



Australian Energy Market Commission

DRAFT RULE DETERMINATION

National Electricity Amendment (Changes to normal voltage) Rule 2012

Rule Proponent(s)

International Power

29 November 2012

**RULE
CHANGE**

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About the AEMC

The Council of Australian Governments (COAG), through its then Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. In June 2011, COAG established the Standing Council on Energy and Resources (SCER) to replace the MCE. The AEMC has two principal functions. We make and amend the national electricity, gas and energy retail rules, and we conduct independent reviews of the energy markets for the SCER.

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Summary of draft rule determination

On 10 April 2012, International Power submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission) to improve transparency around requests to change normal voltage. International Power's proposed rule was intended to ensure that Network Service Providers (NSPs) follow the process set out in rule 5.3 of the National Electricity Rules (NER) for establishing or modifying a connection when dealing with a request to change the normal voltage level.

The Commission broadly agrees with the intent behind International Power's proposed rule. However, the Commission has determined to make a more preferable draft rule to better address the concerns identified by International Power. The draft rule inserts a new clause into chapter five of the NER which:

- requires the Australian Energy Market Operator (AEMO) to notify registered participants that a request to change the normal voltage level at a connection point has been received. This provides an opportunity for all registered participants to be informed of a proposed change and allows them to raise any concerns with AEMO before any change is approved;
- requires AEMO to notify registered participants of whether the normal voltage level will be changed and the nature of any such change. This is likely to improve market transparency and allow all potentially affected parties to make informed investment decisions. It is also likely to improve efficiency in the investment of generation services and the operation of generation and network services; and
- provides a proportionate solution to the problem identified by International Power, which should minimise any potential time delays for new connections and compliance costs that may arise from the draft rule. The draft rule is also likely to involve minimal implementation costs for AEMO, as it is consistent with AEMO's current market notification role.

The Commission considers that the draft rule will, or is likely to, better contribute to the achievement of the National Electricity Objective (NEO) than the rule proposed by International Power.

The Commission's reasons

International Power submitted its 'Changes to normal voltage' rule change proposal as it was concerned that under the current NER it appears that the normal voltage level can be varied through an agreement with AEMO and the relevant NSP, without a requirement to comply with the consultation processes set out in rule 5.3 of the NER.

International Power's proposed rule sought to remedy this concern by providing a reference to rule 5.3 of the NER in the definition of 'normal voltage' in the NER glossary. International Power considers that this would ensure that the processes in

rule 5.3 of the NER would be followed if a request to change the normal voltage level was made.

The Commission considers that a change to the NER should be made to improve transparency in the way changes to normal voltage are managed, as changes to normal voltage, while rare, have the potential to lead to significant physical and commercial risks for registered participants.

However, International Power's proposed rule would create a process where only connected or connecting parties would have the opportunity to be informed of and raise concerns about a proposed change to normal voltage. This is because rule 5.3 of the NER focuses primarily on the individual relationship between a connected party or connection applicant and a local NSP. In contrast, the draft rule provides an opportunity for all registered participants to be informed of a request to change normal voltage and raise any issues with AEMO before any changes are made.

The draft rule would also require AEMO to notify registered participants of the outcome of requests to change normal voltage. This would allow registered participants to factor this information into their investment decisions, leading to increased efficiency in investment in generation services and the operation of generation and network services. Alternatively, under International Power's proposed rule only connected or connecting parties would be informed of the outcome of a request to change normal voltage.

Finally, the Commission considers that the draft rule provides a more efficient and effective avenue for NSPs, registered participants and AEMO to deal with a proposed change to normal voltage than the proposed rule. International Power's proposed rule of requiring NSPs to follow the requirements in rule 5.3 of the NER could be time consuming and complex, as rule 5.3 of the NER is extensive and not tailored to addressing requests to change normal voltage.

The AEMC welcomes submissions on this draft determination, including the draft rule, by 18 January 2013.

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1 International Power's rule change request

1.1 The rule change request

On 10 April 2012, International Power submitted a rule change request to the Australian Energy Market Commission (AEMC) to improve transparency around requests to change the normal voltage level. The aim of the rule change request is to ensure that network service providers (NSPs) consult with potentially affected parties prior to changing the normal voltage level at a connection point.

Normal voltage is the voltage level at which a transmission or distribution line normally operates. Connected parties must ensure their equipment is able to meet the normal voltage level specified at their connection point.¹

1.2 Rationale for rule change request

International Power is concerned that the definition of 'normal voltage' in the glossary of the National Electricity Rules (NER) allows the normal voltage level to be varied through an agreement with the Australian Energy Market Operator (AEMO) and a NSP, without a requirement to comply with rule 5.3 of the NER.

Rule 5.3 of the NER sets out the processes and procedures to be followed by connection applicants and NSPs in establishing a new connection or modifying an existing connection.

The rule change request seeks to ensure that a NSP would be required to comply with the existing provisions within rule 5.3 of the NER if there is a proposed change to the normal voltage level at a connection point.

1.3 Solution proposed in the rule change request

International Power has proposed to require NSPs to comply with the provisions within rule 5.3 of the NER by providing a reference to this rule in the definition of 'normal voltage' in the NER glossary. The current glossary sets out the following definition for normal voltage:

“In respect of a connection point, its nominal voltage or such other voltage up to 10% higher or lower than nominal voltage, as approved by AEMO, for that connection point at the request of the Network Service Provider who provides connection to the power system.”

