

NEM TRANSMISSION NETWORK SERVICE PROVIDER NEGATIVE SETTLEMENTS RESIDUE PROCEDURE

PREPARED BY: AEMO Strategy & Markets
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Approved for distribution and use by:

APPROVED BY: Peter Geers
TITLE: Chief Strategy and Markets Officer

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1	4 June 2012	Metering & Settlements
2	1 July 2021	Updated worked example to align with implementation of Five-Minute Settlement and template changes

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1. INTRODUCTION

1.1. Purpose and scope

This NEM Transmission Network Service Provider Negative Settlements Residue Procedure (Procedure) sets out the matters *AEMO* is required to determine under clauses 3.6.5(a)(4) and 3.6.5(a)(4A) of the National Electricity Rules (NER), in relation to the recovery of negative *settlements residue* amounts from *Transmission Network Service Providers*.

This Procedure has effect only for the purposes set out in the NER. The NER and the National Electricity Law prevail over this Procedure to the extent of any inconsistency.

1.2. Definitions and interpretation

1.2.1. Glossary

- (a) Terms defined in the National Electricity Law and the NER have the same meanings in this Procedure unless otherwise specified in this clause.
- (b) Terms defined in the NER are intended to be identified in this Procedure by italicising them, but failure to italicise a defined term does not affect its meaning.
- (c) The words, phrases and abbreviations in the table below have the meanings set out opposite them when used in these Procedures.

Term	Definition
appropriate TNSP	The TNSP determined in accordance with Rule 3.6.5(a)(4B)
Negative Settlements Residue Payment Amount	The amount which the TNSP must pay as part of the Negative Settlements Residue Payment Methodology
Negative Settlements Residue Payment Methodology	A payment interval and method in respect to clause 3.6.5(a)(4) and 3.6.5(a)(4A) of the Rules by which TNSP's must make payment to <i>AEMO</i>
NER	National Electricity Rules
Settlements Residue Report	A report produced as part of the issue of settlement statements, which provides a breakdown of residue amounts
SRA	Settlement Residue Auction
Statement Amount	The total amount appearing on the TNSP's <i>preliminary statement</i>
TNSP	<i>Transmission Network Service Provider</i>

1.2.2. Interpretation

This Procedure is subject to the principles of interpretation set out in Schedule 2 of the National Electricity Law.

1.3. Related documents

Title/Reference	Description/Location
Methodology for the Allocation and Distribution of Settlements Residues	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Settlements-and-payments/Settlements/Settlements-Residue-Auction/Guide-to-settlements-residue-auction

Title/Reference	Description/Location
Dispatch SO_OP3705	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Security-and-reliability/Power-system-operation/Power-system-operating-procedures

2. BACKGROUND

2.1. Settlements Residue

In the *NEM*, *settlements residue* can arise due to several reasons, including network losses and constraints. These residues are apportioned into two components.

- *Inter-regional settlements residue*

This is the residue which is attributable to *regulated interconnectors*. *Inter-regional settlements residue* is distributed through the Settlements Residue Auction (SRA) process, after giving effect to any applicable jurisdictional derogation.

- *Intra-regional settlements residue*

This is the remaining *settlements residue* which arises from *intra-regional loss factors*. *Intra-regional settlements residue* is allocated to the appropriate TNSP of the importing *region* for both positive and negative amounts.

The calculation and apportionment of *settlements residues* is detailed in a methodology¹ document published by AEMO.

Both residue components can be either positive or negative dollar amounts, and the distribution/recovery in each *trading interval* can be summarised in the table below:

Table 1: SUMMARY OF SETTLEMENTS RESIDUES

	POSITIVE AMOUNTS		NEGATIVE AMOUNTS
<i>INTER-REGIONAL SETTLEMENTS RESIDUE</i>	According to jurisdictional derogation		
	SETTLEMENT RESIDUE AUCTION		Appropriate TNSP of importing <i>region</i>
	SRA unit holders (sold units)	Appropriate TNSP of importing <i>region</i> (unsold units)	
<i>INTRA-REGIONAL SETTLEMENTS RESIDUE</i>	Appropriate TNSP		

This procedure relates to the recovery of negative amounts accrued by a TNSP with respect to *inter-regional and intra-regional settlements residues*.

