



Draft National Electricity Amendment (Fully Co-optimised and Alternative Constraint Formulations) Rule 2009

under the National Electricity Law as applied by:

- (a) the National Electricity (South Australia) Act 1996;
- (b) the Electricity (National Scheme) Act 1997 of the Australian Capital Territory;
- (c) the National Electricity (New South Wales) Act 1997 of New South Wales;
- (d) the Electricity - National Scheme (Queensland) Act 1997 of Queensland;
- (e) the Electricity - National Scheme (Tasmania) Act 1999 of Tasmania;
- (f) the National Electricity (Victoria) Act 2005 of Victoria; and
- (g) the Australian Energy Market Act 2004 of the Commonwealth.

The Australian Energy Market Commission makes the following Rule under the National Electricity Law.

A handwritten signature in black ink, appearing to read 'John Tamblyn', is written over a faint, light-colored circular watermark or background element.

John Tamblyn

Chairman

Australian Energy Market Commission

Draft National Electricity Amendment (Fully Co-optimised and Alternative Constraint Formulations) Rule 2009

1. Title of Rule

This Rule is the *Draft National Electricity Amendment (Fully Co-optimised and Alternative Constraint Formulations) Rule 2009*.

2. Commencement

This Rule commences operation on [insert date].

3. Amendment of National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 1.

Schedule 1 Amendment of National Electricity Rules

(Clause 3)

[1] Clause 3.7.2 Medium term PASA

Omit clause 3.7.2(c)(3) and substitute:

- (3) forecast *network constraints* known to *NEMMCO* at the time;

[2] Clause 3.7.3 Short term PASA

Omit clause 3.7.3(d)(3) and substitute:

- (3) anticipated *network constraints* known to *NEMMCO* at the time; and

[3] Clause 3.8.1 Central Dispatch

Omit clause 3.8.1(b) and substitute:

- (b) The *central dispatch* process should aim to maximise the value of *spot market* trading, that is to maximise the value of *dispatched load* based on *dispatch bids* less the combined cost of *dispatched generation* based on *generation dispatch offers*, *dispatched network services* based on *network dispatch offers*, and *dispatched market ancillary services* based on *market ancillary service offers* subject to:

- (1) *dispatch offers*, *dispatch bids* and *market ancillary service offers*;
- (2) *constraints*:
 - (i) due to availability and *commitment*; or
 - (ii) in the case of *semi-scheduled generating units*, identified by the *unconstrained intermittent generation forecast*;
- (3) *non-scheduled load* requirements in each *region*;
- (4) *power system security* requirements determined as described in Chapter 4 and the *power system security and reliability standards*;
- (5) *network constraints*;
- (6) *intra-regional losses* and *inter-regional losses*;
- (7) *constraints* consistent with *registered bid and offer data*;

- (8) current levels of *dispatched generation, load and market network services*;
- (9) *constraints* imposed by *ancillary services* requirements;
- (10) arrangements designed to ensure pro-rata loading of tied *registered bid and offer data*;
- (11) ensuring that as far as reasonably practical, in relation to a *NEMMCO intervention event*:
 - (A) the number of *Affected Participants*; and
 - (B) the effect on *interconnector flows*,
is minimised; and
- (12) the management of negative *settlements residues*, in accordance with clause 3.8.10 and any guidelines issued by *NEMMCO* under clause 3.8.10(c).

[4] Clause 3.8.10 Network Constraints

Omit clauses 3.8.10(b) and 3.8.10(c) and substitute:

- (b) Subject to paragraph (e), *NEMMCO* must determine and represent *network constraints* in *dispatch* which may result from limitations on *intra-regional* or *inter-regional* power flows and, in doing so, must use a *fully co-optimised network constraint formulation*.
- (c) *NEMMCO* must, in accordance with the *Rules consultation procedures*, develop and *publish* by [DATE A], and, where necessary, amend *network constraint* formulation guidelines, to address, amongst other things, the following matters:
 - (1) the circumstances in which *NEMMCO* will use *alternative network constraint formulations* in *dispatch*;
 - (2) the process by which *NEMMCO* will identify or be advised of a requirement to create or modify a *network constraint* equation, including in respect of:
 - (i) the methodology to be used by *NEMMCO* in determining *network constraint* equation terms and co-efficients; and
 - (ii) the means by which *NEMMCO* will obtain information from, and disseminate information to, *Scheduled Generators, Semi-Scheduled Generators* and *Market Participants*;

