Scale Efficient Network Extensions

Background and issues this Rule change is seeking to address

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Purpose of this presentation

- Outline the background to this Rule change request
- Highlight the key issues this Rule change is seeking to address
- Clarify the objective of SENEs
- Summarise the proposed Rule change
- Discuss some of the challenges in implementing the proposed frameworks

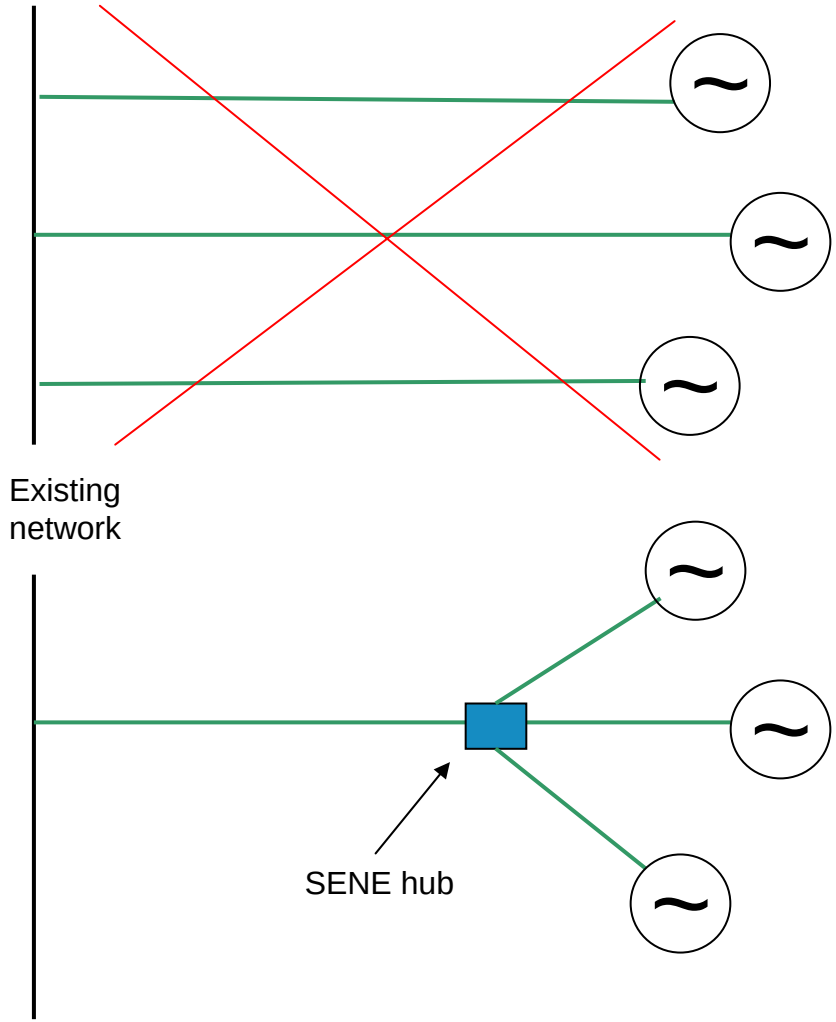
Background to this Rule change request

Review of Energy Market Frameworks in light of Climate Change Policies: findings

- The MCE requested the AEMC conduct a review of energy market frameworks in light of climate change policies
- Patterns of generation investment are changing
- Existing frameworks require strengthening to manage these changes