2.2. Negative Inter-regional Settlements Residue

Negative *inter-regional settlements residues* can occur for a number of reasons, but typically arise when there is an energy flow from a higher-priced *region* to a lower-priced *region* (counter-price

¹ AEMO document "National Electricity Rules Clause 3.6.5 – Methodology for the Allocation and Distribution of Settlements Residues"

flow). These negative amounts are recovered from the appropriate TNSP of the importing *region* as part of the settlement of the *billing period* in which they occur.

AEMO has a system operating procedure² which deals with the management of negative residues where the magnitude of the residue exceeds a predetermined threshold. Due to power system security requirements, it is possible for the negative residue to become very large, for example:

An interconnector between 2 regions with a flow of 1000MW (i.e. 83MWh per trading interval)

Prices in the regions are \$10,000 and \$100 (flow from higher to lower priced region)

Negative Residue = 83MWh x (\$10,000 - \$100) = \$0.825 Million per trading interval

The residue would be limited by the cumulative price threshold being exceeded, however could reach \$0.825 Million x 90 = \$74 Million*

*Approximation only. Represents the approximate number of trading intervals for which *spot prices* could be at the *market price cap* before reaching the *cumulative price threshold*.

2.3. Negative Intra-regional Settlements Residue

Negative intra-regional settlements residues arise from the estimation of losses required in determination of settlement amounts in a region. This estimation can lead to an overall under recovery of the amount owed for energy generated in a billing period. These negative amounts are recovered from the appropriate TNSP of the region as part of the settlement of the billing period in which they occur.

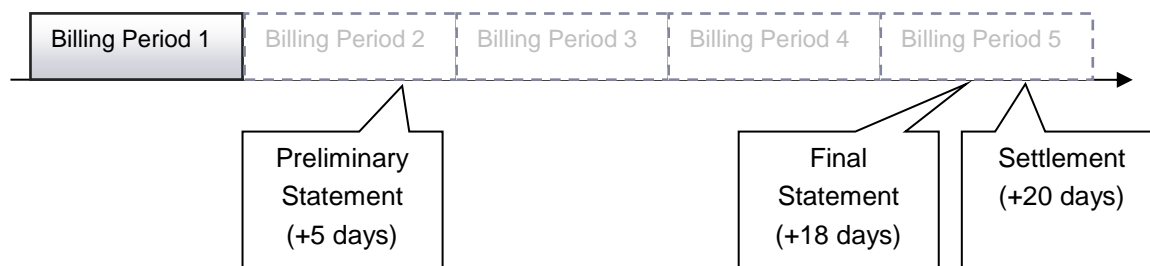
2.4. Market Participant Settlement Cycle

Participants who buy and sell energy in the *NEM* are required to settle with *AEMO* based on a weekly cycle. The amounts for each *trading interval* that lie within each *billing period* are settled on the 20th *business day* after the end of the *billing period*, as defined in clauses 3.15.16 and 3.15.17 of the *NER*.

AEMO first collects all amounts payable by *Market Participants*, and assuming no unpaid amounts, then makes payment to the relevant *Market Participants*. In the event of negative residues, the amount *AEMO* receives from *Market Participants* would be less than the amount *AEMO* has to pay to *Market Participants*. The negative residue must be recovered from TNSPs prior to *AEMO* making payment, otherwise *AEMO* would need to reduce the actual payments (shortfall) as defined by clause 3.15.22 of the *NER*.

The diagram below represents the timeline for settlement of a *billing period* (Billing Period 1):

² AEMO document "Dispatch SO_OP3705"

FIGURE 1: MARKET PARTICIPANT SETTLEMENT TIMELINE

The key milestones for a *billing period* are:

- *Preliminary Statement*
A statement issued on the 5th *business day* after the end of the *billing period*, which provides the participant with an indicative value of *settlement amounts* prior to financial transactions occurring. The amounts are calculated based on versions of metering data available at the time.
- *Final Statement*
A statement issued on the 18th *business day* after the end of the *billing period*, which is the actual amounts that are required to be settled. The amounts are calculated based on versions of metering data available at the time.
- *Settlement*
Financial transactions occur on the 20th *business day* after the end of the *billing period*, using the amounts identified in the final statement.

2.5. Requirement for this Procedure

Clauses 3.6.5(4) and 3.6.5(a)(4A) of the NER require *AEMO* to determine a payment time, interval and method for recovery of negative *settlements residue* amounts from TNSPs on a date prior to the date for settlement of *final statements*, as well as interest on any unpaid amounts.