¹ A worked example of normal voltage is set out in section 2.1 of the AEMC consultation paper for this rule change request.

International Power seeks to modify the above definition as follows:

“In respect of a connection point, its nominal voltage or such other voltage up to 10% higher or lower than nominal voltage, as approved by AEMO, for that connection point at the request of the Network Service Provider who provides connection to the power system, [in accordance with clause 5.3.](#)”

International Power has stated that the proposed rule change would:

- remove the potential for unexpected changes to normal voltage impacting negatively on other participants;
- reduce the chances of errors in connection agreements due to unexpected changes to the defined normal voltage level; and
- reduce the chance of current access standards becoming incorrect or invalid by unexpected changes to normal voltage.²

1.4 Relevant background

This rule change request was submitted following a rule change request from Hydro Tasmania that was submitted to the Commission on 5 May 2011. The purpose of Hydro Tasmania’s rule change request was to change the definition of the limit allowed for temporary over voltage (TOV) at a connection point. The TOV limit caps the level and timing for voltage surges, which can for up to 0.9 seconds. The limit is set at 30 per cent above the normal voltage level.

The Commission decided not to make a rule in relation to this rule change request as it was not satisfied that the proposed rule was likely to contribute to the achievement of the National Electricity Objective (NEO).³

During consultation on the Commission's draft determination, International Power raised a concern about the potential lack of transparency in the current NER in relation to making changes to the normal voltage level, and indicated it would submit a rule change request to address this issue.⁴

International Power's rule change request also relates to the 'Connecting embedded generators' rule change request which was submitted by Climate Works, Seed Advisory and the Property Council. A draft rule determination on this rule change request is currently being prepared by the Commission.

² International Power, Rule change proposal - changes to normal voltage final, 10 April 2012, p.4

³ Australian Energy Market Commission, Definition of Temporary Over-Voltage Limits Rule Proposal - Final Determination, 19 January 2012.

⁴ International Power, Submission to AEMC Draft determination on 'Definition of Temporary Over Voltage', December 2011.

Climate Works, Seed Advisory and the Property Council consider that the current provisions under the connection process of chapter five of the NER are not clear and do not provide sufficient certainty to connection applicants.

This interacts with the rule change request submitted by International Power as both rule change requests seek modifications to the connection process under chapter five of the NER.

Further detail on the above two rule changes can be found on the AEMC website.

1.5 Commencement of rule making process

On 23 August 2012, 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 prepared by AEMC staff identifying specific issues and questions for comment was also published with the rule change request. Submissions closed on 20 September 2012.

The Commission received eight submissions on the rule change request as part of the first round of consultation. They are available on the AEMC website.⁵ A summary of the issues raised in submissions and the Commission's response to each issue is contained in Appendix A.

1.6 Consultation on draft rule determination

In accordance with the notice published under section 99 of the NEL, the Commission invites submissions on this draft rule determination by 18 January 2013.

In accordance with section 101(1a) of the NEL, any person or body may request that the Commission hold a hearing in relation to the draft rule determination. Any request for a hearing must be made in writing and must be received by the Commission no later than 6 December 2012.

Submissions and requests for a hearing should quote project number "ERC0148" and may be lodged online at www.aemc.gov.au or by mail to:

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

⁵ www.aemc.gov.au

2 Draft rule determination

2.1 Commission's draft determination

In accordance with section 99 of the NEL the Commission makes this draft rule determination in relation to the 'Changes to normal voltage' rule change proposal submitted by International Power.

The Commission has determined to make a more preferable draft rule as it considers that this draft rule will, or is likely to, better contribute to the NEO than the rule proposed by International Power.⁶ The Commission's reasons for making the draft rule determination are set out in section 3.1.

A draft of the more preferable rule is attached to and published with this draft rule determination and 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 is no relevant Standing Council on Energy and Resources (SCER) Statement of Policy Principles;⁷
- submissions received during the first round of consultation;
- the Commission's analysis as to the ways in which the proposed rule will or is likely to contribute to the NEO; and
- information received from AEMO regarding historical changes to normal voltage.

2.3 Commission's power to make the rule

The Commission is satisfied that the draft rule falls within the subject matter about which the Commission may make rules. The draft rule falls within section 34(1)(a)(ii) and (iii) of the NEL which relates to:

⁶ Under section 91A of the NEL, the AEMC may make a rule that is different (including materially different) from a market initiated proposed rule (a more preferable rule) if the AEMC is satisfied that having regard to the issue or issues that were raised by the market initiated proposed rule (to which the more preferable rule relates), the more preferable rule will or is likely to better contribute to the achievement of the NEO.

⁷ Under section 33 of the NEL the AEMC must have regard to any relevant SCER statement of policy principles in making a rule.

“(ii) the operation of the national electricity system for the purposes of the safety, security and reliability of that system; and

(iii) the activities of persons (including Registered participants) participating in the national electricity market or involved in the operation of the national electricity system. ”

Further, the draft rule falls within the matters set out in schedule 1, item 11 of the NEL because it pertains to the operation of generating, transmission and distribution systems.

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.

The NEO is set out in section 7 of the NEL as follows:

“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.”

