AEMC

RULE CHANGE

Australian Energy Market Commission

# RULE DETERMINATION

# National Electricity Amendment (Network Support Payments and Avoided TUoS for Embedded Generators) Rule 2011

**Commissioners**

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AEMC 2011, *Network Support Payments and Avoided TUoS for Embedded Generators*, Rule Determination, 22 December 2011, 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. The AEMC has two principal functions. We make and amend the national electricity and gas rules, and we conduct independent reviews of the energy markets for the MCE.

# Summary

The Australian Energy Market Commission (AEMC or Commission) has determined to make this final rule determination and rule as made in response to the Ministerial Council on Energy's (MCE)[1] rule change request regarding Network Support Payments and Avoided TUoS for Embedded Generators.

*Background*

Generators who connect to the distribution network (embedded generators) have the potential to reduce the long term need for investment in transmission infrastructure. This is because embedded generators may be able to reduce the distribution network's need to be supplied from the transmission network.

There are currently two payments that exist under the National Electricity Rules (NER) that embedded generators can receive to reflect this benefit they provide to the market. One is a network support payment directly from a Transmission Network Service Provider (TNSP) and the other is an avoided Transmission Use of System (TUoS) payment from the Distribution Network Service Provider (DNSP).

*The proponent's rule change request*

On 4 November 2010, the MCE submitted a rule change request to the Commission. This request sought to ensure that embedded generators are not over compensated, and therefore consumers overcharged, for the service they provide. Specifically, the rule change request sought to amend clause 5.5(h) of the NER to limit the requirement for DNSPs to make avoided TUoS payments to embedded generators. The proposal sought to ensure an avoided TUoS payment only occurs where the embedded generator does not receive a network support payment from a TNSP.

*The Commission's final rule determination*

The rule as made is the same as the draft rule contained in the draft determination and commences on 22 December 2011. The rule as made incorporates the principle from the proposed rule that there should be an efficient level of compensation for embedded generators for the benefits they provide in terms of reduced need to augment the transmission network.

However, the rule as made recognises that avoided TUoS payments and network support payments may compensate for different services. Accordingly, in some instances, it may be appropriate for an embedded generator to receive both payments. It should be noted that the ability to receive both payments is not an endorsement of two payments being made for the same service. It is recognition that both payments can, in certain circumstances, be justified due to the provision of separable services.

1 On 15 November 2011, the Council of Australian Governments' (COAG) Standing Council on Energy and Resources (SCER) formally commenced to carry on key reform elements of the Ministerial Council on Mineral and Petroleum Resources and the Ministerial Council on Energy (MCE). With the commencement of the SCER, the remit of the MCE has been withdrawn.

In particular, a network support payment can include compensation for an enhanced or specific level of service. It might not (and should not have to) always capture the full benefits to the shared transmission network of the embedded generator. In contrast, an avoided TUoS payment compensates an embedded generator where its existence and operation leads to a decrease in a DNSP's use of the transmission network at peak times. A reduction in the peak use of the transmission network reduces the need to augment the transmission network.

When negotiating a network support payment, a TNSP has the incentive, via the price control framework, to minimise the costs of the contracts for services it enters into. However, in practice, a degree of ambiguity exists with regard to how avoided TUoS is considered in negotiations between a TNSP and embedded generator. Therefore, the rule as made includes a requirement for TNSPs to take avoided TUoS payments into consideration when negotiating a network support payment.

*Reasons for the Commission's final rule determination*

The Commission is satisfied that the rule as made meets the rule making test in that it will, or is likely to, contribute to the achievement of the National Electricity Objective (NEO). Moreover, in light of the useful information received from stakeholder submissions, the Commission is satisfied that the rule as made will, or is likely to, better contribute to the achievement of the NEO than the proposed rule.

In particular, the Commission considers that the rule as made is likely to promote efficient investment in electricity services for the long term interests of consumers of electricity with respect to price and the reliability of supply of electricity. This is because it will ensure an embedded generator is efficiently compensated for the benefits it provides. This will provide incentives consistent with an efficient level of investment in embedded generation which, in turn, can contribute toward facilitating an efficient level of transmission investment. Additionally, the rule as made will promote greater certainty and consistency when negotiations for network support payments occur between a TNSP and an embedded generator.

*Consultation on the Rule change request*

The Commission commenced assessment of the rule change request on 23 June 2011 by issuing a notice under section 95 of the National Electricity Law (NEL) and publishing a consultation paper prepared by AEMC staff. Eleven submissions were received in response to this first round of consultation.

On 29 September 2011 the Commission published its draft determination and draft rule for which it has received six submissions.

# Contents

# 1 Ministerial Council on Energy's rule change request

## 1.1 The rule change request

On 4 November 2010, the Ministerial Council on Energy (MCE)[2] (rule proponent) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission) to make a rule to limit the requirement for a Distribution Network Service Provider (DNSP) to make an avoided Customer Transmission Use of System ('avoided TUoS') payment to an embedded generator. The proposal sought to ensure a payment only occurs where the embedded generator does not receive a network support payment from a Transmission Network Service Provider (TNSP).

The MCE's original rule change request sought to initiate three separate rule changes related to demand side participation consistent with the recommendations of the AEMC's Stage 2 Final Report on Review of Demand Side Participation in the NEM (Stage 2 DSP Review).[3] However, as the subject matter of each proposed rule is not related or inter-dependent, the proposed rule change has been disaggregated into three separate projects to allow the AEMC to efficiently assess each rule on its merits.[4]

## 1.2 Rationale for the rule change request

In its rule change request, the MCE provided its rationale for the proposed change. The MCE considered that to provide an avoided TUoS payment when an embedded generator is already in receipt of a network support payment would be a double-payment to embedded generators. As a result, the MCE considered that the locational and operational incentives to embedded generators would be over-signalled and contribute to higher long term costs for electricity consumers.[5]

## 1.3 Solution proposed in the rule change request

The rule proponent sought to resolve the issues referred to in section 1.2 through its rule change request which sought to amend clause 5.5(h) of the National Electricity

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2 On 15 November 2011, the Council of Australian Governments' (COAG) Standing Council on Energy and Resources (SCER) formally commenced to carry on key reform elements of the Ministerial Council on Mineral and Petroleum Resources and the Ministerial Council on Energy (MCE). With the commencement of the SCER, the remit of the MCE has been withdrawn.

3 Australian Energy Market Commission, *Review of Demand-Side Participation in the National Electricity Market*, final report, AEMC, 27 November 2009, Sydney.

4 The two other proposed rules raised by the MCE in the same rule change request are ERC0127 '*Efficiency benefit sharing scheme and demand management expenditure by transmission businesses*' and ERC0128 '*Inclusion of embedded generation research into demand management incentive scheme*'. A copy of documents related to these rule change proposals may be accessed from the AEMC website at www.aemc.gov.au.

5 Ministerial Council on Energy, *Rule Change Request - Implementation of the Rule change proposal arising from the Australian Energy Market Commission Review of Demand-Side Participation in the National Electricity Market,* 4 November 2010, p. 5.

Rules (NER) to limit the requirement for DNSPs to make avoided TUoS payments to embedded generators. The proposal sought to ensure a payment only occurs where the embedded generator does not receive a network support payment from a TNSP.

The rule change proposal would not alter the existing requirement for DNSPs to make avoided TUoS payments in circumstances where network support payments did not exist.

The proponent's rule change request included a proposed rule to give effect to these amendments (proposed rule).

## 1.4 Commencement of rule making process

Although the rule change request arose from the Commission's previous work in the context of the Stage 2 DSP Review, the Commission is nonetheless required to follow the standard rule making process, including undertaking further public consultation.

On 23 June 2011, 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 questions for consultation was also published with the rule change request. Submissions closed on 21 July 2011.

The Commission received 11 submissions on the rule change request as part of the first round of consultation. They are available on the AEMC website.[6] A summary of the issues raised in those submissions and the Commission's response to each issue is contained in appendix A.1.

## 1.5 Publication of draft rule determination and draft rule

On 29 September 2011, the Commission published a notice under section 99 of the NEL, and a draft determination including a draft rule in relation to the rule change request (draft rule determination).

Submissions on the draft rule determination closed on 10 November 2011. The Commission received six submissions on the draft rule determination. They are available on the AEMC website.[7] A summary of the issues raised in those submissions, and the Commission's response to each issue, is contained in appendix A.2.

6 www.aemc.gov.au

7 www.aemc.gov.au

# 2 Final rule determination

## 2.1 Commission's determination

The Commission has determined to make a more preferable rule in accordance with sections 91A and 102 of the NEL.[8] The more preferable rule incorporates the principle from the proposed rule that there should be an efficient level of compensation for embedded generators for the benefits they provide in terms of reduced need to augment the transmission network. Its key features are described in section 3.2.

However, rather than creating circumstances where a DNSP would be prohibited from making an avoided TUoS payment, the more preferable rule obligates the TNSP to take avoided TUoS payments into consideration when negotiating a network support payment with an embedded generator.

