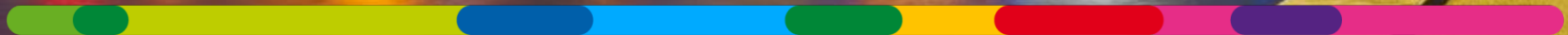

Five minute settlement
Proposed transition



Chris Deague
Wholesale Regulations Manager



Transition challenges noted by AEMC

- Disruption to wholesale contract markets
 - cost of contract renegotiation to accommodate five minute settlement (one-off)
 - reduction in cap contracts – price effects to consumers (ongoing)
- Metering and IT system adaptation costs (one-off)

AEMC propose transition must therefore allow:

- Expiry of existing contracts and negotiation of new contracts
- Existing and new gens to address expected cap shortage
- Metering upgrades as part of routine maintenance or replacement
- Normal IT system development to minimise disruption cost

AEMC Suggested transition timeframe

- Stage A – 3 year period:
 - Upgrade type 1,2 & 3 meters
 - Implement IT upgrades
 - Legacy contracts roll off / new contracts established
- Stage B – subsequent 2 year period:
 - Upgrade type 4 & remotely read type 5 meters

Total transition timeframe of 5 years

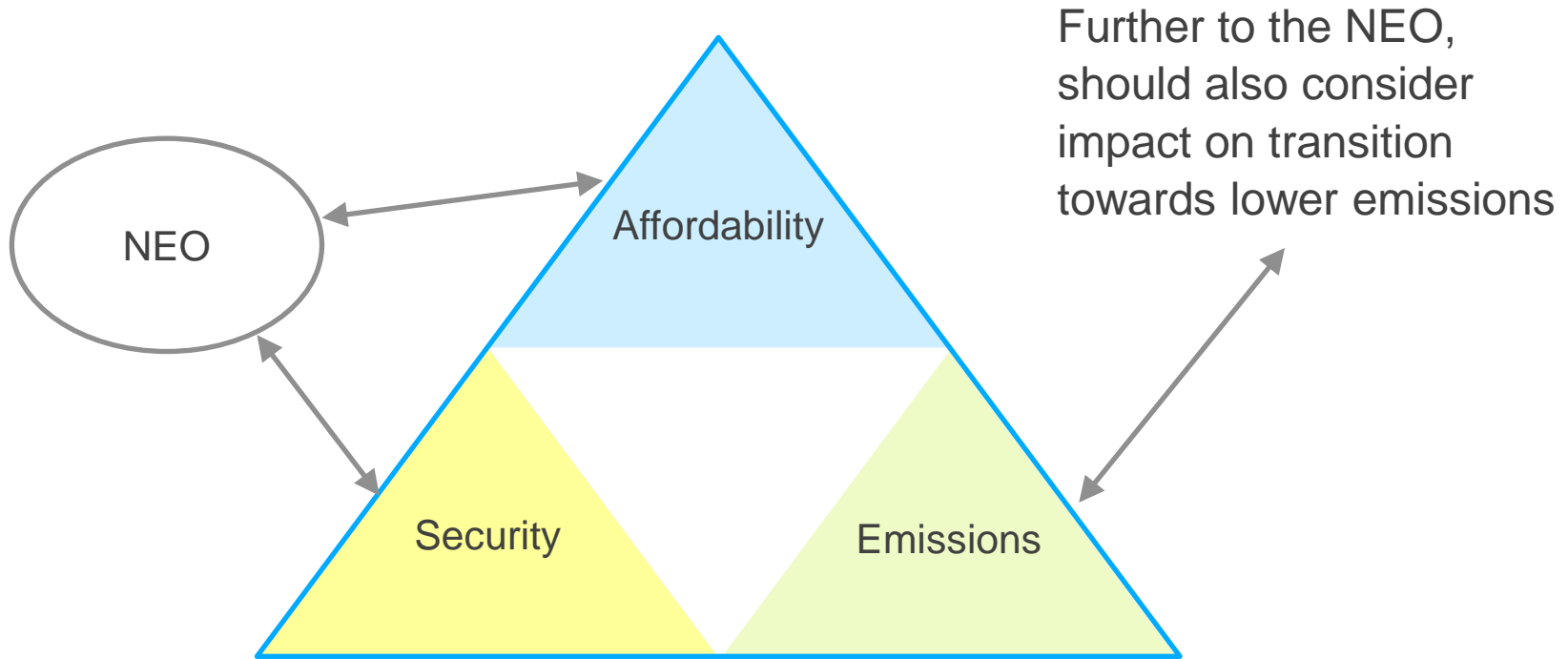
Five year transition

- Need to ensure NEO objectives are advanced (or at least maintained):
 - When the rule changes are fully implemented, and
 - During the transitional period
- Cannot expect consumers to endure higher costs or inferior security during transition period