The Commission considers that the relevant aspects of the NEO for this rule change request are efficient investment in and the efficient operation of generation and network services.⁸

The Commission considers that the draft rule is likely to promote efficient investment in, and operation of, generation services because it would allow all registered participants to be notified of a request to change the normal voltage level. It does this by creating an obligation on AEMO to notify registered participants that it has received a request from a NSP about changing normal voltage. This would provide registered participants with an opportunity to raise any concerns with AEMO before any changes to normal voltage are made.

Allowing registered participants to raise concerns prior to any changes being made to the normal voltage level could also mean that any potential risks to system security and reliability can be identified and considered by AEMO before a proposed change is approved.

⁸ 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 SCER statement of policy principles.

The obligation on AEMO to publish a further notice to registered participants advising whether the normal voltage at a connection point will change would allow registered participants to factor the outcome of the request into their decisions, leading to greater efficiency in investment and the operation of generation and network services. This notification of any changes in normal voltage could also reduce the potential for unexpected costs for connected parties and limit the potential of network and generation capacity being constrained.

Overall, the draft rule promotes market transparency which is likely to improve the overall efficiency in the operation of generation and network services.

The Commission considers that the draft rule is likely to limit compliance costs for NSPs and other registered participants and also limit potential time delays to the connections process. This is because it does not impose prescriptive requirements for NSPs and AEMO to follow in responding to a request to change normal voltage. This provides AEMO with the discretion and flexibility to assess requests.

Further, the Commission considers that the draft rule is proportionate to the problem identified by International Power. The limited nature of the draft rule reflects that changes to normal voltage are rare, which means that any related risks faced by registered participants are likely to be infrequent.

Finally, the obligation on AEMO to notify the market is consistent with AEMO's role in providing market notifications to registered participants, which should limit the implementation costs of the draft rule.

Under section 91(8) of the NEL, the Commission may only make a rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed rule is compatible with the proper performance of the declared network functions of AEMO. The draft rule does not impact AEMO's performance of its declared network functions, and consequently this requirement is not applicable.

2.5 More preferable rule

Under section 91A of the NEL, the AEMC may make a rule that is different (including materially different) from a market initiated proposed rule if the AEMC is satisfied that, having regard to the issues or issue that were raised by the market initiated proposed rule, the more preferable rule will or is likely to better contribute to the achievement of the NEO.

The draft rule provides an opportunity for all registered participants to be notified of a request to change normal voltage and raise any issues with AEMO before any change is made. Further, notifying the broader market of a request means that AEMO is more likely to be made aware of any wider security or reliability issues that could affect the operation of the national electricity system as a result of a proposed change to normal voltage.

In comparison, International Power's proposed rule would mean that only connected or connecting parties would have an opportunity to be notified and raise concerns about a proposed change. This is because under International Power's proposed rule, NSPs would be required to follow the requirements under rule 5.3 of the NER after receiving a request and this rule focuses primarily on the individual relationship between a connected party or connection applicant and a local NSP.

Similarly, International Power's proposed rule would also mean that only connected or connecting parties would be informed of the outcome of a proposed change to normal voltage. In contrast, the draft rule would ensure that all registered participants are notified of the outcome of a request. This means potentially affected registered participants would be able to factor this information into their investment decisions, leading to increased efficiency in investment in generation services and in the operation of generation and network services.

Finally, the Commission considers that the draft rule provides a more efficient and effective avenue for NSPs, registered participants and AEMO to deal with a proposed change to normal voltage than the proposed rule. The Commission considers that the draft rule will limit compliance costs and time delays for new connections as it does not impose prescriptive requirements on AEMO or NSPs. In comparison, International Power's proposed rule of requiring NSPs to comply with rule 5.3 of the NER could be time consuming and complex, as rule 5.3 is extensive and not tailored to addressing requests to change normal voltage.

3 The Commission's reasons

In assessing the rule change request, the Commission has considered the requirements set out in the NEL. For the reasons set out below, the Commission has determined that a more preferable rule should be made. Its analysis of the proposed rule is also set out below.

3.1 Assessment of issues

As discussed earlier, International Power is concerned that the definition of 'normal voltage' in the glossary of the NEL suggests that the normal voltage level can be varied through an agreement with AEMO and the relevant NSP, without a requirement to comply with rule 5.3 of the NEL. It seeks to remedy this by providing a reference to rule 5.3 in the definition of 'normal voltage' in the NEL glossary

Under the current NEL, normal voltage may be changed by up to 10 per cent higher or lower than the nominal voltage level, if approved by AEMO. There have only been two instances since the commencement of the National Electricity Market when the normal voltage has been changed, which indicates that such requests are rare. Both instances occurred in George Town, Tasmania on Transend's network.

The first instance in November 2006 involved an increase in the normal voltage level at George Town from 220 kV to 231 kV. This increase in the normal voltage removed a potential constraint on Basslink, but it meant that participants who wished to connect to George Town at 220 kV faced additional obligations to ensure that they could comply with the higher voltage level.

The second instance of a change in normal voltage occurred in June 2009 when the voltage was changed back from 231kV to 220kV in George Town. This change was made as the Aurora Energy's Tamar Valley combined cycle gas turbine could not cope with a normal voltage of 231 kV.

