sub>-e Intensity Index will be available in the future;

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<sup>6</sup> The over-the-counter contract (OTC) market is part of the financial market. Derivate products that are commonly traded in the OTC market to hedge exposure to electricity spot price are forward contracts.

<sup>7</sup> AEMO Rule change proposal, pg 6

- formally establish the form of the NEM CO<sub>2</sub>-e Intensity Index for use in commercial transactions, and specify the process to be followed if the NEM CO<sub>2</sub>-e Intensity Index is to be changed;
- clarify how suitable inputs for the calculation of the NEM CO<sub>2</sub>-e Intensity Index should be identified; and
- clarify whether certain inputs to the NEM CO<sub>2</sub>-e Intensity Index are to be treated as confidential.

### 3. AEMO's proposed Rule change proposal

The Rule change proposal submitted by AEMO seeks to include a new clause under rule 3.13, in Chapter 3 of the Rules, that would require AEMO to establish, maintain, update and publish a NEM CO<sub>2</sub>-e Intensity Index.

Broadly, the main elements of the proposed Rule include and require AEMO to:

- calculate and publish a NEM CO<sub>2</sub>-e Intensity Index that would represent an approximation of the volume of weighted average of the greenhouse gas emissions from all market generating units and scheduled generating units for a specified time period;
- develop in consultation with stakeholders<sup>8</sup>, publically available procedures that would set out the mechanism for how the CO<sub>2</sub>-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 CO<sub>2</sub>-e Intensity Index or supplementary greenhouse intensity indicators, the emission factors used in respect of each generating unit and the source of each emission factor; and
- include the timing obligations regarding the NEM CO<sub>2</sub>-e Intensity Index in the spot market operations timetable<sup>9</sup>.

AEMO has indicated in its Rule change proposal that it does not propose to have any explicit powers which would require generation businesses to provide emission factors for their respective generating units. AEMO does however, indicate that it intends to source the relevant emission factors of generating units from publicly available information.<sup>10</sup> AEMO notes that if an explicit emission factor in respect of

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<sup>8</sup> AEMO proposes to undertake stakeholder consultation in accordance with the Rules consultation procedures - rule 8.9 of the Rules.

<sup>9</sup> Clause 3.4.3 of the Rules.

<sup>10</sup> A likely source of data that has been identified by AEMO in conjunction with industry stakeholders is the report prepared by ACIL Tasman for AEMO "Fuel resource, new entry and generation costs in the NEM". the latest version is published on the AEMO website at: <http://www.aemo.com.au/planning/419-0035.pdf>

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 to be developed.

Transitional arrangements have been proposed to develop the NEM CO<sub>2</sub>-e Intensity Index and would last approximately twelve months. This arrangement would allow AEMO to undertake stakeholder consultation and information technology system development /deployment. AEMO propose that the exact date for publication of the Index would be determined through the Rule change process.

#### **4. Consultation questions**

The questions below are to provide guidance and facilitate consultation on this Rule change proposal and for guidance. Stakeholders are requested to consider these questions and the information as set out in AEMO's Rule change proposal when preparing their submissions. Stakeholders are also encouraged to comment on these questions and any other aspects of the Rule change proposal.

The questions are:

1. Do you consider that the Rules should provide for the calculation and publication of a NEM CO<sub>2</sub>-e Intensity Index? Please explain your view, including the likely benefits/impacts on the NEM and its participants.
2. Do you consider that AEMO is the most appropriate body to provide a NEM CO<sub>2</sub>-e Intensity Index for the purposes outlined in the Rule change proposal? Please explain your view, including why you may consider AEMO is/is not the most appropriate body to provide such information.
3. Will the proposed Rule change contribute, or be likely to contribute, to the achievement of the NEO? Please explain your view.
4. Do you agree that information regarding the emission factors of generators should be sourced from publically available information? Please explain your view, including consideration of benefits/risks that might flow from using data from publically available sources.
5. Do you consider that there are better alternative options available for sourcing emission factors of scheduled generating unit and market generation units?
6. Are there any other matters that should be considered and/or included in the detailed procedures as proposed by AEMO, if it is to calculate and publish the NEM CO<sub>2</sub>-e Intensity Index?
7. How frequently would you consider a CO<sub>2</sub>-e Intensity Index should be published by AEMO, e.g. weekly/daily? Please explain your view.
8. Please provide any other relevant information for the Commission's consideration.

## 5. Lodging a submission

The Commission has published a notice under section 95 of the NEL for this Rule change proposal inviting written submissions. Submissions are to be lodged online or by mail by **5pm (Sydney time), 11 February 2010** in accordance with the following requirements.

Where practicable, submissions should be prepared in accordance with the Commission's *Guidelines for making written submissions on Rule change proposals*.<sup>11</sup> The Commission publishes all submissions on its website, subject to a claim of confidentiality.

All enquiries in relation to this Rule change proposal should be directed to Ms Lisa Nardi on 02 8296 7800 or at [lisa.nardi@aemc.gov.au](mailto:lisa.nardi@aemc.gov.au).

### *Lodging a submission electronically*

Submissions may be lodged online via [www.aemc.gov.au](http://www.aemc.gov.au). The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Upon receipt of the electronic version of the submission, the Commission will issue a confirmation email. If this confirmation email is not received within three business days, it is the submitter's responsibility to ensure successful delivery of the submission has occurred.

### *Lodging a submission by mail*

The submission must be on letterhead (if an organisation), signed and dated. The submission should be sent by mail to:

Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

or by fax: (02) 8296 7899

The envelope must be clearly marked with the project reference code: "ERC 0098".

Except in circumstances where the submission has also been submitted electronically, upon receipt of the hardcopy submission the Commission will issue a confirmation letter. If this confirmation letter is not received within three business days, it is the submitter's responsibility to ensure successful delivery of the submission has occurred.

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<sup>11</sup> The AEMC's *Guidelines for making a submissions on Rule change proposals – Electricity* are available from the AEMC's website at <http://www.aemc.gov.au/Electricity/Rule-changes/Rule-makingprocess.html>