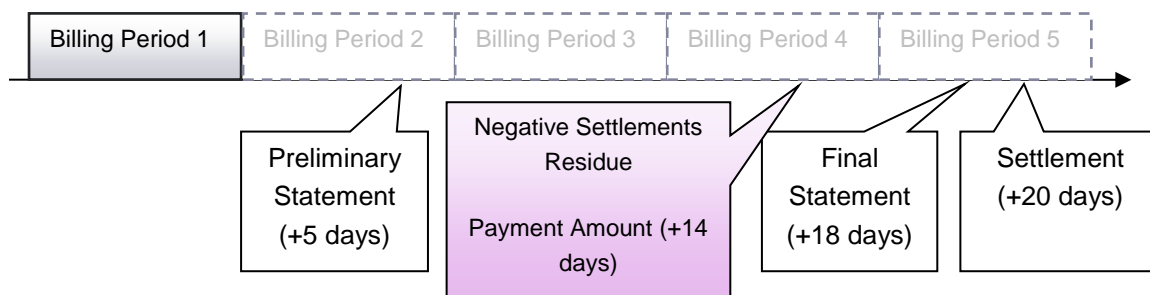
3. PAYMENT OVERVIEW

TNSPs are not required to comply with the prudential requirements of the NER, and consequently do not provide *credit support* to *AEMO*. In the event of a TNSP failing to pay *AEMO* with respect to negative residues, it is possible that *AEMO* would need to reduce the payments to participants in accordance with *Rule 3.15.22*.

To reduce the risk of shortfall in the NEM, a TNSP payment process has been determined that requires the appropriate TNSP to pay negative *inter-regional and intra-regional settlement residues* no later than the 14th *business day* after the end of the *billing period*. The amount to be paid is determined based on the total *settlement amounts* (Statement Amount) determined as part of the *preliminary statement*, which is issued on the 5th *business day* after the end of the *billing period*.

The diagram below represents the timeline for settlement by an appropriate TNSP of a *billing period* (Billing Period 1):

FIGURE 2: TNSP SETTLEMENT TIMELINE



The amount the appropriate TNSP is required to prepay (referred to as the Negative Settlements Residue Payment Amount) is the Statement Amount, where this is a negative amount and its absolute value is greater than \$100,000.

The amount to be paid early is calculated as:

Negative Settlements Residue Payment Amount

$$= -1 \times (\text{Statement Amount}) \text{ where Statement Amount} < \$100,000$$

else = zero

As part of the *preliminary statement*, a Settlement Residue Report is issued to each appropriate TNSP which specifies the Statement Amount including the amount of each negative *inter-regional settlements residue* and the amount of each *intra-regional settlements residue* for the *billing period*. A sample format is shown in the Appendix.

The appropriate TNSP is required to pay the Negative Settlements Residue Payment Amount by 4:30pm Sydney time (the nominal closing time for Austraclear) on the 14th *business day* after the end of the *billing period*. Payment must be received by AEMO in cleared funds using the normal electronic funds transfer facility (currently Austraclear).

Any funds received will be managed by AEMO in a similar way to the treatment of security deposits, which involves the following:

- AEMO will invest the funds on the TNSP's behalf, with a maturity aligned with the final settlement
- Any interest will be credited to the TNSP as part of the final settlement
- AEMO will automatically offset the funds against the final settlement amount, such that the TNSP is only required to settle the remainder.

If the appropriate TNSP fails to make payment in full of the Negative Settlements Residue Payment Amount, the TNSP will be subject to a *default event* under clause 3.15.21(a)(1). AEMO is not able to make a claim on credit support, however may issue a default notice. AEMO would co-ordinate with the TNSP to identify and resolve any issues preventing payment, and escalate the default event with TNSP management, the AER and relevant jurisdictional regulators.

Negative intra-regional settlements residues arise from the estimation of losses required in determination of settlement amounts in a region. This estimation can lead to an overall under recovery of the amount owed for energy generated in a billing period. These negative amounts are recovered from the appropriate TNSP of the region as part of the settlement of the billing period in which they occur.

4. PAYMENT PROCESS

- (a) *Transmission Network Service Providers* are required to settle with *AEMO*, in accordance with NER 3.15.16 and the payment process defined in this section.
- (b) With respect of the *billing period*, the positive and negative *inter-regional settlements residues* are calculated separately.
- (c) With respect of the *billing period* a total *intra-regional settlements residue* amount is calculated.
- (d) All other settlement amounts and adjustments arising from *revised statements* are settled with *AEMO* in accordance with clause 3.15.16.
- (e) Interest costs arising under 3.6.5(4A) will be recovered in accordance with the payment of *final statements* under clause 3.15.16.