The Commission considers that while rare, changes to normal voltage could have a significant impact on registered participants. Therefore, it considers that a change to the NEL should be made to improve transparency around requesting a change to normal voltage. While rule 5.3 of the NEL sets out broad consultation obligations for establishing and modifying a connection, it does not explicitly set out a process that deals with requests for changing the normal voltage level. Further, it focuses on consultation between connected parties or connecting applicants and NSPs rather than the broader market.

While submissions from Grid Australia, Ergon Energy and United Energy Distribution⁹ have indicated that they would be likely to informally consult if they received a request to change normal voltage in the future, the Commission considers

⁹ Grid Australia submission, p.4; United Energy Distribution submission, p.1; Ergon Energy submission, p.5

that a rule should be made requiring notification to registered participants of a potential change. This is because a potential change to the normal voltage level could have impacts on participants beyond those directly connected at the relevant connection point.

Providing the broader market with an opportunity to raise concerns before any change is made to normal voltage is likely to improve market transparency and allow registered participants to make more efficient investment and operational decisions

3.2 Key features of the draft rule

The Commission broadly agrees with International Power's views on the need for a change to the NER. However, as discussed earlier, the Commission considers that International Power's proposed solution is unlikely to fully address the issues it has identified with the current NER. Therefore, the Commission has developed a more preferable rule that is more likely to provide an opportunity for consultation for potentially affected parties on requests to change normal voltage, and ensure they are informed of the outcome of any requests.

The draft rule would involve inserting a new clause, clause 5.3.11, into chapter five of the NER. The key elements of the draft rule are as follows:

- it requires AEMO to notify registered participants of a request to change the normal voltage level at a connection point, which provides all registered participants with an opportunity to raise any potential issues before such a change is approved; and
- it includes a requirement on AEMO to notify registered participants of whether the normal voltage level at the relevant connection point will change and the nature of any such change.

3.2.1 Benefits to market participants

The Commission considers that the requirement on AEMO to notify the market of a proposed change to the normal voltage level will provide an opportunity for all potentially affected registered participants to raise any concerns. This would improve transparency for registered participants and also provides them with an opportunity to prepare for any potential physical and commercial risks they might face as a result of a change to the normal voltage level.

It would also improve the ability of AEMO to be informed of any potential security or reliability impacts of the proposed change and take them into account in considering the request for approval.

A requirement on AEMO to notify registered participants of the result of a request would allow registered participants to make informed investment decisions, which is likely to improve efficiency in investment decisions and the efficiency of generation and network operations.

3.2.2 Potential costs

The Commission acknowledges that the draft rule has the potential to increase administrative costs for AEMO. Registered participants and NSPs may also face some administrative costs associated with approaching AEMO after being informed of a request to change normal voltage.

However, these cost increases are likely to be significantly outweighed by the potential benefits of the rule change. Administrative costs for AEMO are also likely to be minor as the draft rule is consistent with other similar obligations on AEMO to inform registered participants of issues affecting the operation of the National Electricity Market (NEM).

3.3 Civil Penalties

The draft rule does not amend any clauses that are currently classified as civil penalty provisions under the NEL or National Electricity (South Australia) Regulations. The Commission does not propose to recommend to the SCER that the additional clause in the draft rule be classified as a civil penalty provision.

4 Commission's assessment approach

This chapter describes the analytical framework that the Commission has applied to assess the rule change request in accordance with the requirements set out in the NEL (and explained in chapter 2). To assess this rule change, the Commission has considered:

- the scope and magnitude of potential changes to the normal voltage level in the absence of consultation; including:
 - the number of times the normal voltage level has been changed since the NEM commenced and the likelihood of a change in the future; and
 - in the absence of greater transparency regarding requests to change normal voltage, the potential impact on registered participants and the extent to which system safety may be compromised.
- International Power's proposed solution to the issues identified, including:
 - the effect of the rule change request on the efficiency of investments and the efficient provision of services in the NEM; and
 - whether the proposed solution should be modified to achieve the same intent but better contribute to the achievement of the NEO.

5 Scope and magnitude of the problem

5.1 Rule Proponent's view

International Power is concerned that the definition of 'normal voltage' in the glossary of the NER suggests that the normal voltage level can be varied through an agreement with AEMO and the relevant NSP, without a requirement to comply with rule 5.3 of the NER.

International Power considers that normal voltage is of "critical importance to connected parties" because it:

- establishes the limits at which voltage can be varied;
- establishes generator automatic access standards and minimum access standards for voltage disturbances; and
- guides requirements for generator protection settings.¹⁰

Therefore, International Power considers that NSPs should consult with potentially impacted parties prior to making a change to the normal voltage level.¹¹

5.2 Stakeholder views

Most of the submissions received from generation businesses supported the intent of the rule change proposal, while NSPs were of the view that a rule change was not required.

Generation businesses argued that a change to the normal voltage level, while rare, could have a significant and potentially adverse impact on their physical and commercial positions. For instance, Origin Energy considers that "a change to normal voltage could have a significant impact on generator performance standards and protection systems of the generator at the connection point". Further, it stated that "substantial changes in normal voltage could result in damage to the existing plant or require unexpected upgrades to the generator's connection assets to comply with new voltage levels".¹²

Similarly, Alinta Energy argued that "the impact of future changes to normal voltage potentially represents a significant outcome".¹³ AGL Energy supported a rule change that "provides regulatory certainty for the generators to minimise risks associated with a change of normal voltage by a NSP".¹⁴ AGL also stated that generators are

¹⁰ International Power, Rule change proposal - changes to normal voltage final, 10 April 2012.