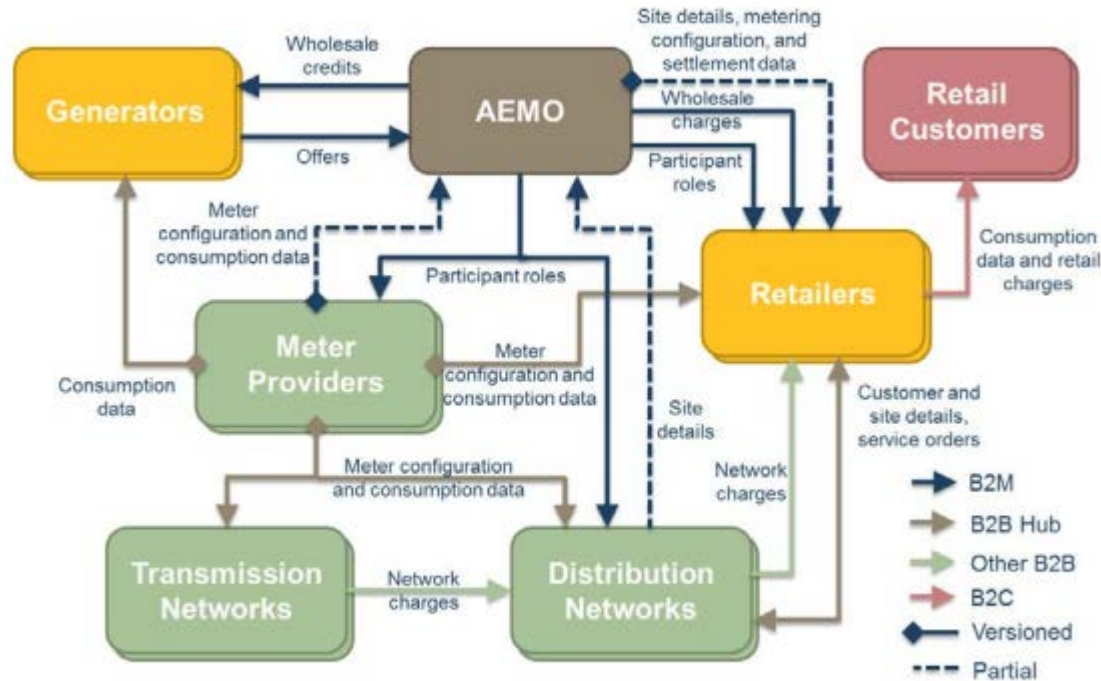
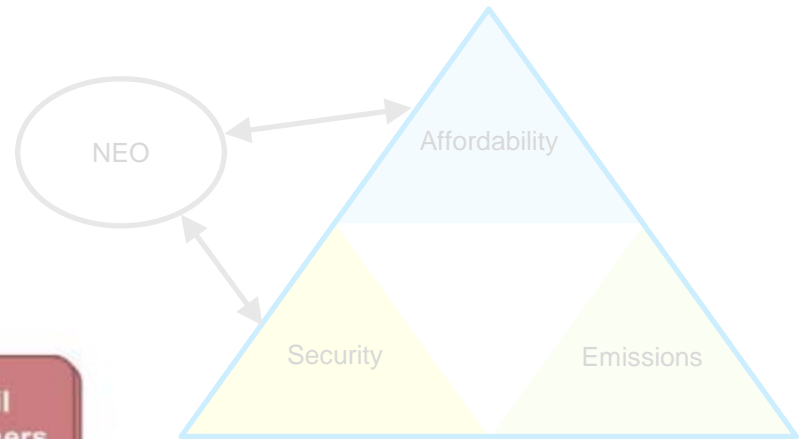
Additional challenges

- PPA's by wind and solar typically agreed out to 2030 (end of the RET)
- Transition period should accommodate these longer term agreements – EG:
 - OTC period: 3 years
 - PPA period: 13 years } Average: 8 years