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

The *National Electricity Amendment (Network Support Payments and Avoided TUoS for Embedded Generators) Rule 2011 No 12* (rule as made) is published with this final rule determination. The rule as made commences on 22 December 2011.

## 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 MCE Statement of Policy Principles;[9]
- the Commission's recommendations to the MCE in the Stage 2 DSP Review;[10]
- submissions received during first and second round of consultation; and

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8 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 National Electricity Objective. Under section 102(2)(ii) of the NEL, a final rule determination of the AEMC is to contain the reasons of the AEMC as to whether it is satisfied the more preferable rule to be made will or is likely to better contribute to the NEO than the market initiated Rule request to which the more preferable rule relates

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

10 Australian Energy Market Commission, *Review of Demand-Side Participation in the National Electricity Market*, final report, AEMC, 27 November 2009, Sydney.

- as a more preferable rule, the Commission's analysis and reasons as to the ways in which the proposed rule will or is likely to better contribute to the achievement of the National Electricity Objective (NEO) compared to the MCE rule change request.

## 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. The rule as made falls within the matters set out in section 34 of the NEL and Schedule 1 to the NEL.

The rule as made falls within the subject matters set out in section 34 (1)(a)(iii) of the NEL as it relates to:

> "the activities of persons (including Registered Participants) participating in the national electricity market or involved in the operation of the national electricity system."

The rule as made also falls under the following subject matter under Schedule 1 of the NEL, namely:

> Item 34: "the payment of money (including the payment of interest)- ...(c) for any service provided under the Rules in respect of which the Rules require payment".

This is because the rule change relates to network support payments which compensate for alternatives to network augmentation and payments for avoided Customer TUoS ('avoided TUoS') charges made under 5.5(h) of the NER.

## 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.""

For this rule change request, the Commission considers that the relevant aspect of the NEO is the promotion of efficient investment in electricity services for the long term

interests of consumers of electricity with respect to price and the reliability of supply of electricity.[11]

The Commission is satisfied that the rule as made will, or is likely to, contribute to the achievement of the NEO because it promotes greater certainty and consistency when negotiations for network support payments occur between a TNSP and an embedded generator. This will provide incentives consistent with an efficient level of investment in embedded generation which, in turn, can contribute toward facilitating an efficient level of transmission investment.

Specifically, the rule as made promotes efficiency in that it will, or is likely to:

- contribute to ensuring an efficient level of compensation is made available to embedded generators commensurate with the level of service they provide. It would reduce any risk that TNSPs could enter network support agreements which over-compensate the embedded generator (which would lead to locational incentives being over-signalled and therefore the potential for inefficient outcomes); and

- remove ambiguity for TNSPs and embedded generators with regard to how avoided TUoS should be treated when negotiating a network support payment.

*Compatibility with AEMO's declared network functions*

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 Australian Energy Market Operator (AEMO)'s declared network functions. The rule as made would require AEMO, in its capacity as a TNSP in Victoria, to take into account avoided TUoS in any relevant negotiations with an embedded generator. The Commission believes this requirement is compatible with the proper performance of AEMO's declared network functions under section 50C of the NEL, in particular to plan, authorise, contract for, and direct, augmentation of the declared shared network.

Under section 91(9) of the NEL the Commission may only make a rule that affects the allocation of powers, functions and duties between AEMO and a declared transmission system operator if AEMO consents to the making of the rule. As the draft rule only affects the activity of negotiating a network support payment with an embedded generator in any instance when this occurs, and not who undertakes this negotiation, it does not alter the relevant allocation of powers, functions and duties.

## 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 (a more preferable rule) if

11 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.

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.

The more preferable rule incorporates the principle from the proposed rule that there should be an efficient level of compensation for embedded generators for the benefits they provide in terms of reduced need to augment the transmission network.

Having regard to the issues raised by the proposed rule, the Commission is satisfied that the rule as made will, or is likely to, better contribute to the NEO for the following reasons:

- the rule as made would more effectively promote an efficient level of compensation being made available to the embedded generator than the proposed rule because:
  - ensuring that the level of avoided TUoS is taken into account when negotiating a network support payment would make it clear that a TNSP must take into consideration the services provided by the embedded generator and compensated for by avoided TUoS. This would assist the TNSP in determining what an efficient network support payment would be for the enhanced service provided by the embedded generator; and
  - allowing both network support and avoided TUoS payments gives a TNSP the ability to construct a network support agreement for which the network support payment targets a specific service to be provided by an embedded generator (and which does not necessarily have to include the potential benefits to the entire shared transmission network);
- prohibition of both payments at the same time would add complexity (due to the need to incorporate a mechanism for DNSPs to be made aware of TNSPs network support payments to embedded generators) and ongoing administrative costs; and
- the transparency, in terms of the value assigned to each service provided, by retaining two separate payments would be maintained and can be more readily scrutinised.

## 2.6 Other requirements under the NEL

In applying the rule making test in section 88 of the NEL, the Commission also considered whether there are any relevant MCE Statements of Policy Principles as required under section 33 of the NEL. The Commission has determined that there is no MCE Statement of Policy Principles which is relevant to this rule change.

The Commission considers that the following sections of the NEL are also not relevant to the rule as made:

- section 88A (specifying the circumstances in which the AEMC must take into account form of regulation factors);
- section 88B (specifying the circumstances in which the AEMC must take into account revenue and pricing principles); and
- section 89 (relating to the matters to which the AEMC must have regard when making jurisdictional derogations).

# 3 Commission's reasons

The Commission has analysed the rule change request and assessed the issues that it raises. For the reasons set out below and in the following chapters, 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

In determining what arrangements would be most effective at ensuring that locational and operational incentives to embedded generators are efficiently signalled, it is necessary to determine whether the current arrangements could lead to inefficient outcomes.

This section outlines that the current arrangements could lead to inefficient outcomes in circumstances where the embedded generator obtains a network support payment which compensates for benefits and services compensated by avoided TUoS. However, it also concludes that flexibility is also required to allow both payments because there are potential circumstances where the services provided are not the same.

*Potential for inefficient compensation*

There is currently the potential for an embedded generator to be over-compensated where a network support payment recompenses for benefits that an embedded generator provides to the shared transmission network via decreasing peak demand. This benefit is currently reflected by avoided TUoS payments and should not be reflected in a network support payment were both payments to co-exist. Where over-compensation occurs, this would result in incentives to the embedded generator being over-signalled which would contribute to higher long terms costs for electricity consumers.

Going forward, the NER should be robust to address the risk of inefficient compensation, which may increase over time due to both the amount of embedded generation increasing and TNSPs seeking innovative solutions to defer transmission network augmentation.

*Variation of potential benefits an embedded generator can provide a TNSP*

Analysis undertaken and evidence provided in response to the first round of consultation indicates that an embedded generator could provide one or more of a number of different services which reduce the need for a TNSP to augment the shared transmission network. This might include an enhanced (or firm) service over that for which the benefits for avoided TUoS compensates, or a more specific service related to time of the day or deferring a particular upgrade.[12]

12 The potential variation of service is described in more detail in chapter 5.

The variety of potential services, and the benefit from being able to target desired services in a network support payment, warrants the possibility for the embedded generator being able to obtain both payments where this efficiently compensates them for the services provided.

*Benefit of TNSPs considering avoided TUoS when negotiating network support payments*

The Commission believes that the most efficient outcome would be achieved by ensuring that the TNSP takes into account avoided TUoS payments as well as all the benefits provided by an embedded generator if and when it decides to enter a network support agreement[13] with that embedded generator. This would ensure that incentives are appropriately signalled, and therefore encourage an efficient level of investment in embedded generation. Additionally, flexibility will remain for TNSPs to provide network support payments to embedded generators which target a certain service.

Currently, it may not be considered obvious how (and whether) avoided TUoS should be treated when a TNSP and embedded generator enter negotiations for a network support payment. By making it clear that avoided TUoS payments should be taken into account, the rule as made will also reduce this ambiguity.

Additionally, the rule as made does not result in an ongoing administrative burden that would exist under the proposed rule. Further, it would maintain the distinction between avoided TUoS payments and network support payments which ensures the value assigned to each service can be more readily scrutinised.

## 3.2 Rule as made

The rule as made places an obligation on TNSPs to take into account the service being provided by an embedded generator, and the extent to which the embedded generator will be compensated for those services by avoided TUoS payments, when negotiating a network support payment with an embedded generator.

The rule as made is incorporated into the NER by inserting a new clause after 5.6.2(l). The rule as made has been published simultaneously with this determination.

## 3.3 Civil penalties

The rule as made does not amend any rules that are currently classified as civil penalty provisions under the National Electricity (South Australia) Law or Regulations. The Commission does not propose to recommend to the MCE that the additional clause in the rule as made be classified as a civil penalty provision. This is because the additional clause places an obligation on TNSPs to take certain matters into account. However, it allows flexibility for TNSPs to discharge this obligation in a means they deem most efficient.