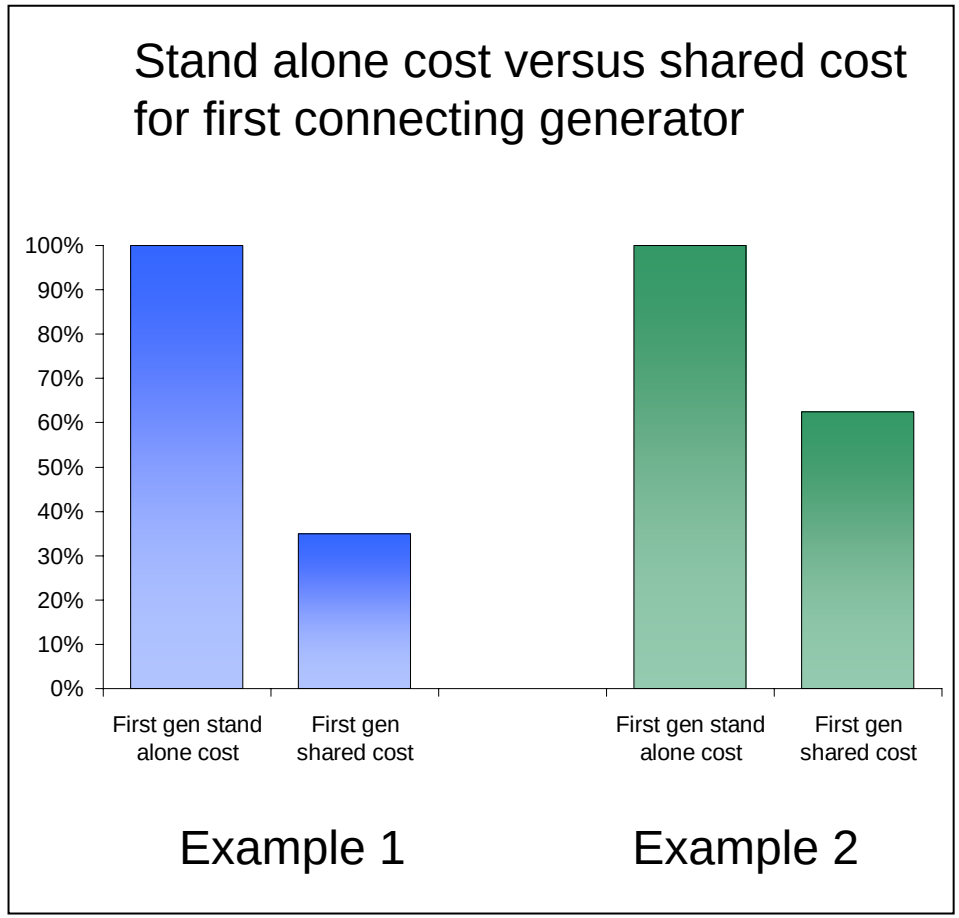
Review of Energy Market Frameworks in light of Climate Change Policies: recommendations

- A new framework to promote the efficient connection of clusters of new generation in proximate locations over time: SENEs
- Provides a mechanism to allow forward looking network investment for generation connection
- Generators pay an average cost charge for use of the SENE
- Requires customers to underwrite the risk of asset stranding



Illustrative examples of opportunities for scale efficiencies

- Magnitude of efficiency gains depend on :
  - number and volume of gens
  - geographical spread of gens
  - distance from shared network
- *Example 1*: Coordinating connections for 4 generators over 35km of line would save a total of $12m Citipower/Powercor
- *Example 2*: coordinating connection of 2000 MW of generation would save the first connecting 500 MW generator $75m Grid Australia



The SENE Rule change request

- MCE endorsed the recommendation and submitted a Rule change request
- MCE considered the proposal should promote the NEO by:
  - overcoming the risk of inefficient asset duplication
  - ensuring efficient assets are built
  - minimising risk to consumers

Consultation on this Rule change to date

- 28 submissions, 2 supplementary submissions received on the Consultation Paper
- A shift away from more widespread support for SENEs
- Still some need for change
- Concerns with the proposed Rule:
  - level of risk imposed on customers
  - complexity of the proposed Rule
  - implications for competitive neutrality between generators

Interaction of this Rule change with the TFR

- MCE has directed the AEMC to conduct a review of transmission frameworks
- The scope of SENEs and the TFR may overlap
- The AEMC has decided to progress the SENEs Rule change independently
- However, the scope of the TFR will be a consideration in considering any potential Rule change to accommodate SENEs