Energy trilemma during transition



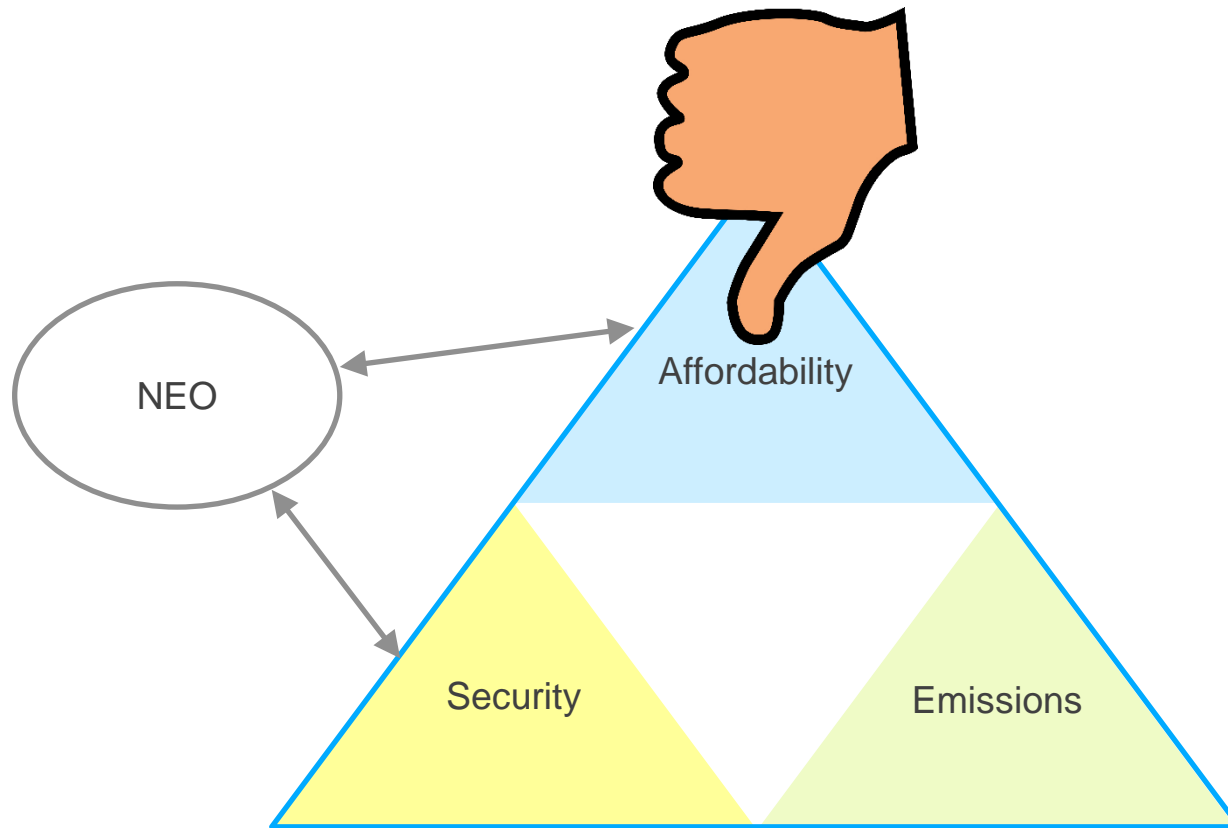
Affordability



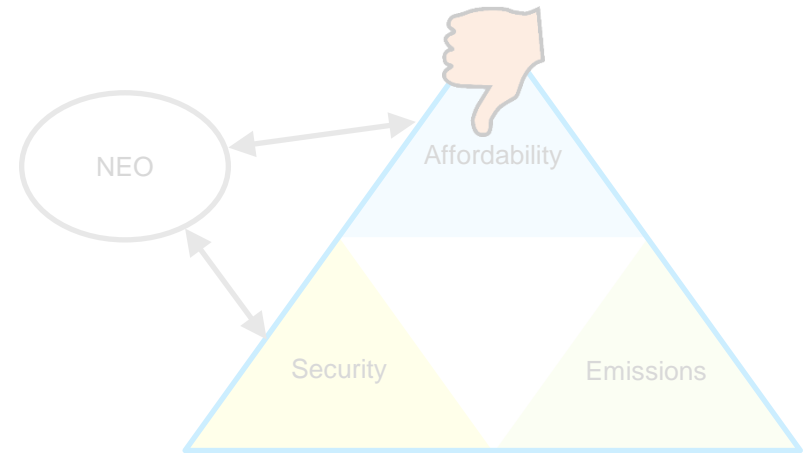
Source: AEMO.