13 That is, a network support agreement with a network support payment (as defined in the NER).

# 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). This assessment framework has also been used to assess the rule as made which was subsequently developed.

In assessing this rule change request, the Commission has considered the following issues:

- allocative efficiency - the extent to which the current rule arrangements could lead to inefficient compensation of embedded generators. This sought to determine whether receiving a network support payment and an avoided TUoS payment constitutes a double payment or whether some element of these payments are for (or provide incentive for) a behaviour or service not covered by the other;

- materiality and implementation issues - how the proposed rule, if implemented, would impact on the operation of the market as a whole. This included consideration of:

  - the extent to which a double payment currently exists and the potential for this to occur in future;

  - the proportionality of the identified solution including the impact of any double payment on the National Electricity Market (NEM) as a whole and the commercial viability of embedded generators currently in receipt of both payments;

  - stability and regulatory certainty with respect to the long term predictability and certainty of revenue streams; and

  - the practical application of the rule - in particular, whether it would be effective at producing efficient outcomes.

In assessing any rule change request, the Commission must have regard to the extent to which the rule will, or is likely to, better contribute to the achievement of the NEO. In making this assessment, the Commission may give such weight to any aspect of the NEO as it considers appropriate.

In assessing this rule change request, the Commission has identified the most relevant aspects of the NEO as being the promotion of efficient investment with respect to the price and reliability of supply of electricity. In coming to its final determination the Commission sought to satisfy the objective of having transparent, practical rules that impact the private negotiation process only to the degree necessary to promote the long term interest of consumers.

# 5 Allocative efficiency

As part of its assessment of the rule change request, the Commission has considered the services being compensated by avoided TUoS and network support payments and has concluded that:

- it is possible, under certain circumstances, for the service and benefit provided to be the same; but that
- it cannot be considered that the services and benefits would always be the same.

Therefore, it is appropriate that both payments can co-exist, but a means is required to ensure that, where the service and benefit provided are the same, these are only compensated for once.

## 5.1 Rule proponent's view

In its rule change request, the MCE proposed that the NER should be clarified so that an embedded generator that is already receiving network support payments from a TNSP does not also receive an avoided TUoS payment.[14] In its reasoning, the MCE noted the conclusions of the Stage 2 DSP Review and submitted the rule change request consistent with those conclusions. In particular, the MCE suggested that to provide an avoided TUoS payment in circumstances where there was a network support payment would constitute a double payment to embedded generators. This would over-signal the locational and operational incentives and result in higher costs for consumers of electricity.

The MCE considered the proposed rule would, or would be likely to, contribute to the achievement of the NEO, because it would ensure that providers of non-network solutions are provided with efficient recompense for network support services. This would ensure that incentives and obligations for supply side and demand side solutions are balanced so that network businesses are encouraged to adopt the most efficient option. Facilitating efficient demand side participation is likely to promote a more efficient balance between investment in networks providing electricity services on the one hand and the efficient use of those services on the other hand.

*The Stage 2 DSP Review*

The Stage 2 DSP Review noted that the current arrangements for avoided TUoS are appropriate and proportionate from the perspective of small embedded generators.[15] Where an embedded generator reduces the locational component of TUoS that a DNSP is liable for, it is providing a benefit to the market in terms of cost savings on the transmission network.

14 MCE rule change request, p. 5.

15 AEMC 2009, *Review of Demand-Side Participation in the National Electricity Market*, final report, 27 November 2009, Sydney, p. 49.

The review also noted that without an avoided TUoS payment, embedded generators would not be provided with a signal about how their location impacts network use and therefore network investment. The absence of this signal could consequentially create a loss of efficiency.

The Stage 2 DSP Review concluded that the ideal manner to compensate an embedded generator for the benefits derived would be via a network support payment where this recognised the costs that are avoided by the TNSP and the services provided by the generator. However, it also noted that there are reasons, such as transactional costs, why a network support payment from a TNSP is unlikely to be practical or possible for the majority of embedded generators.

In response to submissions seeking clarification of the treatment of avoided TUoS when a network support agreement is in place, the Stage 2 DSP Review concluded that an avoided TUoS payment should not be made in those circumstances due to the risk that the locational signal would be over-signalled.[16]

## 5.2 Stakeholder views

### 5.2.1 First round of consultation - AEMC staff paper

In the submissions received to the initial AEMC staff consultation, the most common view, where one was expressed, was that there are reasons why the service provided in return for a network support payment can be differentiated from that compensated for by an avoided TUoS payment. This differentiation was primarily due to a network support payment incorporating compensation for some specific or enhanced service from the embedded generator.[17]

There was also a counter view expressed that both compensate for a reduction in demand on the network that TNSPs would otherwise have to provide.[18] Additionally, some respondents suggested that there was potential for a network support payment to contain a component of an avoided TUoS payment and therefore the potential for a double payment to occur.[19]

*Targeting specific parts of the shared network*

TRUenergy submitted that a network support payment and avoided TUoS payment separately compensate embedded generators for providing different benefits to distinctly separate parts of the shared network. In particular a network support service

16 AEMC 2009, *Review of Demand-Side Participation in the National Electricity Market*, final report, 27 November 2009, Sydney, p. 50.

17 Grid Australia, consultation paper submission, p. 1; Energy Power Systems, consultation paper submission, p. 2; SP AusNet, consultation paper submission, p. 1; TRUenergy, consultation paper submission, pp. 2-3; United Energy, consultation paper submission, p. 15.

18 Essential Energy, consultation paper submission, p. 1.

19 Jemena, consultation paper submission, p. 4; Ergon, consultation paper submission, p. 3; NovaPower, consultation paper submission, p. 3; Ausgrid, consultation paper submission, p. 1.

can relate to deferring a specific major augmentation of the transmission network and an avoided TUoS payment compensates for more generic locational benefits including the reduced need to import energy from distant generation.[20]

Grid Australia noted that network support is mainly intended to address system security and reliability issues within operational rather than investment time frames. Therefore, prohibiting both payments risks under-signalling the investment need.[21]

Similarly, Energy Power Systems also noted that an avoided TUoS payment only accounts for a reduction in load in a specific part of the network and does not take into account other services and benefits. In particular, Energy Power Systems indicated that network support payments can compensate an embedded generator for improving power factor and voltage stability which benefits individual feeders and or loads on terminal substations or zone substations.[22]

*Targeting specific periods of the day*

United Energy outlined that network support payments can compensate for services at times of day other than when system peak would occur.[23] For example, where the need to meet an overnight load peak can be met by an embedded generator, as opposed to augmenting transmission, this can be compensated by a network support payment. This however would not provide an incentive to generate at times of peak demand on the transmission network and therefore it is appropriate to receive avoided TUoS to encourage and signal this operation which has a distinct benefit.

*Delaying connection assets*

In its submission, SP AusNet outlined that it has entered into contracts with embedded generators for the purpose of deferring transmission network connection augmentation only.[24] SP AusNet considered that this avoids transmission prescribed exit charges as opposed to prescribed locational TUoS[25] and therefore provides a distinct network benefit. Therefore, SP AusNet believed that the proposed rule change could lead to a level of under-compensation for the network benefits embedded generators provide and make non-network solutions less attractive to potential proponents.[26]

Similarly, United Energy believed that the network support payment made to an embedded generator may actually represent the shadow price of prescribed exit

20 TRUenergy, consultation paper submission, pp. 2-3.

21 Grid Australia, consultation paper submission, p. 1.

22 Energy Power Systems, consultation paper submission, p. 3.

23 United Energy, consultation paper submission, p. 17.

24 The AEMC has clarified with SP AusNet that the contracts referred to have been entered into by SP AusNet's distribution business as opposed to its transmission business.

25 Noting that the avoided TUoS payment is a payment based on the locational TUoS that was avoided at a connection point only.

26 SP AusNet, consultation paper submission, p. 2.

services.[27] United Energy noted that, provided the parties to a network support agreement are reasonably well informed, there is no reason why a network support payment should be comprised of the avoided locational component of prescribed services. It would instead be made up of other types of charge that are used to recover the costs of transmission services.[28]

*Aggregate impact*

United Energy indicated that embedded generators, considered individually, are seldom of sufficient size to serve as a substitute for augmentation of the shared transmission network. However, if there were a large number of embedded generators, then their aggregate impact would potentially be more profound and it would be conceivable that their combined output would alleviate the load on the transmission network and thereby moderate the costs of augmentation in the short to medium term.[29] A network support payment would not compensate for this aggregate impact.

*Appropriate signals*

Stakeholders also provided views in relation to how a network support payment and avoided TUoS payment together may be appropriate due to signalling different benefits.