¹¹ Ibid.

¹² Origin Energy submission, p.1.

¹³ Alinta Energy submission, p.1.

¹⁴ AGL Energy submission, p.1.

"contracted to operate at an agreed line voltage rating", which means that there is a risk that they will be adversely impacted by an unexpected change in normal voltage.¹⁵

In contrast, Hydro Tasmania considers that the current process is efficient, timely and cost effective. As such, Hydro Tasmania suggested that increased consultation requirements would result in unnecessary time delays and increased costs for connection applicants and existing connected parties. Hydro Tasmania also notes that transmission network service providers already consult with connected parties during instances when there are proposed changes to the normal voltage level.¹⁶

Similarly, network businesses, including Grid Australia, United Energy Distribution and Ergon Energy, stated that they are likely to informally consult with any market participants that they consider to be affected by a change to the normal voltage level.¹⁷ They also argued that changes to normal voltage are extremely rare and imposing a rule would impose unnecessary costs and time delays for new connections.¹⁸

Grid Australia noted that AEMO has a role in approving a request for a change to the normal voltage level, which means that a change to normal voltage would not be made if there is likely to be an adverse impact on system reliability and security. Grid Australia also stated that TNSPs do not process connection applicants with a view to having non-standard normal voltage.¹⁹ This appears to suggest that any changes to normal voltage may be rare.

5.3 Conclusion

The Commission considers that while rare, changes to the normal voltage level could have significant impact on registered participants. In particular, if generators have not factored in potential changes to normal voltage when purchasing equipment, this could result in unexpected costs to upgrade equipment to meet the new normal voltage level. Alternatively, if generator equipment is damaged by the change in normal voltage, this could result in unexpected costs to repair any damage.

The current version of the NER does not set out any specific arrangements to provide registered participants with an opportunity to raise concerns with AEMO about requests to change the normal voltage level.

The Commission notes that NSPs may have an obligation to consult with existing connected parties, as the normal voltage level is likely to be specified in connection agreements. In these cases, a change to the normal voltage level may require changes to these agreements. However, NSPs do not have any formal obligations to consult more

15 AGL Energy submission, p.1.

16 Hydro Tasmania, submission, pp.1-2.

17 Grid Australia submission, p.4; United Energy Distribution submission, p.1; Ergon Energy submission, p.5.

18 Grid Australia submission, p.3; United Energy Distribution submission, p.1; Ergon Energy submission, p.4

19 Grid Australia submission, p.4.

broadly with registered participants who may potentially be affected by the change but are not connected at that specific connection point.

The Commission considers that all registered participants should be given an opportunity to raise any issues before any change is made to the normal voltage level. This is because changes to normal voltage may result in commercial and physical risks for parties beyond those connected at the relevant connection point.

Notification that a request has been received by AEMO would help to limit risks for registered participants and keep them informed of any changes that could potentially affect their physical and commercial positions in the market. The Commission also considers that the opportunity for comments from the broader market would allow any impacts on system reliability and security that may result from the proposed change to be considered by AEMO.

For these reasons, the Commission has determined that a change to the NER is required to improve the transparency around requests to change normal voltage

6 Proposed solution

6.1 Rule Proponent's view

International Power seeks to address the problem it has identified by providing a reference to rule 5.3 of the NER in the definition of 'normal voltage' in the NER glossary. This means that the definition of normal voltage would be modified as follows:

“In respect of a connection point, its nominal voltage or such other voltage up to 10% higher or lower than nominal voltage, as approved by AEMO, for that connection point at the request of the Network Service Provider who provides connection to the power system, [in accordance with clause 5.3.](#)”

As noted in chapter 1, rule 5.3 of the NER sets out the processes to be followed in establishing and modifying a connection. International Power considers that this rule change request would reduce the:

- potential for network and generation capacity being constrained due to unplanned changes to the normal voltage level;
- likelihood that connected parties have to undergo unexpected costs to upgrade plant and equipment; and
- potential that a severely impacted participant could be required to exit the market if it cannot comply with the new normal voltage level.²⁰

6.2 Stakeholder views

Stakeholders had mixed views about the solution proposed by International Power. Some market participants, including Origin Energy and Alinta Energy consider that International Power's proposed rule change is an appropriate solution to the problem given the rarity of a potential change to the normal voltage level.²¹

For instance, Origin Energy notes that rule 5.3 of the NER covers the establishment and modification of a connection and considers that changes to normal voltage would fall under the 'modification of a network connection agreement'. It therefore considers that International Power's proposed solution is sufficient to ensure that NSPs consult with affected parties.²² Similarly, Alinta Energy stated that a reference to rule 5.3 of the NER is a proportionate response to the nature of the problem.²³

²⁰ International Power, Rule change proposal - changes to normal voltage final, 10 April 2012.

²¹ Origin Energy submission, p.1; Alinta Energy submission, p.1.

²² Origin Energy submission, p.1.

²³ Alinta Energy submission, p.1.