Nature of the problem

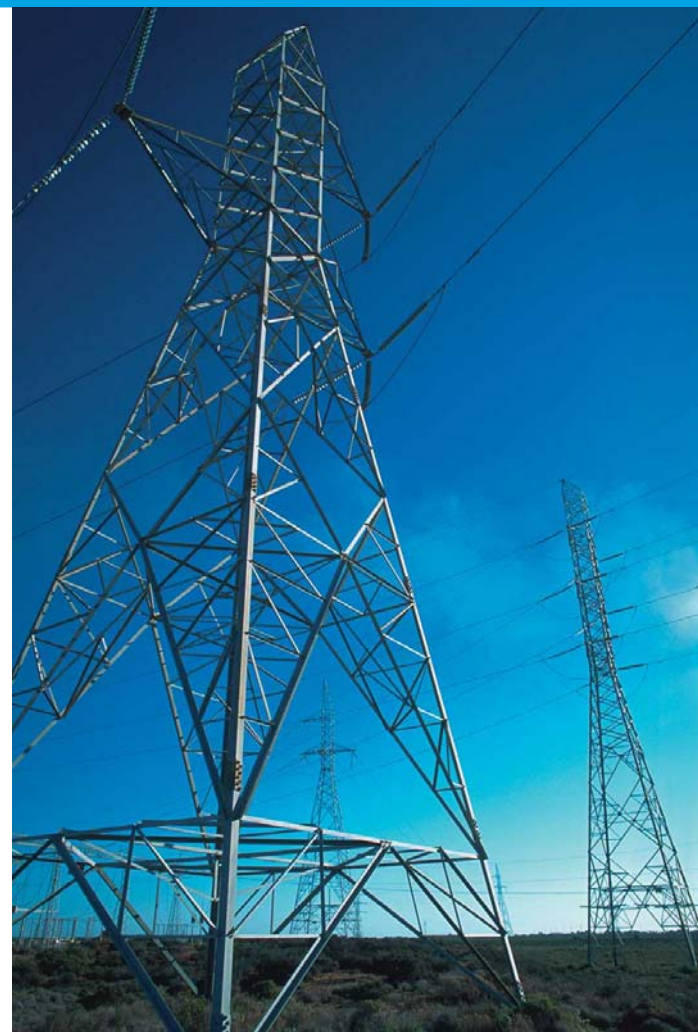
Issues this Rule change is seeking to address

Patterns of generation investment are changing

- The scale of generation investment is changing
- New technologies have different characteristics from past generation investment:
  - relatively small compared to “lumpy” network investment for connection
  - some low cost sources of generation are remote from existing networks
- New generation may be clustered and seek connection over a period of time

Connecting new types of generation is challenging

- The economies of scale in network investment imply coordinating generation connection will lower total system costs
- Achieving efficient connection outcomes is challenging because:
  - coordination challenges
  - the temporal nature of the problem
  - managing the risk of stranded assets
- Achieving optimal investment outcomes requires an entity to bear the asset stranding risk



Connecting new types of generation is challenging

- The existing arrangements are unlikely to allow efficient outcomes for new patterns of generation
- No entity has an incentive to provide forward looking investment for connections
  - The existing frameworks do not encourage or reward speculative building of network assets
- This may lead to inefficient outcomes, including:
  - duplication of network assets
  - delays in connection

Objective of SENEs

The purpose of this Rule change request

To allow the efficient connection of multiple generators with multiple owners in proximate areas over time and to charge an efficient price for that service

Summary of the Rule change request

The proposed Rule change

Trigger for considering a SENE

- AEMO to identify *possible* SENE zones in its annual NTNDP
- NSPs to identify credible options in their APR or on their website