SP AusNet believed that, where the same generator is compensated for coincidental shared network benefits that are created via an avoided TUoS payment, there is no 'double dip', over-compensation or over-signalling issue.[30] Similarly, Grid Australia submitted that a network support contract is not principally about providing signals to reflect locational shortfall. It noted that, on balance, a degree of over-signalling would be consistent with the NEO due to the benefits provided to the operational security of the network.[31]

Ergon noted that if avoided TUoS is insufficient to provide an appropriate signal to the embedded generator, or is at odds with the signal from a network support payment, then preventing one of these signals could result in embedded generators locating in areas which do not necessarily meet the needs of the NEM.[32]

### 5.2.2 Second round of consultation - draft determination

A number of submissions supported the more preferable rule outlined in the draft determination in terms of allowing the potential for an embedded generator to receive

27 United Energy, consultation paper submission, p. 17.

28 Ibid, p. 16.

29 Ibid, p. 12.

30 SP AusNet, consultation paper submission, p. 1.

31 Grid Australia, consultation paper submission, p. 1.

32 Ergon, consultation paper submission, p. 4.

both a network support payment and an avoided TUoS payment.[33] The Australian Energy Regulator (AER) supported the need for a measure to ensure that embedded generators are efficiently compensated and that such compensation is not subject to double counting.[34] However, Grid Australia reiterated its view in its first round submission that it would be consistent with the objectives of the NEM to allow the potential for a degree of over-signalling to ensure the operational security of the market.[35]

TRUenergy reiterated its position from the first round of consultation that a network support payment and an avoided TUoS payment separately compensate embedded generators for different services provided.[36] TRUenergy provided an example at Tallawarra in New South Wales. It considered that its Tallawarra plant would both delay the conversion of certain existing transmission lines from 330kV to 500kV, and reduce the need to import power from the 330kV network to the 132kV network. TRUenergy considered that the first benefit related to network support services while the second consequential benefit should be eligible for an avoided TUoS payment.[37]

Grid Australia did not consider that it had been demonstrated that the operational and investment efficiency of the NEM would be improved.[38] In particular, it requested further detail on the degree that there could be potential negative effects that would arise from embedded generators being less willing to enter into network support agreements because they are no longer able to receive both a network support payment and avoided TUoS payment.[39]

## 5.3 Commission's analysis

In considering the rule change request, the Commission has taken into consideration how the current rules describe network support payments and avoided TUoS, the relevant interaction between an embedded generator, DNSP and TNSP, and the incentive framework that exists for the TNSP. These are discussed.

*What are network support payments and avoided TUoS payments?*

This section provides a brief introduction to network support payments and avoided TUoS payments. The effective financial flows and services provided are described in Figure 5.1.

33 TRUenergy, draft determination submission, p. 1; Origin, draft determination submission, p. 1; AER, draft determination submission, p. 1.

34 AER, draft determination submission, p. 1.

35 Grid Australia, draft determination submission, p. 1.

36 TRUenergy, draft determination submission, p. 1.

37 TRUenergy, draft determination submission, p. 2.

38 Grid Australia, draft determination submission, p. 1.

39 Ibid.

A network support payment is defined in the glossary of the NER as[40]:

> "A payment by a Transmission Network Service Provider to:
>
> (a) any Generator providing network support services in accordance with clause 5.6.2; or
>
> (b) any other person providing a network support service that is an alternative to network augmentation."

In terms of this rule change request, a network support payment relates to the specific service provided by an embedded generator to defer an augmentation to the shared transmission network. This can be seen as the direct links between an embedded generator and a TNSP in Figure 5.1.

A number of submissions to the staff consultation paper sought clarification of what type of network support payments were being considered under this rule change. In the context of this rule change request, a network support payment is as defined above. The rules do not cover any network support payments (to the extent they exist outside the definition in the NER) made by a DNSP. Therefore, the rule as made only relates to network support payments from a TNSP to an embedded generator.

In their submission to the draft determination, SP AusNet and United Energy considered that the current rules do not reflect the commercial reality in the NEM.[41] This is due to Victorian DNSPs having more incentive to enter a network support contract than Victorian TNSPs. This is discussed further in chapter 6.

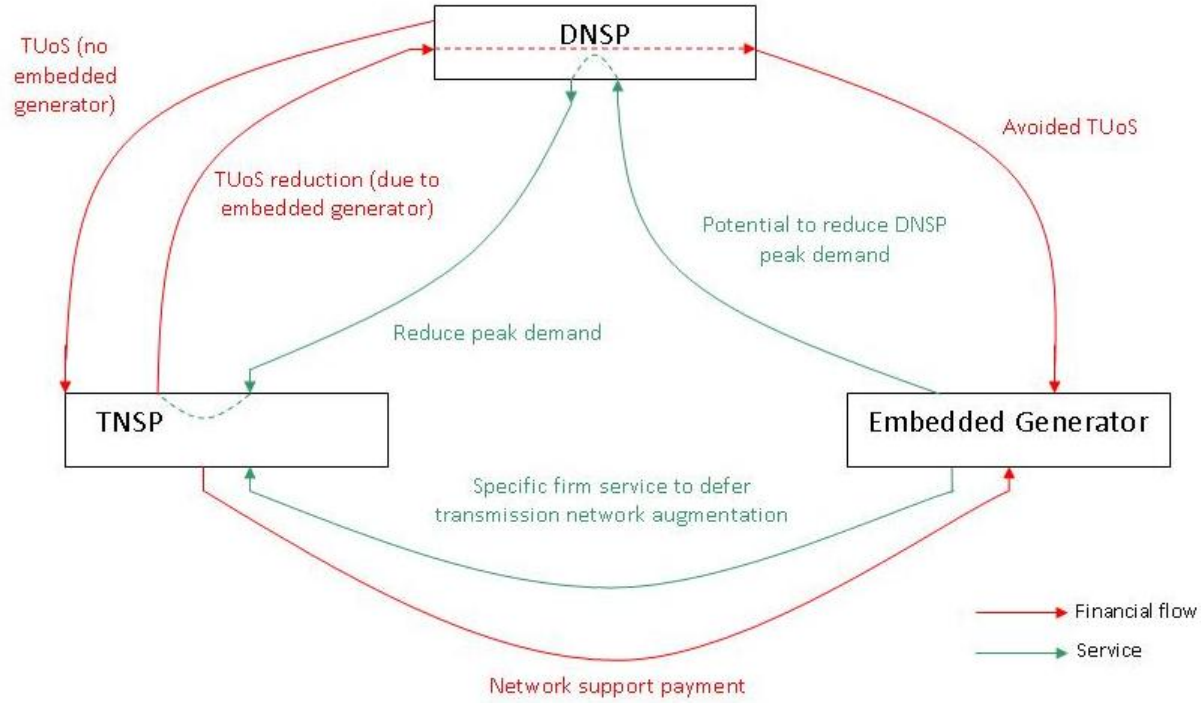
In the NEM, a DNSP is liable for prescribed TUoS payments to be made to the TNSP. The locational element of prescribed TUoS is based on the DNSP's use of the system at the time of greatest utilisation. As shown in Figure 5.1, the embedded generator can potentially reduce the DNSP's demand at times of system peak on the transmission network. Where the DNSP's demand at times of system peak on the transmission network is reduced, there is a corresponding reduction in the DNSP's liability for

40 See definition of 'network support payment', Chapter 10 'Glossary' of the NER.

41 United Energy and SP AusNet, joint draft determination submission, pp. 2-3.

prescribed locational TUoS. This reduced liability is calculated[42] and is required to be passed on to the embedded generator in the form of an avoided TUoS payment.[43]

**Figure 5.1 Effective financial flows and services provided related to avoided TUoS and network support payments**




*Targeting specific parts of the shared network and/or periods of the day*

In considering the evidence provided from both rounds of submissions, the Commission is satisfied that there could potentially be benefits and services provided by embedded generators to TNSPs which are mutually exclusive of the benefit for which an avoided TUoS payment would compensate. In order to extract these benefits, the TNSP may wish to enter into a network support agreement to ensure the embedded generator provides a firm level of service. This could, for example, include compensation:

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42 To calculate the amount to be passed through, the difference is calculated between (1) the charges for the locational prescribed TUoS services that would have been payable by the DNSP for the relevant financial year if the embedded generator had not injected any energy at its connection point and (2) the amount for the locational component of prescribed TUoS actually payable by the DNSP in the financial year. This calculation of avoided TUoS is described in 5.5(i) of the NER. This determines to what extent, if at all, the embedded generator's existence reduces the DNSP's peak demand taken from the TNSP. Specifically, this is the demand level which the TNSP uses for calculating locational TUoS charges at the connection point the DNSP deems the embedded generator to connect to. This measure of demand differs by jurisdiction (although all seek to represent levels of demand at times of greatest utilisation of the network) and can relate to contract agreed maximum demand, monthly maximum demand or an average of the top ten peak half hours.

43 Clause 5.5(h) of the NER. This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations.

- solely for firm generation provided at times other than system peak demand requirements;
- solely for deferring a specific shared transmission network asset; and/or
- for a firm service to contribute to reliability and security requirements which defer shared transmission network augmentation.