In contrast, AGL argued that the rule proposed by International Power would not provide a timely, efficient and effective solution. AGL considers that the proposed rule does not provide guidance for NSPs initiating a change in the normal voltage level and that there is no obligation for NSPs to consult and agree with affected generators on a change.²⁴

International Power's submission on the AEMC consultation paper acknowledged that its proposed rule may not provide for the most effective solution given the convoluted nature of rule 5.3 of the NER. However, given the rarity of a change to the normal voltage level, International Power considers its solution to be appropriate. It considers that if a specific rule were to be drafted, the rule should also include similar requirements for changes to other technical parameters (such as fault levels) at a connection point.²⁵

Ergon Energy considers that the proposed rule is unlikely to provide a timely and efficient consultation process.²⁶ Grid Australia and United Energy Distribution²⁷ did not comment on the appropriateness of International Power's proposed rule as they did not consider that a change to the NER is necessary, given the rarity of changes to normal voltage. Grid Australia, United Energy Distribution and Ergon Energy also stated that they are likely to consult informally if there was a request to change the normal voltage level.²⁸

6.3 Conclusion

As discussed in chapter 5, the Commission considers that a change to the NER is required to ensure that all potentially affected parties have an opportunity to raise issues on a proposed change to the normal voltage level.

However, the Commission has decided to make a more preferable rule as it considers that International Power's proposed rule would not provide an opportunity for potentially affected parties to raise issues with AEMO before any change is made to the normal voltage level. This is because under rule 5.3 of the NER, NSPs would only be required to consult with connected or connecting parties rather than the broader market.

The Commission also considers that International Power's proposed rule is unlikely to promote efficient investment, as it does not ensure that all registered participants would be informed of the outcome of a request to change the normal voltage level. This could mean that under International Power's proposed rule, some registered participants may be unable to factor this change into their investment decisions and prepare for any potential costs or impacts associated with the change.

24 AGL Energy submission, p.2.

25 International Power submission, pp.2-3.

26 Ergon Energy submission, p.5.

27 Grid Australia submission, p.1; United Energy Distribution submission, p.1.

28 Grid Australia submission, p.4; United Energy Distribution submission, p.1; Ergon Energy submission, p.5.

Further, International Power's proposed rule could impose increased compliance costs on NSPs and add time delays to new connections, because the processes in rule 5.3 are lengthy and relatively prescriptive.

Finally, the Commission considers that International Power's proposed rule would not provide a proportionate solution to a problem that is likely to be very rare. This is because rule 5.3 of the NER is relatively complex and is not tailored to addressing requests to change normal voltage.

Under the Commission's more preferable draft rule, AEMO would have an obligation to notify registered participants of a request to change normal voltage after receiving a request from a NSP. This would provide registered participants with an opportunity to be informed of a proposed change and raise any potential concerns with AEMO. This would promote market transparency, which is likely to improve market efficiency.

The draft rule also includes an obligation on AEMO to notify registered participants of the outcome of a request to change normal voltage. This provides regulatory certainty for the market and allows registered participants to factor this information into their investment decisions. This has the potential to lead to greater efficiency in investment in generation services and the operation of generation and network services. The Commission also considers that the draft rule does not impose a significant regulatory burden on registered participants, AEMO or NSPs.

The Commission has sought to minimise the level of prescription in the draft rule in recognition that changes to normal voltage are rare. This limited level of prescription also provides AEMO with discretion and flexibility to undertake studies to inform itself on the request to change normal voltage.

The Commission also notes that the draft rule is consistent with AEMO's current market notification role. As a result, the implementation costs of this draft rule should be minor.

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
Commission	See AEMC
MCE	Ministerial Council on Energy
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NSP	Network Service Provider
SCER	Standing Council on Energy and Resources
TOV	Temporary Over Voltage

A Summary of issues raised in submissions

Stakeholder	Issue	AEMC Response
Origin Energy	<p>Origin supports the proposed rule to clarify the process for changing normal voltage, particularly so that NSPs have an explicit obligation to consult prior to making any changes. It considers that a change to normal voltage could have a significant impact on generator performance standards and protection systems of the generator at the connection point.²⁹</p> <p>It is of the view that substantial changes in normal voltage could result in damage to equipment or require unexpected upgrades to connection assets. This can impact the quality, safety, reliability and secure supply of electricity. It notes that rule 5.3 of the NER covers the establishment and modification of a connection and considers the issues raised in this rule change proposal to fall under the 'modification of a network connection agreement'. It therefore considers that International Power's proposed solution is sufficient to ensure that NSPs consult with affected parties.³⁰</p> <p>It also notes that the AEMC's Transmission Frameworks Review is likely to result in an overhaul of the connections process. However, as this will take time to implement, rule 5.3, while</p>	<p>The Commission notes Origin's support for the rule proposed by International Power. However, it considers that International Power's proposed rule does not provide an effective opportunity for potentially affected parties to be informed of a request to change the normal voltage level.</p> <p>Rule 5.3 of the NER outlines the process for modifying existing connections and establishing new connections. This means that it only deals with existing connected parties seeking to modify a connection and new connecting parties only. Therefore, International Power's proposed rule change would not require NSPs to consult more broadly with potentially affected parties.</p> <p>The Commission considers that its more preferable rule addresses International Power's concerns about consultation by providing an opportunity for all registered participants to raise any issues about a proposed change to the normal voltage level prior to any changes being made.</p>

²⁹ Origin Energy submission, p.1.