- Dispatch, settlement and metering systems are fundamental and complex
- Cannot provide specific cost estimates - detailed design not known
- Participants and AEMO costs will be substantial – and will be borne by consumers

Affordability



Security



Energy Edge Report Findings - OCGT:

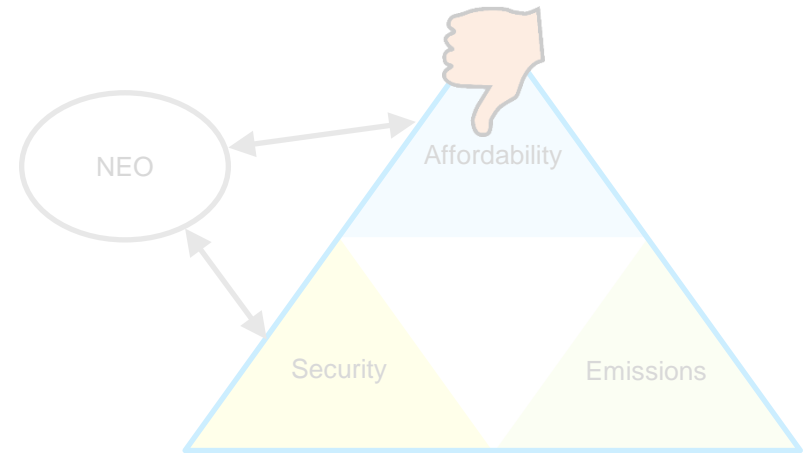
- OCGT response concerns:

- majority of price spikes in 2015-17 were isolated events
- 5 minutes pre-dispatch highly inaccurate - most high price events are unanticipated

- Under 5 min settlement:

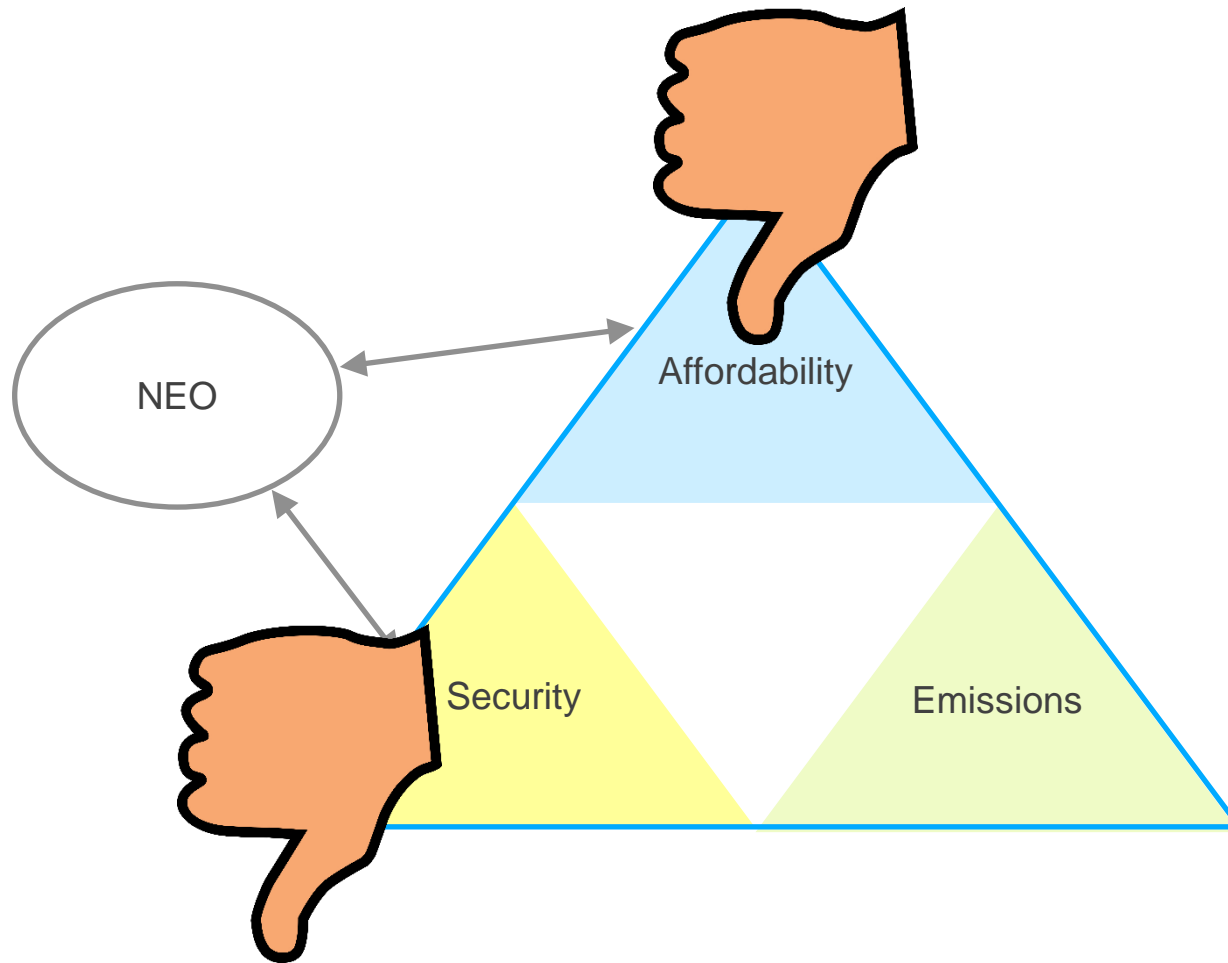
- OCGTs respond to price spikes only if expected to be longer than 5 min - capacity factor will decrease
- natural supply of caps would decrease by ~625 MW (large proportion in SA)
- OCGT can cover ~75% of its capacity as a cap: 625 MW caps = 830 MW physical
- EE note that the reduction in caps could be materially greater than 625 MW