*Deferring transmission connection assets*

A 'network support payment' is defined in the NER as a payment from a TNSP for non-network alternatives to 'network' augmentation.[44] The NER definition of 'network' includes 'the apparatus, equipment, plant and buildings used to convey, and control the conveyance of, electricity to customers (whether wholesale or retail) excluding any *connection assets*.'[45]

Therefore, any examples of payments to an embedded generator for an agreement which solely deferred transmission connection assets, are not interpreted as network support payments under the NER. Were the agreement to also defer some shared transmission network assets, then the payment for that specific service could be considered a network support payment.

Currently, an embedded generator would be eligible for an avoided TUoS payment whether it has deferred a transmission connection asset or not. However, where it has deferred both shared transmission and connection assets, this avoided TUoS payment could potentially be calculated at a different connection point than if the transmission connection assets had actually been built (because the embedded generator would most likely have been allocated to the new connection point).

Therefore, when the transmission assets are deferred, the locational prescribed TUoS allocated to the connection point would potentially be lower than what would have occurred at the new connection point were the assets built. This indicates that, in such a circumstance, the avoided TUoS payment on its own would be unlikely to be an efficient level of compensation that is reflective of the benefit provided by the embedded generator.

*TNSP incentives*

Under the NER currently, TNSPs are allowed to recover from their customers actual network support payments made. However, the regulatory framework provides an incentive for the TNSP to minimise these payments.

The network support pass through process (as set out in the NER) has been established to adjust any network support payments included in a revenue cap so that only actual payments are recovered from transmission customers.

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44 Definition of 'network support payment', Chapter 10 'Glossary' of the NER.

45 Definition of 'network', Chapter 10 'Glossary' of the NER.

This incentive infers that a TNSP should take avoided TUoS into consideration when negotiating a network support payment and there is some evidence that this has occurred in past negotiations. However, this is not currently required under the NER.

## 5.4 Commission's conclusion

This rule change process has allowed for a deeper assessment of this issue than was achievable during the Stage 2 DSP Review. In particular, the Commission has received useful submissions from stakeholders. This has enabled the Commission to more thoroughly consider the evidence in relation to whether the services are the same, which in turn has informed this final determination. The Commission's final view in relation to allocative efficiency is consistent with its draft determination findings.

Taking into account the matters discussed in sections 5.1 to 5.3 above, the Commission has concluded that:

- the service provided by an embedded generator to a TNSP which is compensated by an avoided TUoS payment can, in certain circumstances, be differentiated from the service provided by the embedded generator and compensated by a network support payment. This warrants the NER facilitating the potential for an embedded generator to receive both payments to allow for an efficient level of compensation. Additionally, when an embedded generator is receiving a network support payment from a TNSP, this should only be for services provided in addition to that provided to the TNSP which are compensated for by avoided TUoS payments. This requires the NER to be clear and sufficiently robust to facilitate this outcome;

- a network support agreement between a TNSP and embedded generator, for which there is a network support payment, could (and should be enabled to) seek to defer specific shared network assets and make no attempt to compensate for any coincidental deferral of other shared assets; and

- as services can be differentiated, it is appropriate to provide an independent signal reflective of that particular service. This would ensure that incentives are appropriately signalled and therefore encourage an efficient level of investment in embedded generation.

In arriving at these conclusions, the Commission notes that a network support agreement must provide an enhanced level of service over that compensated for via avoided TUoS payments. If it did not, the TNSP would obtain no benefit from entering the agreement. In particular, the Commission notes:

- to receive avoided TUoS payments an embedded generator can run as desired, but will only receive a payment when their behaviour leads to the DNSP being able to reduce its off-take from the transmission system at the time determined to be 'peak' in that jurisdiction; and

- a network support payment is for a firm service that must be provided by the embedded generator to ensure a shared transmission network augmentation can be deferred. This could compensate for deferring specific transmission assets, providing reliability or security benefits and/or providing benefits at times other than system peak.

# 6 Materiality and implementation issues

The Commission has investigated the materiality of the identified issue and taken into account implementation considerations.

While the materiality is currently low, going forward, the rules need to be robust for situations where there is more embedded generation and potential benefits that could be derived from TNSPs entering into network support agreements with an embedded generator.

Additionally, where the potential solutions being considered create incentives which are broadly similar, resulting in comparable economic and efficiency outcomes, the solution adopted in the NER should seek to minimise the implementation and ongoing administrative costs to the market.

## 6.1 Rule proponent's view

In its rule change request, the MCE considered that the proposed rule would be likely to impact on network businesses and embedded generators. However, it noted that the proposed arrangements represent only an incremental change to existing obligations and processes and the impact would therefore not be expected to be significant.[46]

## 6.2 Stakeholder views

### 6.2.1 First round of consultation - AEMC staff paper

*Materiality*

In response to the initial consultation, a number of stakeholders considered that the materiality of the identified issue can, at best, be considered low. In particular, SP AusNet and United Energy noted that there were no embedded generators within their network which received both an avoided TUoS payment and a network support payment.[47]

Both Origin and TRUenergy considered that it would be uncommon for an embedded generator to receive both payments[48], with TRUenergy indicating that it is difficult to get either (due to avoided TUoS payments being calculated based on the embedded generator being able to reduce a DNSP's demand at system peak).[49] Ausgrid

46 MCE, rule change request, 4 November 2010, p. 6.

47 SP AusNet, consultation paper submission, p. 3; United Energy, consultation paper submission, p. 17.

48 Origin, consultation paper submission, p. 1; TRUenergy, consultation paper submission, p. 2.

49 TRUenergy, consultation paper submission, p. 2.

considered that an avoided TUoS payment is immaterial compared to what could be achieved through a network support payment.[50]

United Energy considered that a network support payment could include an avoided TUoS element. However, this is unlikely as TNSPs are well informed (of avoided TUoS arrangements) when entering negotiations for a network support agreement and would not include such a component.[51]

*Implementation considerations*

A number of stakeholders considered that, given the proposed rule would prohibit a DNSP from making an avoided TUoS payment, a mechanism would be required to ensure a DNSP is made aware of when a TNSP enters a network support agreement with an embedded generator. In Ergon's view, this would require penalty provisions in the rules to provide sufficient incentive and ensure the policy is workable in practice.[52]

AusGrid considered that, due to the required mechanism, the ongoing administrative and coordination costs of the proposed rule would be likely to outweigh the overall benefits of removing potential double payments. It believed that it would be more practical to ensure that TNSPs remove avoided TUoS from any network support payments made to embedded generators.[53]

TRUenergy considered that, if the proposed rule were to be implemented, a form of grandfathering should be considered to protect investments made in good faith and according to the rules at the time of the investment.[54] Similarly, United Energy considered that safeguards should be made available for embedded generators and network service providers which have clinched agreements under the existing rules, or under a previous regulatory regime.[55]

United Energy also commented that the economic outcome of the proposed rule could be worse for customers. This is because embedded generators who lose a right to avoided TUoS would expect and seek out a proportionate increase in the value of the network support payment and potentially overstate their capability.[56] However, retaining both avoided TUoS payments and network support payments would retain transparency of the compensation being provided to the embedded generator with these being more readily able to be scrutinised.[57]

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50 Ausgrid, consultation paper submission, p. 1.

51 United Energy, consultation paper submission, p. 16.

52 Ergon, consultation paper submission, p. 5; Essential Energy, consultation paper submission, p. 2; Ausgrid, consultation paper submission, p. 1.

53 Ausgrid, consultation paper submission, p. 2.

54 TRUenergy, consultation paper submission, p. 4.

55 United Energy, consultation paper submission, p. 18.

56 Ibid, p. 16.

57 United Energy, consultation paper submission, p. 16; SP AusNet, consultation paper submission, pp. 2-3.

### 6.2.2 Second round of consultation - draft determination

*Materiality*

Origin Energy reiterated that it considered that the ability for embedded generators to receive either a network support payment or avoided TUoS was limited. It therefore considered that the rule change would not make a material difference.[58]

TRUenergy considered that the degree of regulatory certainty surrounding the compensation available to embedded generators would be greater under the more preferable rule than the proposed rule. In particular, it suggested that a previous rule change[59] had made avoided TUoS payments more difficult to receive.[60]

*Implementation considerations*

In their joint submission, SP AusNet and United Energy considered that the more preferable rule is deficient due to it not reflecting the actual commercial practices in the NEM.[61] They suggested that in Victoria it is the DNSP who would enter negotiations with an embedded generator and that it would be unlikely for a TNSP to be a party to these negotiations. Therefore, they did not consider that the rule change (including the more preferable rule) has merit. They also stated that the draft rule is not necessary and therefore could be harmful.[62] The relevant arrangements in Victoria are outlined in section 6.3 below.