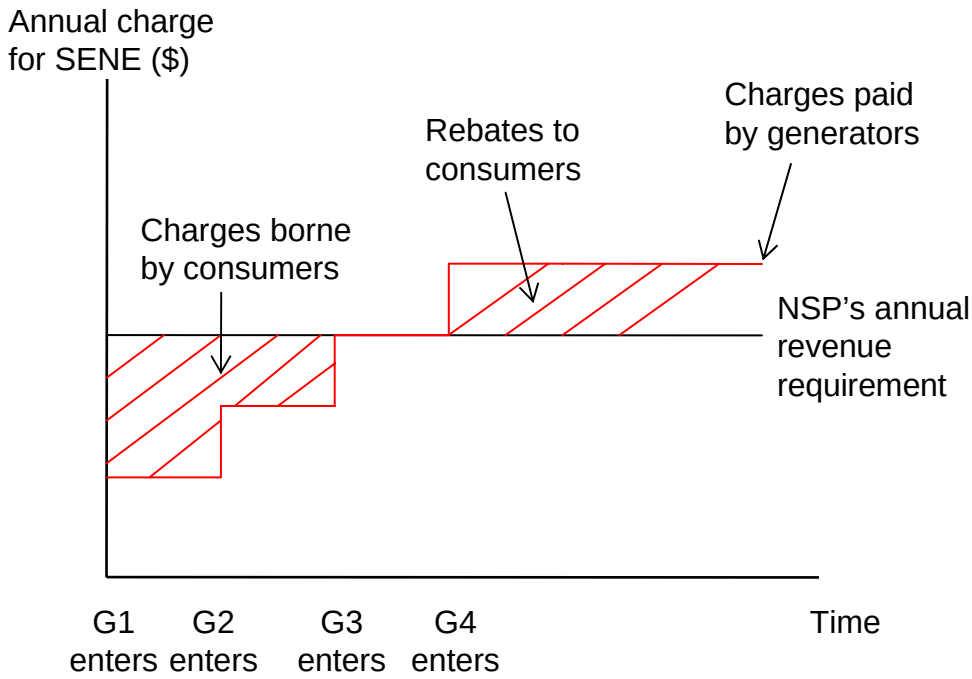
Investment test

- NSPs to consider opportunities for scale efficiencies and, if so, publish:
  - Planning report
  - Standard connection offer
- Construction of the SENE triggered by connection agreement with at least one generator

The proposed Rule change

Cost allocation and charging methodology

- Generators pay an average cost charge for use of the SENE
- Customers underwrite any remaining costs



The shaded areas will be equal if generation connects as expected

The proposed Rule change

Access provisions

- Generators are entitled to compensation where constrained off by another generator

Regulatory oversight

- AER prepares guidelines
- AER has the ability to veto the connection offer
- Forecasts to be reviewed by AEMO
- A policy review to be undertaken by the AEMC 5 years after commencement

Challenges in implementing SENEs

Implementation challenges

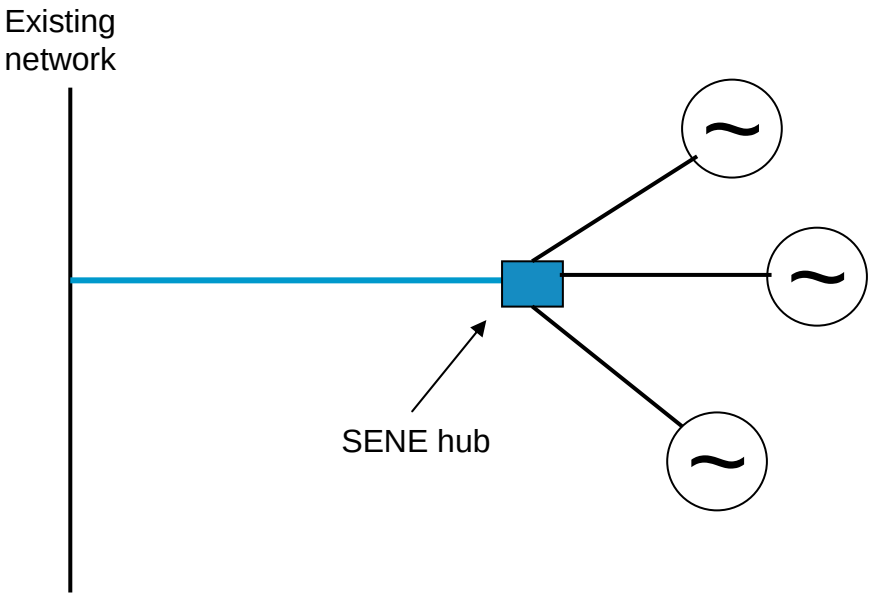
- The existing connections framework was developed to meet historical requirements
- We now seek to allow different types of generation to connect using shared assets
- SENEs, as proposed, do not fit naturally within existing frameworks
- This creates additional complexity for any SENEs framework