Security (cont)



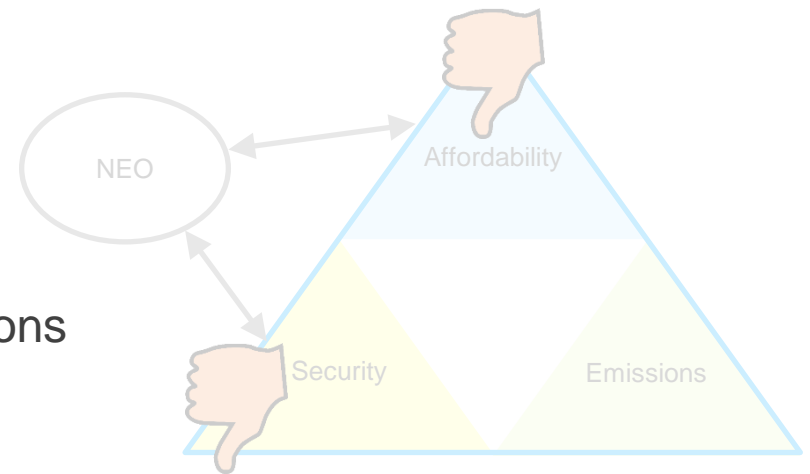
- OCGT's that cannot defend caps will struggle to survive in energy only market
- AEMC suggestion that existing OCGTs can adapt and provide faster synchronisation time seems unrealistic
- Existing OCGT generators likely to exit the NEM in the short term
- New technology not likely to be viable alternative in short term