³⁰ Origin Energy submission, p.1.

Stakeholder	Issue	AEMC Response
	'convoluted', is an appropriate solution in the interim. ³¹	
United Energy Distribution (UED)	<p>UED does not support this rule change and considers that an obligation in the NER to require NSPs to consult could result in a potential delay to new connections. It suggests that if this rule change were to proceed, that it be limited to connections on the transmission system.³²</p> <p>It also notes that it normally consults with any large customers who may be impacted by a change in normal voltage levels, rather than consulting with a large number of small, low voltage customers.³³</p> <p>It considers that changes to the normal voltage level to be rare and does not recall any customer requests for normal voltage to be changed. UED notes that the proposed rule does not appear to capture the need to consult with all potentially impacted parties.³⁴</p>	<p>The Commission notes UED's views. It acknowledges that changes to the normal voltage level are rare. However, it considers that the consequences of a change in normal voltage could be significant on registered participants. For that reason, it considers that it is appropriate to make a change to the NER.</p> <p>The Commission also agrees that the proposed rule would not require consultation with all affected parties. As a result, it has developed a more preferable rule which increases transparency by requiring AEMO to notify all registered participants of a request to change the normal voltage level. This would allow potentially affected registered participants to raise any issues with AEMO before a change is made to the normal voltage level.</p>
Ergon Energy	Ergon Energy does not support the rule change because it considers it unlikely that it will have to vary the normal voltage from a nominal voltage level. It also states that rule 5.3 of the NER	The Commission notes Ergon Energy's views. However, it is of the view that all registered participants should have an opportunity to raise any concerns before a change is made to the normal voltage level. It agrees that a reference to rule 5.3 of the NER provides little guidance for a

³¹ Origin Energy submission, p.2.

³² United Energy Distribution submission, p.1.

³³ United Energy Distribution submission, p.3.

³⁴ United Energy Distribution submission, p.1.

Stakeholder	Issue	AEMC Response
	<p>provides little guidance as to how consultation should be undertaken.³⁵</p> <p>Ergon also considers that changes to normal voltage will impact existing generators, registered participants, connected parties, system reliability and security. But it does not believe that a change to normal voltage levels would be implemented in the absence of consultation. It states that it does not consider the proposed rule change would provide for more consultation than is currently in place. It considers that formal consultation can add unnecessary delays to the connections process.³⁶</p>	<p>consultation process. Therefore, the Commission has created a more preferable rule to provide an opportunity for all registered participants to be aware of a request for change.</p> <p>The more preferable rule would require AEMO to publish a notice of a request to change the normal voltage level, and then notify the market of the outcome of the request. The Commission considers that the rule would be unlikely to add delays to the connection process.</p>
Grid Australia	<p>Grid Australia considers that normal voltage changes are very rare.³⁷</p> <p>It also states that before any changes are made to generator access standards, a TSNP would undertake extensive investigations to assess the impact of any proposed change. This would also involve AEMO which means that a change to normal voltage would not be made if there was a resulting adverse impact on system reliability and security. It is also of the view that TNSPs do not process connection applicants with a view to having non-standard normal voltage. It notes that according to the NER, a change to normal voltage</p>	<p>The Commission considers that while changes to the normal voltage level are rare, they have the potential to significantly and adversely impact registered participants. Therefore, the Commission considers that a rule is necessary to improve the transparency around changing the normal voltage level.</p> <p>The Commission's more preferable rule provides an opportunity for all potentially affected registered participants to raise any concerns with AEMO prior to any change to normal voltage. Further, the Commission considers it unlikely that the rule will impose time delays on the connection process. As the draft rule is consistent with AEMO's existing market notification role, compliance and implementation costs of this change are also likely to be low.</p>

³⁵ Ergon Energy submission, p.3.

³⁶ Ergon Energy submission, pp.4-5

³⁷ Grid Australia submission, p.1.

Stakeholder	Issue	AEMC Response
	<p>could only occur if it doesn't have adverse impacts on the market and that a market participant would not be forced to exit the market.³⁸</p> <p>Overall, Grid Australia considers that this rule change could result in greater costs to the market than benefits.³⁹</p>	
Hydro Tasmania	<p>Hydro Tasmania does not support the rule change proposal and considers that it would result in unnecessary, material time delays and increased costs for connection applicants and existing connected parties. It also considers that the current process is efficient, timely and cost effective.⁴⁰</p> <p>It is of the view that TNSPs do consult with connected parties in instances where there are proposed changes to the normal voltage level. For instance, during the change to the normal voltage level in George Town, Tasmania, Hydro Tasmania states that Transend did consult with connected parties when considering Hydro Tasmania's request to increase the normal voltage level. It confirms that it was also consulted by Transend when Aurora Energy requested to reduce the normal voltage level.⁴¹</p>	<p>The Commission notes Hydro Tasmania's concerns. To deal with the issue around the definition of "affected parties" the Commission has developed a more preferable rule which provides an opportunity for all registered participants concerned about a change to the normal voltage level to express any concerns to AEMO.</p> <p>This would also limit potential time delays and costs associated with changing the normal voltage level while providing registered participants with an opportunity for comment.</p>

³⁸ Grid Australia submission, p.3.