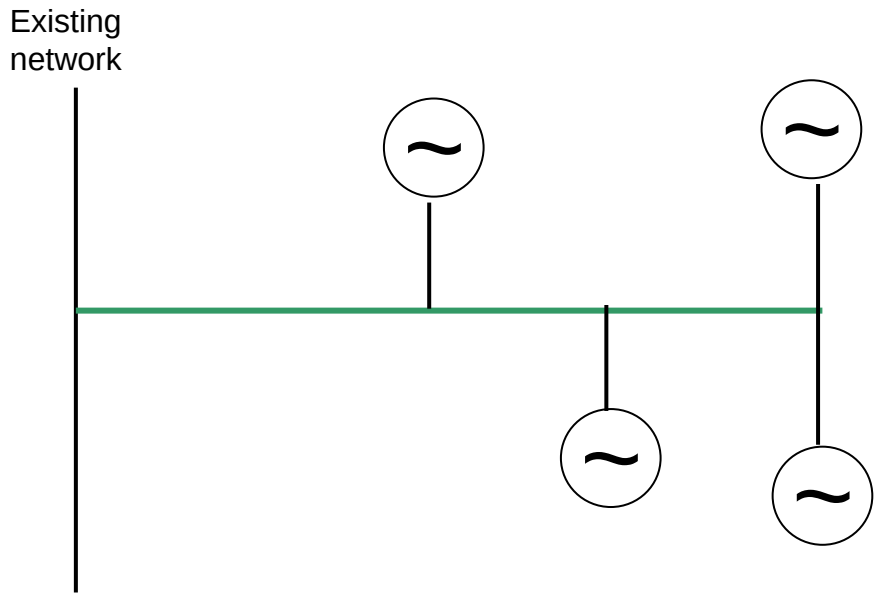
Implementation challenges – examples from proposed framework

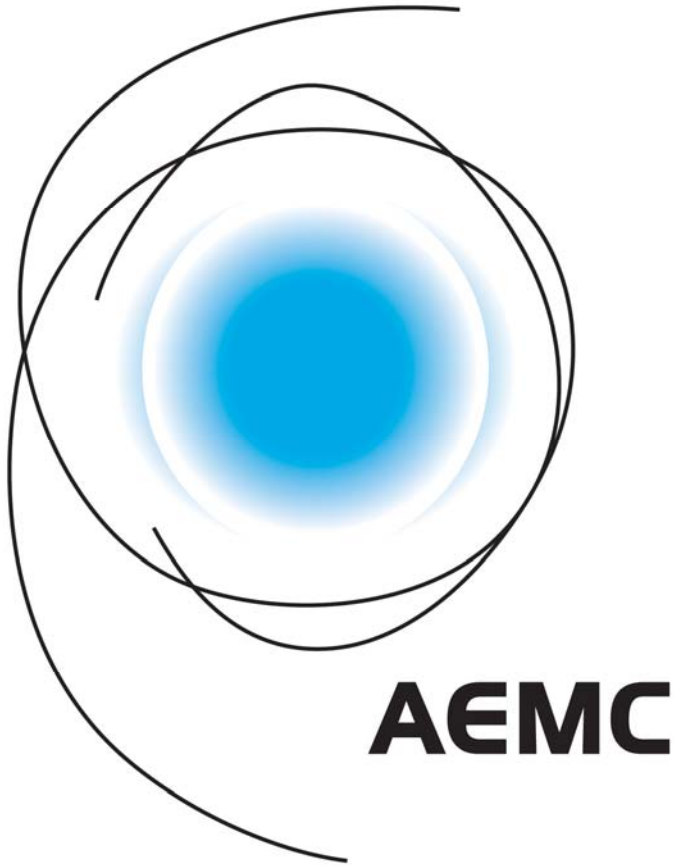
- Connection assets are typically funded by generators, but SENEs require initial customer funding to allow forward looking investment
- The Rules do not envisage assets that were once funded by customers subsequently being funded by generators
- The proposed Rule defines a SENE as being part of the network but it is treated differently from the remainder of the network

Implementation challenges – a single framework for many different configurations

Every SENE is likely to be unique



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