4.1. Positive Settlements Residue

- (a) The total positive *settlements residue*, calculated as the sum of *intra-regional settlements residues* and *inter-regional settlements residues* in respect of the *billing period*, is settled with *AEMO* in accordance with clause 3.15.16.
- (b) The total positive *settlements residue* is reported in the Settlements Residue Report. A sample format is shown in the Appendix.

4.2. Negative Settlements Residue

- (a) The total negative *settlements residue*, calculated as the sum of *intra-regional settlements residues* and *inter-regional settlements residues* in respect of the *billing period*, is settled in accordance with the Negative Settlements Residue Payment Methodology defined in section 8.3.

4.3. Negative Settlements Residue Payment Methodology

- (a) *AEMO* will issue a *preliminary statement* in accordance with clause 3.15.14. Provided with this statement will be a Settlements Residue Report, which details the amount of negative *inter-regional settlements residue* and any *intra-regional settlements residue*. A sample format is shown in the Appendix.
- (b) The Negative Settlements Residue Payment Amount is calculated as:
 - 1 x (Statement Amount) where Statement Amount < \$100,000
 - else zero.
- (c) Where the Negative Settlements Residue Payment Amount is other than zero, the appropriate TNSP must make a payment to *AEMO* of the Negative Settlements Residue Payment Amount.
- (d) Payment by the appropriate TNSP must be made using the electronic funds transfer facility established by *AEMO* under clause 3.15.2.
- (e) Payment appropriate must be made in cleared funds before 4:30pm Sydney time on the 14th *business day* after the end of the *billing period*.

4.4. Negative Settlements Residue Payment management

- (a) Where a Negative Settlements Residue Payment Amount has been received, *AEMO* will manage these funds as a security deposit in accordance with rule 1.11. The funds will only be invested with financial institutions that are under the prudential supervision of the Australian Prudential Regulation Authority.
- (b) Any income derived from the management of the Negative Settlements Residue Payment Amount will be credited to the TNSP.
- (c) The Negative Settlements Residue Payment Amount will be automatically applied by *AEMO* with respect to the relevant *billing period*.
- (d) The TNSP is not required to provide any notices or reach agreement with *AEMO* in respect of the security deposit, as would otherwise be necessary for a *Market Participant* in accordance with clause 3.3.13A.

5. PRUDENTIAL SUPERVISION PROCESS

5.1. Defaulted Negative Settlements Residue Payment

- (a) If an appropriate TNSP is required to make payment under Section 4.3, but payment is not made by the required time, the TNSP is subject to a default event under NER 3.15.21(a)(1).
- (b) Where a TNSP is subject to a *default event* due to non-payment, *AEMO* may take any or all the following actions in addition to any actions that may be taken under clause 3.15.21:
 - (i) Co-ordinate and escalate the matter with the TNSP to achieve payment.
 - (ii) Issue a *default notice* under clause 3.15.21(b)(1).
 - (iii) Notify the *AER* of the *default event* and/or the issue of a *default notice*.
 - (iv) Notify the relevant jurisdictional regulator of the *default event* and/or the issue of a *default notice*.

APPENDIX A. SAMPLE EXTRACT OF SETTLEMENTS RESIDUE REPORT

FINAL Settlements ref 2009/036/004/SAMPLE		

Week Number 36 from 30-Aug-2009 to 05-Sep-2009		

Intra-Regional Residue		
For Region REG1	\$100,000.00	
Participant Portion	100.00%	
Payment		\$100,000.00
Inter-Regional Residue allocated by Jurisdictional Derogation		
For Inter-Connector INTERCON1 Flowing from REG1		\$200.00
For Inter-Connector INTERCON2 Flowing from REG2		\$300.00
Negative Residue Amounts		
For Inter-Connector INTERCON1 Flowing from REG1		-\$400.00
For Inter-Connector INTERCON2 Flowing from REG2		-\$50,000.00
SRA Amounts		
For Inter-Connector INTERCON1 Flowing from REG1 Quarter 3		\$600.00
Auction Fees		-\$70.00
Payment		\$530.00
For Inter-Connector INTERCON2 Flowing from REG1 Quarter 3		\$8,000.00
Auction Fees		-\$900.00
Payment		\$7,100.00

Total Residue Allocated		\$57,230.00