Security

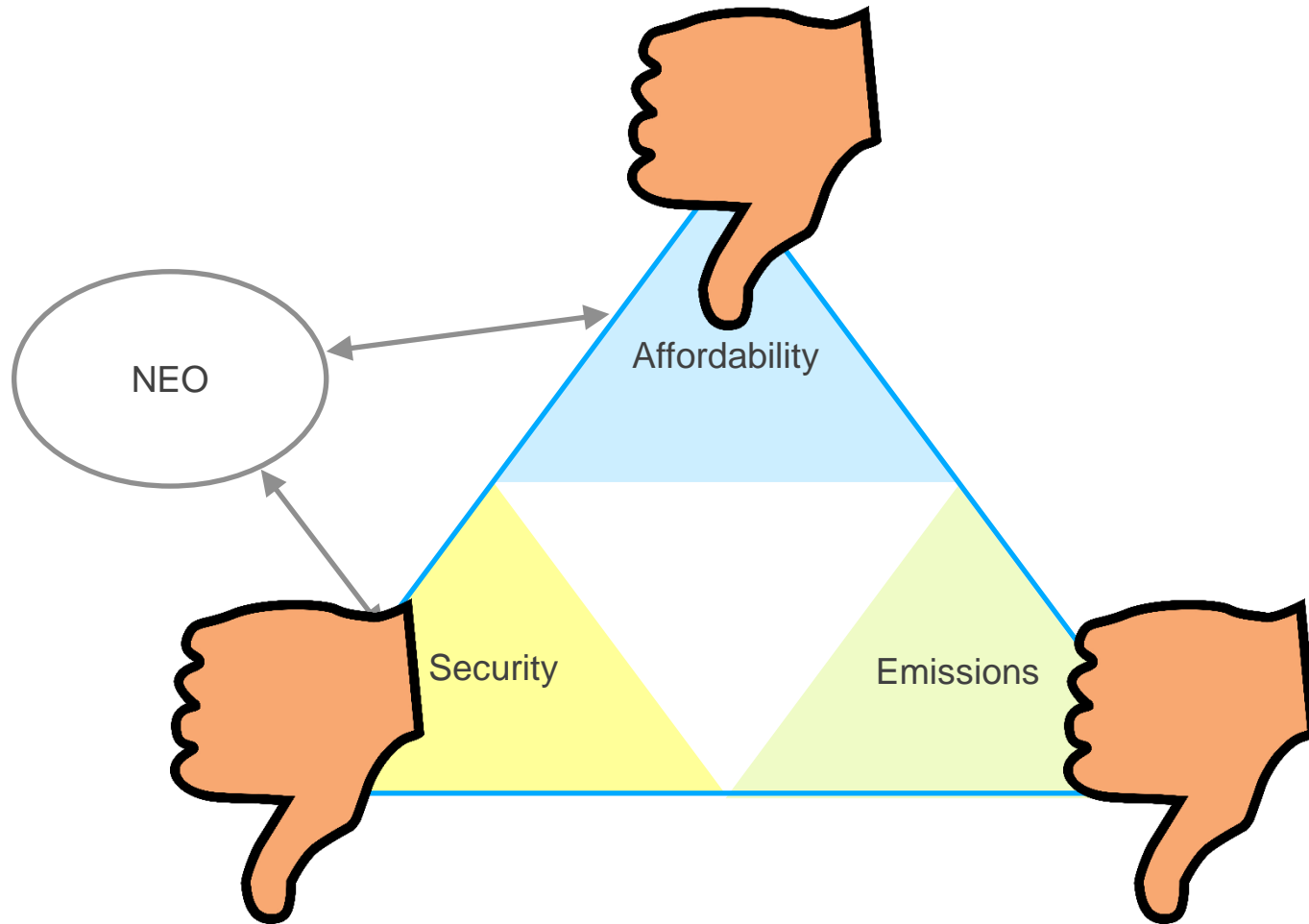


Emissions

- Gas seen as the transition fuel to low emissions
- Change that de-values OCGT will result in increased coal generation
- Increased coal generation does not facilitate transition to lower emissions



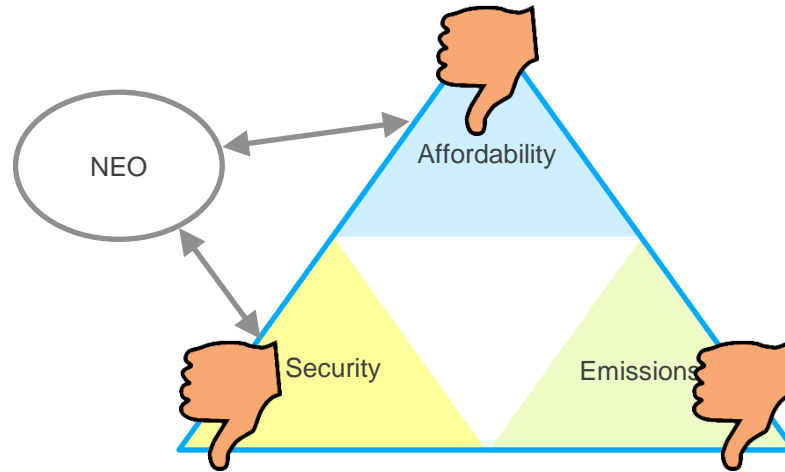
Emissions transition



Transition to 5 minute settlement ...

will be detrimental to

- Affordability
- Security
- Emissions



(But otherwise, is OK)

Thank you



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