Citipower and Powercor Australia supported the more preferable rule excluding any requirement on DNSPs to provide avoided TUoS payment estimates to TNSPs.[63] They considered that it would be unnecessary to involve the DNSP in the process and that TNSPs are already aware that embedded generators are eligible to receive avoided TUoS payments and would have the capacity to estimate these amounts.[64]

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58 Origin Energy, draft determination submission, p. 1.

59 Australian Energy Market Commission, *Pricing of Prescribed Transmission Services*, Rule 2006 No: 22, 21 December 2006, Sydney.

60 This is due to a change to the calculation of the locational element of prescribed TUoS. Prior to the Pricing of Prescribed Transmission Services rule change, locational prescribed TUoS could be calculated using both an energy and maximum demand (or 'capacity') component. Following the implementation of the rule change, locational prescribed TUoS could only be calculated with a maximum demand (or 'capacity') component. An embedded generator is less able to influence DNSP maximum demand than it can DNSP total energy.

61 United Energy and SP AusNet, joint draft determination submission, pp. 2-3.

62 Ibid.

63 In its response to the AEMC staff consultation, Ausgrid suggested that an obligation could be put on DNSPs to keep a register of avoided TUoS payments and provide these to TNSPs when requested.

64 Citipower and Powercor Australia, draft determination submission, p. 1.

## 6.3 Commission's analysis

### 6.3.1 Materiality

In undertaking analysis for this rule change, the Commission is led to believe that there are no known instances where an embedded generator is currently receiving both a network support payment and an avoided TUoS payment.

Further, a TNSP is, in most circumstances, only likely to enter a network support agreement with an embedded generator of a certain size and/or reliability which can provide the level of service required. This limits the amount and type of embedded generators for which the identified issue could potentially arise. For most embedded generators, an avoided TUoS payment is likely to remain the only potential avenue for compensation of the benefit (if any) they provide to the transmission network.

In this regard the materiality of the issue in the current NEM arrangements is negligible. However, with future changes to the generation mix within the NEM, the potential for the issue to arise in future cannot be disregarded. Therefore, in order to ensure the NER is robust going forward, it is appropriate to make the rule as made to ensure that an embedded generator would be efficiently compensated for the benefits it provides to the transmission network.

### 6.3.2 Implementation considerations

*Proposed rule*

The Commission believes that, were the proposed rule to be implemented, it would drive negotiations for network support payments between a TNSP and embedded generator to include the avoided TUoS payment foregone. Were the embedded generator able to negotiate to receive the full value of avoided TUoS payment foregone, then this would result in a similar economic outcome as the current arrangements.

Therefore, the risk of an inefficient level of compensation under the proposed rule would be similar to the current arrangements and there would also be an ongoing administrative cost to ensure that TNSPs make DNSPs aware of all network support payments made to embedded generators.

*Transitional arrangements*

Given there are no known current examples of an embedded generator receiving both a network support payment and an avoided TUoS payment, transitional arrangements that maintain regulatory certainty are not required.

*Concurrent work*

The AEMC has recently completed a consultation on the Distribution Network Planning and Expansion Framework rule change raised by the MCE.[65] The rule change seeks establish of a national framework consisting of an annual planning and reporting process, a demand side engagement strategy, and a regulatory investment test for distribution process.[66] These are consistent with the recommendations made by the AEMC in its Review of National Framework for Electricity Distribution Network Planning and Expansion final report.[67]

The Commission considers that the implementation of the rule as made would not impact nor prejudice any consideration of the issues under the Distribution Network Planning and Expansion Framework rule change.

### 6.3.3 Victorian considerations

Unlike in other jurisdictions, in Victoria, DNSPs are responsible for planning and directing both new, and upgrades to, transmission connection assets that connect their distribution systems to the shared transmission network.[68] Under the NEL, AEMO's declared network functions are to plan, authorise, contract for and direct augmentation of the declared shared transmission network in Victoria.[69] AEMO must also undertake a cost benefit analysis (known as a Regulatory Investment Test for Transmission or RIT-T) by applying a probabilistic approach in deciding whether a proposed augmentation to the declared shared network should proceed.[70]

Where a transmission connection investment in Victoria requires consequential shared transmission asset augmentation, this must be directed or authorised by AEMO as Victorian TNSP. Subject to exceptions specified in the NER[71], a RIT-T must be applied.

If the shared transmission augmentations to facilitate a connection do not pass the RIT-T undertaken by AEMO, then as TNSP, it would have no driver to seek a network support agreement to defer the works. It is therefore the DNSP in Victoria who has greater incentive to evaluate competing options from AEMO (for a new transmission connection asset or an upgrade of existing transmission connection assets), and from embedded generators and other non-network solutions as a substitute. As such, the Victorian DNSPs would be the party more likely to enter negotiations, and

65 Australian Energy Market Commission, *Distribution Network Planning and Expansion Framework*, consultation paper, AEMC, 29 September 2011, Sydney.

66 Ibid, pp. 6-10.

67 Australian Energy Market Commission, *Review of National Framework for Electricity Distribution Network Planning and Expansion*, final report, 23 September 2009, Sydney, pp. vii-xiii.

68 Victorian distribution licence, clause 14.

69 NEL, section 50C(1)(a).

70 NEL, section 50F(2). Exceptions apply to the application of the probabilistic approach as set out in sections 50F(2)(b)(i)-(ii).

71 NER, clause 5.6.5C.

subsequently contract, with embedded generators. These contracts, which would be equivalent to the network support agreements that TNSPs in other jurisdictions would enter, are not governed by the NER as network support agreements are.

The Commission understands that the driver for negotiations to defer transmission connection assets to be between a DNSP and embedded generator is likely to be specific to Victoria. Therefore, the benefits of the rule change in Victoria are likely to be less than in other jurisdictions. However, the Commission does not believe that the rule as made will detrimentally impact upon DNSPs entering into contracts with embedded generators whether this occurs in Victoria or any other jurisdiction.

The rule as made places a requirement on TNSPs to take avoided TUoS into account when negotiating a network support payment to ensure they enter informed negotiations. It will not affect negotiations between a DNSP and embedded generator where these occur as a bilateral process outside of the NER. Further, as the party liable for avoided TUoS payments, a DNSP will already be informed of the benefit an embedded generator is eligible for when entering any negotiations.

## 6.4 Conclusion

The Commission believes that the rule as made provides a proportional solution to the identified issue because:

- although the materiality is currently low, the rules need to be robust going forward when the level of embedded generation is likely to increase and TNSPs may wish to extract potential benefits from the embedded generators;
- the ongoing administration and coordination costs to address the identified issue would be minimised.

In addition, the Commission understands that there are specific drivers in Victoria on DNSPs (rather than TNSPs) to enter into contracts equivalent to a network support agreement. The rule as made does not impact on DNSPs entering contracts with embedded generators and the Commission therefore does not consider that there are likely to be harmful consequences from implementing the rule.

## Abbreviations

| | |
|---|---|
| AEMC or Commission | Australian Energy Market Commission |
| AEMO | Australian Energy Market Operator |
| AER | Australian Energy Regulator |
| DNSP | Distribution Network Service Provider |
| MCE | Ministerial Council on Energy |
| NEL | National Electricity Law |
| NEM | National Electricity Market |
| NEO | National Electricity Objective |
| NER | National Electricity Rules |
| RIT-T | Regulatory Investment Test for Transmission |
| Stage 2 DSP Review | Stage 2 Final Report on Review of Demand Side Participation in the NEM |
| TNSP | Transmission Network Service Provider |
| TUoS | Transmission Use of System |