³⁹ Grid Australia submission, p.5.

⁴⁰ Hydro Tasmania submission, p.1.

⁴¹ Hydro Tasmania submission, p.1.

Stakeholder	Issue	AEMC Response
	<p>Hydro Tasmania considers that an issue with the proposed rule arises through a lack of a clear definition of the term "affected parties" For instance, it considers that the proposed rule would allow a competitor to engage in tactics (through the consultation process) that could be detrimental to the party that requested the change to the normal voltage level, which could cause delays to the delivery of low cost energy to consumers to the detriment of the NEO.⁴²</p> <p>It also notes that changes to the normal voltage level are very rare and that there have only been two instances of changes to the normal voltage level over a 14 year period.⁴³</p>	
AGL Energy	<p>AGL supports the need for a rule change in this space. It considers that there is a risk for generators to be adversely impacted by a change in the normal voltage level.⁴⁴ AGL states that generators are "contracted to operate at an agreed line voltage rating", which means that there is a risk that they will be adversely impacted by an unexpected change in normal voltage.⁴⁵ However,</p>	<p>The Commission agrees that changes to the normal voltage level, while rare, can have significant impacts on registered participants. It also agrees that International Power's proposed solution is not likely to achieve the intended outcome. Therefore, the Commission has proposed a more preferable rule which provides an opportunity for all potentially affected registered participants to raise any issues with AEMO before any change to the normal voltage level is made.</p>

⁴² Hydro Tasmania, p. 2.

⁴³ Ibid.

⁴⁴ AGL Energy submission, p.1.

⁴⁵ AGL Energy submission, p.1.

Stakeholder	Issue	AEMC Response
	<p>it acknowledges that a change to the normal voltage level "should not happen too often".⁴⁶</p> <p>It also considers that the current rule change proposal will not achieve the intended outcome of the rule. It considers it critical to improve the clarity of rule 5.3 and suggests a new clause be drafted for this purpose. In particular, AGL does not believe rule 5.3 of the NER would provide a timely, efficient and effective solution, as it does not provide guidance for NSPs initiating a change in the normal voltage level. Further, there is no obligation for NSPs to consult and agree with affected generators. It is of the view that a new clause or a preferable rule must take into account the following:</p> <ul style="list-style-type: none"> • potential impact on connected generators in terms of costs and technical feasibilities of a modified connection; • implications on the terms and conditions of existing connection agreements; • cost impacts on third party generators to remain neutral; • approval from AEMO on any changes with reference to NEM objectives; and • inclusion of other potential requests by NSPs to 	

⁴⁶ AGL Energy submission, p.3.

Stakeholder	Issue	AEMC Response
	<p>change network related technical parameters that could impact on existing generation connection points.⁴⁷</p> <p>AGL also notes that generators design and build their plant to comply with the agreed normal voltage, so do not factor into potential changes to the normal voltage level.⁴⁸</p>	
Alinta Energy	<p>Alinta supports the rule change proposal and considers that the impact of future changes to normal voltage potentially represents a significant outcome. It therefore considers that clarification around rule 5.3 of the NER is an appropriate solution.</p> <p>It considers that the NER should be explicit about the rights of impacted participants and clearly define the obligations on the NSP.</p> <p>It also suggests that the NSPs bear all reasonable costs of a change to the normal voltage on behalf of the participant.⁴⁹</p>	The Commission agrees that a change to the NER should be made to include an opportunity for registered participants to raise any concerns with AEMO regarding requests to change normal voltage.
International Power	International Power acknowledges that a change to the normal voltage level is rare but considers that potential ramifications are potentially significant.	The Commission agrees with International Power that a rule should be made which provides registered participants with an opportunity to raise concerns prior to a change to the normal voltage level taking effect. However, rule 5.3 of the NER does not explicitly address the issues

⁴⁷ AGL Energy submission, p.2.

⁴⁸ AGL Energy submission, p. 4.

⁴⁹ Alinta submission, p.1.

Stakeholder	Issue	AEMC Response
	<p>It agrees with the AEMC's assessment framework and also agrees that rule 5.3 of the NER is somewhat convoluted. It notes that it gave consideration to drafting a new rule specifically to deal with consultation requirements for changes to normal voltage. However, because such a change is so rare, it considered that its original proposed solution would suffice.</p> <p>It added that if a specific rule were to be drafted, it might be considered appropriate to include requirements for changes to other technical parameters at a connection point, such as fault level and protection settings for generators.⁵⁰</p> <p>It considers that its proposed solution, while not perfect, reinforces the principle that network businesses and AEMO should consult with affected parties when considering the impact of a change to the normal voltage level. It also notes the related rule change request for 'Connecting Embedded Generators' and considers that any broader changes to the effectiveness of rule 5.3 of the NER should be considered within this rule change.⁵¹</p>	<p>raised by International Power. Further, the provisions in rule 5.3 are largely limited to consultation requirements on NSPs for connection enquiries and connected parties, rather than all potentially affected parties. Therefore, the Commission has decided to make a more preferable rule.</p> <p>The Commission has not extended its draft rule to include changes to other technical parameters as it considers this to be outside the scope of the rule change request.</p>

⁵⁰ International Power submission, p.1.

⁵¹ International Power submission, p.2.