- (3) the methodology to be used by *NEMMCO* in selecting the form of a *network constraint* equation, including in respect of the location of terms on each side of the equation;
- (4) the process to be used by *NEMMCO* for applying, invoking and revoking *network constraint* equations in respect of different types of *network constraints*, including in respect of:
 - (i) the circumstances in which *NEMMCO* will use *alternative network constraint formulations* and *fully co-optimised network constraint formulations*; and
 - (ii) the dissemination of information to *Scheduled Generators*, *Semi-Scheduled Generators* and *Market Participants* in respect of this process; and
- (5) *NEMMCO's* policy in respect of the management of negative *settlements residues*, by intervening in the *central dispatch* process under clause 3.8.1 through the use of *fully co-optimised network constraint formulations*, including in respect of the process to be undertaken by *NEMMCO* to manage negative *settlements residues*.

Note: DATE A is intended to be 9 months after this Rule commences operation.

- (d) *NEMMCO* must at all times comply with the *network constraint* formulation guidelines issued in accordance with paragraph (c).
- (e) Where, in *NEMMCO's* reasonable opinion, a specific *network constraint* is such that use of a *fully co-optimised network constraint formulation* is not appropriate, *NEMMCO* may apply an *alternative network constraint formulation* for the expected duration of that *network constraint*, if *NEMMCO*:
 - (1) has previously identified, in guidelines issued in accordance with paragraph (c), that it may use an *alternative network constraint formulation* in respect of that type of *network constraint*; and
 - (2) reasonably considers that it can apply an *alternative network constraint formulation* without prejudicing its obligation to operate a *central dispatch* process to *dispatch scheduled generating units, semi-scheduled generating units, scheduled loads, scheduled network services* and *market ancillary services* in order to balance *power system supply* and demand, consistent with using its reasonable endeavours to maintain *power system security* in accordance with Chapter 4 and to maximise the value of *spot market* trading on the basis of *dispatch offers* and *dispatch bids*, in accordance with clause 3.8.1(a) and (b).

- (f) *NEMMCO* must represent *network constraints* as inputs to the *dispatch* process in a form that can be reviewed after the *trading interval* in which they occurred.
- (g) Within 3 years from the date the National Electricity Amendment (Fully Co-optimised and Alternative Constraint Formulations) Rule 2009 commences operation, the *AEMC* must commence a review, under section 45 of the *National Electricity Law*, in respect of the efficiency with which *NEMMCO* is managing circumstances in which the *settlements residue* arising in respect of a *trading interval* is a negative amount.

[5] Clause 3.9.7 Pricing for constrained-on scheduled generating units

Omit clause 3.9.7(a) and substitute:

- (a) In the event that a *network constraint* causes a *scheduled generating unit* to be *constrained-on* in any *dispatch interval*, that *scheduled generating unit* must comply with *dispatch instructions* from *NEMMCO* in accordance with its availability as specified in its *dispatch offer* but may not be taken into account in the determination of the *dispatch price* in that *dispatch interval*.

[6] Clause 3.13.8 Public Information

Omit clause 3.13.8(a)(5) and substitute:

- (5) *network constraints* by *trading interval*.

[7] Chapter 10 New definitions

In Chapter 10, insert the following new definitions in alphabetical order:

alternative network constraint formulation

A network constraint equation formulation used by *NEMMCO* other than a *fully co-optimised network constraint formulation*.

fully co-optimised network constraint formulation

A network constraint equation formulation that allows *NEMMCO*, through direct physical representation, to control all the variables within the equation that can be determined through the *central dispatch* process.

[8] Chapter 10 Deleted definitions

Omit the following definitions:

inter-regional network constraint

A constraint on the transmission and/or distribution networks between regions as specified in clause 3.6.4(a).

intra-regional network constraint

A constraint on part of the transmission and distribution networks within a region as specified in clause 3.6.4(b).