# A Summary of issues raised in submissions

## A.1 First round of consultation

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| Ausgrid | There is the potential for an inefficient level of incentive for embedded generators. However, this would be mitigated by the fact that avoided TUoS is immaterial in comparison to an network support payment, and an embedded generator is likely to take into account foregone avoided TUoS when determining the size of the incentive required from a network support payment. (p. 1). | The Commission agrees that there is potential for an inefficient level of incentive for embedded generators. Although the current materiality of this rule may be relatively low, the rules need to be robust to ensure that any circumstances where this eventuates are appropriately managed. |
| Ausgrid | A DNSP would find it difficult to identify embedded generators that receive a network support payment. There would also be confidentiality issues in circumstances of contracts with market aggregators as opposed to the embedded generators. (p. 1). | The Commission acknowledges that, under the proposed rule, an implementable mechanism would be required to ensure DNSPs are made aware of network support payments from TNSPs to embedded generators. The rule as made does not require this mechanism. This is discussed further in chapter 6 of this final rule determination. |
| Ausgrid | The administrative and coordination costs between DNSPs and TNSPs would be likely to outweigh the overall benefits of removing potential double payments. It would be more practical to ensure that TNSPs remove avoided TUoS from any network support payments made to embedded generators. An obligation could be put on DNSPs to keep a register of avoided TUoS payments and provide these to TNSPs in reasonable time frames when requested. (p. 2). | The Commission agrees that it would be inefficient to impose administrative and coordination costs that would be required to implement the proposed rule unless there was a clear economic gain from doing so. The rule as made seeks to ensure TNSPs take avoided TUoS payments into account as suggested. However, the Commission does not currently believe that an obligation is required for DNSPs to provide avoided TUoS payments to TNSPs due to the TNSP being aware that an embedded generator would, by default, be eligible to receive avoided TUoS payments and would therefore be able to estimate these amounts based on the provisions in the NER. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| Energy Power Systems Australia | The connection process needs to be made clearer. (p. 1). | The connection process for embedded generators is outside the scope of this rule change. |
| Energy Power Systems Australia | The rule change appears related to generators connected to the transmission network. The consultation does not make a clear distinction between network support agreements between an embedded generator and a TNSP and those made with a DNSP. The draft rule change should be explicit that it is referring to a TNSP network support agreement. (p. 2). | The rule change relates only to network support payments from a TNSP to embedded generators (who connect to a distribution network). This is discussed in section 5.3 of this final rule determination. |
| Energy Power Systems Australia | Avoided TUoS calculations are not transparent – these should be published and made clearer to enable negotiations with TNSPs simpler. (p. 2). | While transparency is generally desirable, this change is outside the scope of this rule change. |
| Energy Power Systems Australia | Avoided TUoS should also be paid on the locational and non-locational components as embedded generators do not need a connection to other base load generators. (p. 2). | The Commission believes that the locational component of prescribed TUoS is the element that signals long-term costs. It is therefore appropriate that this element is currently used to signal the cost savings on the transmission network and discover an appropriate level of avoided TUoS. |
| Energy Power Systems Australia | A differentiation between avoided TUoS and a network support payment can be made as the former compensates for local transmission benefits and does not take into account other services and benefits to the TNSP such as improving power factor and voltage stability. (p. 3). | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. This is discussed in chapter 5 of this final rule determination. |
| Energy Power Systems Australia | The proposed rule would reduce the incentive to build embedded generation and would result in a less efficient network. The absence of a suitable payment for location or service carried out would | The Commission believes that in order to achieve an efficient network, it is necessary to provide an appropriate signal that would facilitate efficient level of embedded generation being built. The rule as made seeks to ensure an efficient level of compensation would be made available to |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| | reduce the number of projects commercially viable and result in more network solutions being required. (p. 3). | embedded generators which would facilitate the efficient level of entry by embedded generation at the most beneficial locations. |
| Ergon Energy | There is a risk the two payments could over-compensate embedded generators and penalise end-customers when a TNSP passes through network support payments to a DNSP and the DNSP then passes them on to customers. (p. 3). | The Commission agrees that there is potential for an inefficient level of compensation for embedded generators. This is discussed in chapter 5 of this final rule determination. |
| Ergon Energy | An embedded generator may generate but receive no avoided TUoS payment due to the way that locational TUoS charges are calculated. Therefore the strength and adequacy of the signal will be largely influenced by how the TNSP develops its locational charge. (p. 3). | The Commission agrees that an avoided TUoS payment to an embedded generator is not guaranteed and depends on the ability to reduce the DNSP's use of the transmission network at times of system peak. This is however appropriate as the shared transmission network is augmented to accommodate system peak. This is discussed in chapter 5 of this final rule determination. |
| Ergon Energy | There is the potential for an avoided TUoS signal to be at odds with a network support payment signal. Therefore, if one signal is removed, this could result in locational decisions that don't meet the interests/objectives of the NEM. (p. 4). | The Commission agrees that, because the services and benefits provided by embedded generators for each payment can, in certain circumstances, be differentiated, that there is the potential for each payment to validly provide conflicting signals. This enables an embedded generator to make an informed choice about its location. The potential differentiation of service and benefit provided for each payment is discussed in chapter 5 of this final rule determination. |
| Ergon Energy | The consultation does not make a clear distinction between network support agreements between an embedded generator and a TNSP and those made with a DNSP. (p. 5). | The rule change relates only to network support payments from a TNSP. This is discussed in section 5.3 of this final rule determination. |
| Ergon Energy | A mechanism is required to allow a DNSP to know when a TNSP enters a network support agreement with an embedded generator. This would require | The Commission acknowledges that, under the proposed rule, an implementable mechanism would be required to ensure DNSPs are made aware of network support payments from TNSPs to embedded |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| | penalty provisions in the NER to provide sufficient incentive and ensure the policy is workable in practice. (p. 5). | generators. The rule as made does not require this mechanism. This is discussed further in chapter 6 of this final rule determination. |
| Essential Energy | A network support payment and avoided TUoS are the same type of payment as they are compensation for a reduction in demand on the TNSP network that the TNSP would otherwise have to provide to ensure a stable and reliable supply of electricity. (p. 1). | The Commission believes that evidence has been provided that shows that a network support payment can provide an enhanced (and/or potentially targeted) level of service. This is discussed further in chapter 5 of this final rule determination. |
| Essential Energy | To be implementable, TNSPs will need to be required to provide details on each network support payment to DNSPs including a commencement date and duration of payment. Confidentiality issues would need to be considered. (p. 2). | The Commission acknowledges that, under the proposed Rule, an implementable mechanism would be required to ensure DNSPs are made aware of network support payments from TNSPs to embedded generators. The rule as made does not require this mechanism. This is discussed further in chapter 6 of this final rule determination. |
| Grid Australia | Network support agreements are intended to address system security and reliability issues within operational rather than investment time frames. The rule change would therefore result in under-signalling due to the embedded generator not being able to receive the avoided TUoS. Where a portion of a network support payment provides a signal this could theoretically be removed from avoided TUoS but this would not be implementable. (p. 1). | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. This is discussed in chapter 5 of this final rule determination. |
| Grid Australia | The potential for over-signalling could be consistent with NEM to ensure operational security. Embedded generators may be less willing to provide network support should the rule change proceed reducing the potential for the security | The Commission believes the correct signal would be provided by allowing TNSPs to take avoided TUoS into consideration when negotiating a network support payment with an embedded generator. This negotiation should seek to take into account the value of services that facilitate operational security. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| | benefits to be realised. (p. 1). | |
| Jemena | The rule change needs to differentiate between network support payments from TNSPs and those from DNSPs. The former may be a double payment and the latter is not (as the payment relates to discrete benefits). (p. 1). | The rule change is only in relation to (and therefore would have an impact on) those embedded generators that receive a network support payments from a TNSP. |
| NovaPower | The rule change needs to differentiate between network support payments from TNSPs and those from DNSPs. (p. 1). | The rule change relates only to network support payments from a TNSP. This is discussed in section 5.3 of this final rule determination. |
| NovaPower | In Victoria, the embedded generator needs to be generating during the 10 maximum peak days to receive an avoided TUoS payment. (Attachment 2, p. 12). | The Commission agrees that an avoided TUoS payment to an embedded generator is not guaranteed and depends on the ability to reduce the DNSP's use of the transmission network at times of system peak. This is however appropriate as the shared transmission network is augmented to accommodate system peak. This is discussed in chapter 5 of this final rule determination. |
| Origin | Where an network support payment includes avoided Distribution Use of System payments, it should not be assumed that it also covers benefits analogous with avoided TUoS. (p. 1). | The rule change relates only to network support payments from a TNSP. This is discussed in section 5.3 of this final rule determination. |
| Origin | Instances of receiving both payments are uncommon and it is difficult to get either due to difficulties calculating the payments and the stronger negotiating position of the DNSPs. (p. 1). | The Commission agrees that the current materiality is low. However, the rules need to be robust going forward. This is discussed further in chapter 6 of this final rule determination. |
| SP AusNet | The services can be differentiated. In Victoria, DNSPs have responsibility for planning, and they therefore purchase network support to avoid augmenting transmission connection assets. Therefore network support is a substitute for | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. However, the definitions in the NER of a 'network support payment' and 'network' indicate that a network support payment (as defined in the NER) should not include deferral of transmission connection assets. This is discussed in chapter 5 of this final |

| Stakeholder | Issue | AEMC Response |
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| | transmission exit charges and not TUoS. If there is coincidental benefit to the shared network then the embedded generator should be compensated for this. The rule change could lead to under-compensation. (p. 1). | rule determination. |
| SP AusNet | The current rules keep the two payments separate and transparent. (p. 2). | The Commission agrees that there can be a benefit to transparency by retaining two separate payments. |
| SP AusNet | No embedded generators on the SP AusNet network currently receive both payments. (p. 3). | The Commission agrees that the current materiality is low. However, the to be robust going forward. This is discussed further in chapter 6 of this final rule determination. |
| TRUenergy | Embedded generators do not pay prescribed TUoS and cannot therefore receive the same benefit or signal from causing reductions in network costs as customers. (p. 1). | The Commission agrees that embedded generators currently only receive locational signals in terms of the benefit they have to the transmission network via avoided TUoS payments or network support payments. |
| TRUenergy | A network support payment and avoided TUoS payment compensate for different services based predominantly on being able to defer different parts of the network. Network support is to defer specific major augmentation of the transmission system and avoided TUoS compensated for locational benefits including the reduced need to import power from distant generators and thus reinforce local substations. (p. 2). | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. This is discussed in chapter 5 of this final rule determination. |
| TRUenergy | No embedded generator currently receives both so the rule change would not be proportional. (p. 2). | The Commission agrees that the current materiality is low. However, the rules need to be robust going forward and there would be benefit in introducing the draft rule. This is discussed further in chapter 6 of this final rule determination. |

