AEMC

INFORMATION

Inter-regional settlements residue arrangements for transmission loops

The Commission is seeking stakeholder feedback on a proposal to allocate inter-regional settlements residue (IRSR) in transmission loops

The Commission has released a consultation paper that seeks stakeholder feedback on how IRSR should be allocated in transmission loops.

The Australian Energy Market Operator (AEMO) has submitted a rule change request seeking to create a new method for allocating IRSR within transmission loops. AEMO's rule change request aims to create market arrangements for transmission loops that help realise the benefits of transmission infrastructure for consumers, while also aligning the costs of loop flows with the beneficiaries.

Project EnergyConnect will create the first inter-regional transmission loop in the NEM

Project EnergyConnect Stage 2 (PEC) will be a new interconnector linking South Australia and NSW and will be fully operational in early 2027. PEC will create the first inter-regional transmission loop in the NEM, along with the existing Heywood (VIC-SA) and VNI (NSW-VIC) interconnectors.

Transmission infrastructure is a critical enabler of new low-cost generation and for the transition to net zero. PEC will help facilitate the transition by enabling future renewable projects to connect to the grid and supply energy into the network.

Inter-regional transmission loops are likely to cause more frequent negative IRSR

IRSR is a surplus or deficit in the settlement outcomes of the electricity market, and it arises when electricity flows across regions with difference prices. Under the current rules, negative IRSR is allocated to the importing region, and AEMO limits negative IRSR by applying clamping constraints. Positive IRSR is auctioned, with auction proceeds allocated to the importing region.

When these allocation arrangements were put in place, negative IRSR was expected to be infrequent. However, in inter-regional transmission loops, IRSR is expected to arise more frequently than it does across 'radial' interconnectors (that is, the current regulated interconnectors that link two regions without forming part of an inter-regional transmission loop). This is due to the way that power flows in a transmission loop, and how this interacts with the NEM's regional pricing model. AEMO has recently commissioned modelling which forecasts this result.

There are two parts of the arrangements that give rise to how the problem is considered: clamping (managed under AEMO procedures and not necessitating a rule change) and the allocation of IRSR (managed pursuant to the rules).

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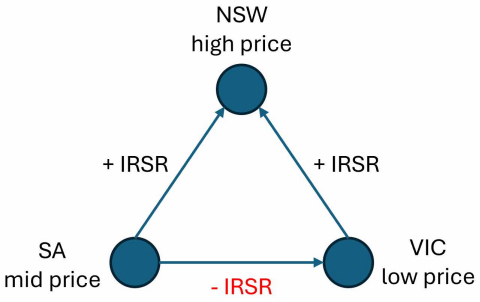
AEMO considers it would not be efficient to clamp negative IRSR at all times in a transmission loop. This is because negative IRSR is often expected to arise on individual arms of the loop when net IRSR overall around the loop is positive, as shown below. AEMO considers that in these circumstances, clamping negative IRSR would reduce the benefits of the new interconnector. However, not clamping negative residues in these circumstances is likely to lead to higher magnitudes of negative residues.



If the sum of the positive IRSR on the SA-NSW and NSW-VIC arms is greater than the negative IRSR on SA-VIC, then the net IRSR for the loop is positive.

Note: This is an illustrative example only and negative IRSR can occur on any arm of the loop.

AEMO proposes to reallocate negative IRSR to regions receiving positive IRSR in a transmission loop

Under the current allocation approach, all negative IRSR arising on loop interconnectors would be allocated to the importing region. AEMO considers that this allocation approach would result in an unfair distribution of IRSR in transmission loops, because it would assign all costs (i.e. negative IRSR) to some regions, which does not reflect the broader benefits of the loop flow (i.e. the positive IRSR). AEMO therefore considers that negative IRSR should be reallocated when the net IRSR of the loop is positive.

Instead of the current approach, AEMO proposes that the allocation of IRSR in a transmission loop would depend on the net overall IRSR on the loop:

- When overall loop IRSR is positive, AEMO proposes not to clamp any negative IRSR within the loop. AEMO's proposed rule would allocate negative IRSR arising on one or more directional interconnectors of the loop to directional interconnectors that are receiving positive residues.
- When net overall IRSR is negative, AEMO proposes to apply the current approach. Individual interconnectors would be clamped when they reach a certain threshold to manage negative IRSR, and IRSR would be allocated to the importing region.

The proposed rule change is designed to integrate PEC into the NEM. However, any new rule would apply to all future inter-regional transmission loops in the NEM.

We are interested in stakeholder views on the issues raised in the rule change request, the proposed solution and alternative solutions.

Next steps

The AEMC requests submissions to the consultation paper by 5 September 2024. We will publish a draft determination for the rule change on 12 December 2024.

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