| Stakeholder | Issue | AEMC Response |
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| TRUenergy | Revenues streams from both payments are factored in when building an investment case for an embedded generator. The payments also provide an incentive to complete plant on time. (pp. 2-3). | The Commission believes that it is appropriate to retain the potential for both payments. This is discussed in chapter 5 of this final rule determination. |
| TRUenergy | Grandfathering should be considered to protect investments made in good faith. (p. 3) | The rule as made would allow for both payments although the lack of any known examples of an embedded generator receiving both payments means that the need to put in place specific measures to transition from the current arrangements would not be required. This is discussed further in chapter 6 of this final rule determination. |
| United Energy | The staff consultation paper overlooks network support agreements between DNSPs and embedded generators. (p. 12). | The rule change relates only to network support payments from a TNSP. This is discussed in section 5.3 of this final rule determination. |
| United Energy | Embedded generators should receive avoided TUoS even though on their own they are unlikely to defer augmentation, their aggregate existence provides a benefit that should be compensated. Where these are firm and dependable alternative to augmentation then network support payments can be offered to operate according to agreed conditions. (p. 12). | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. This is discussed in chapter 5 of this final rule determination. |
| United Energy | A network support payment may include a component of revenue for prescribed transmission services related to the TUoS non locational charge, the common services charge, the equalisation charge or prescribed entry and exit services. It may also include an avoided TUoS charge however this is unlikely as TNSPs are well informed (of avoided TUoS) when entering negotiations for a network | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. Additionally, the Commission understands that there are incentives on TNSPs to negotiate an efficient payment for its network support agreements although the Rules are not currently clear on how TNSPs should treat avoided TUoS in those negotiations. This is discussed in chapter 5 of this final rule determination. |

| Stakeholder | Issue | AEMC Response |
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| | support agreements and would not include such a component. (p. 15). | |
| United Energy | Retaining both payments would retain transparency. It is less desirable if compensation for both benefits are built into the network support payment as it is less easily scrutinised. (p. 16). | The Commission agrees that there can be a benefit to transparency by retaining two separate payments. |
| United Energy | Embedded generators who lose the right to an avoided TUoS payment would expect and seek out a proportionate increase in the value of the network support payment. If they have scope to over-state their expected output then they could claim a higher value network support payment. These costs would be passed on to consumers. (p. 16). | The rule as made would allow for both payments. This is discussed further in chapter 6 of this final rule determination. |
| United Energy | The services can be differentiated. For example, Bairnsdale obtains a network support payment for overnight loads, but this provides no incentive (on top of the energy price) to generate during the day and reduce peak loads. (p. 17). | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. This is discussed in chapter 5 of this final determination. In relation to Bairnsdale, the AEMC has clarified with SP AusNet that their distribution business as opposed to their transmission business entered this contract. Therefore, this is not an example of a network support payment from a TNSP to an embedded generator. |
| United Energy | No examples on United Networks network of both payments exists. (p. 17). | The Commission agrees that the current materiality is low. However, the rules need to be robust going forward and there would be benefit in introducing the rule as made. This is discussed further in chapter 6 of this final rule determination. |
| United Energy | The staff consultation paper did not provide the analysis required to support the rule change. (p. 18). | The purpose of the staff consultation was to seek views of the industry on the rule change prior to the Commission making its draft determination. |

| Stakeholder | Issue | AEMC Response |
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| United Energy | If the rule change goes ahead, safeguards are required for agreements made under the existing NER. (p. 18). | The rule as made would allow for both payments although the lack of any known examples of an embedded generator receiving both payments means that the need to put in place specific measures to transition from the current arrangements would not be required. This is discussed further in chapter 6 of this final rule determination. |

## A.2 Second round of consultation

| Stakeholder | Issue | AEMC response |
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| TRUenergy | There is no double payment. A network support payment and an avoided TUoS payment compensate embedded generators for providing services to two distinctly different parts of the network. Network support can defer major augmentation while avoided TUoS compensates for generic locational benefits. (pp. 1-2). | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. This is discussed in chapter 5 of this rule determination. |
| TRUenergy | Regulatory uncertainty would increase under the proposed rule because the firmness of the revenue streams would be further undermined. (pp. 1-3). | The Commission has been mindful of the impact of regulatory certainty in its assessment approach. As the rule as made retains the potential for both payments, this impact is minimised. |
| Powercor Australia/ Citipower | DNSPs should not be required to provide avoided TUoS payment estimates to TNSPs. Providing estimates would unnecessarily involve the DNSP in a private commercial negotiation between a TNSP and generator. (p. 1). | The Commission agrees that an obligation is not required for DNSPs to provide information related to avoided TUoS payments to TNSPs. |
| Powercor Australia/ Citipower | TNSPs are already aware that embedded generators would be eligible to receive avoided | The Commission agrees that TNSPs should be aware of embedded generators' eligibility to receive avoided TUoS. |

| Stakeholder | Issue | AEMC response |
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| | TUoS payments and would therefore be able to estimate these amounts. (p. 1) | |
| AER | Compensation should not be subject to double counting, but it is important not to prohibit both payments in all circumstances. (p. 1). | The Commission agrees that prohibiting an embedded generator from being able to receive both payments would not necessarily allow for an efficient level of compensation. This is discussed further in chapter 5 of this final rule determination. |
| Grid Australia | It would not be practical to consistently calculate across the NEM the portion of a network support payment that provides a locational signal to be deducted from the TUoS payment. (p. 1). | The rule as made does not require an amount to be calculated and removed from TUoS payments. Avoided TUoS payments would remain calculated as they currently are. TNSPs would be required to take any avoided TUoS payments into account when negotiating a network support payment. TNSPs would retain flexibility of how to discharge this requirement. |
| Grid Australia | The potential for over-signalling could be consistent with the NEM to ensure operational security. (p. 1). | The rule as made allows the TNSPs the flexibility to establish what they believe is an efficient structure of a network support payment once they take into account any avoided TUoS payment to the embedded generator. As the TNSP is best placed to establish and negotiate an efficient level of network support payment, the rule as made requires them to take avoided TUoS payments into account when doing so. |
| Grid Australia | The Commission has not assessed the impact of embedded generators being less willing to provide network support as they would not be able to receive both payments. (p. 1). | Receiving both payments would not be prohibited under the more preferable rule. TNSPs would have the flexibility to only enter a network support agreement with an embedded generator if they receive some additional level of service for which the avoided TUoS does not compensate the embedded generator. If an embedded generator is not willing to enter a network support agreement for a payment that is reflective of the value of that service provided to the TNSP, then it would not be economic for the agreement to be entered into. |
| SP AusNet / United Energy joint submission | The draft determination refers to TNSP negotiations with an embedded generator when these would, by definition, take place between a | The rule as made would not affect negotiations between a DNSP and embedded generator where these occur as a bilateral process outside of the NER. The Commission understands that the main driver for such |

| Stakeholder | Issue | AEMC response |
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| | DNSP and an embedded generator. (p. 2). | negotiations is likely to be specific to Victoria. This is discussed further in chapter 6 of this final rule determination. |
| SP AusNet / United Energy joint submission | The more preferable rule is detached from normal commercial practices in the NEM and could possibly be harmful. In Victoria, DNSPs are responsible for planning transmission connection assets. Victorian DNSPs will evaluate competing options from a TNSP, embedded generator or other non-network solutions. (pp. 2-3). | The Commission notes that certain consequences of the joint planning arrangements in Victoria do not appear to be reflected in the NER. However, the Commission does not consider that it would be within the scope of this rule change to construct a rules framework to accommodate the different characteristics of the Victorian planning arrangements. The rule as made does not impact upon DNSPs entering into contracts with embedded generators. Additionally, the Commission does not believe that any evidence has been provided that the rule as made would be detrimental to the NEO. This is discussed further in chapter 6 of this final rule determination. |
| Origin Energy | Supports the draft rules intent to enable embedded generators to recoup both payments where appropriate. (p. 1). | The Commission agrees that the payments are intended to compensate for services that are not exactly the same. This is discussed in chapter 5 of this final rule determination. |
| Origin Energy | The ability of embedded generators to receive either payment will prove difficult. (p. 1). | The Commission agrees that the current materiality is low. However, the rules need to be robust going forward and there would be benefit in introducing the rule as made. This is discussed further in chapter 6 of this final rule determination. |