

IEGA

INDEPENDENT ELECTRICITY
GENERATORS ASSOCIATION

Presentation to Market Development Advisory Group

26 August 2021



Introduction



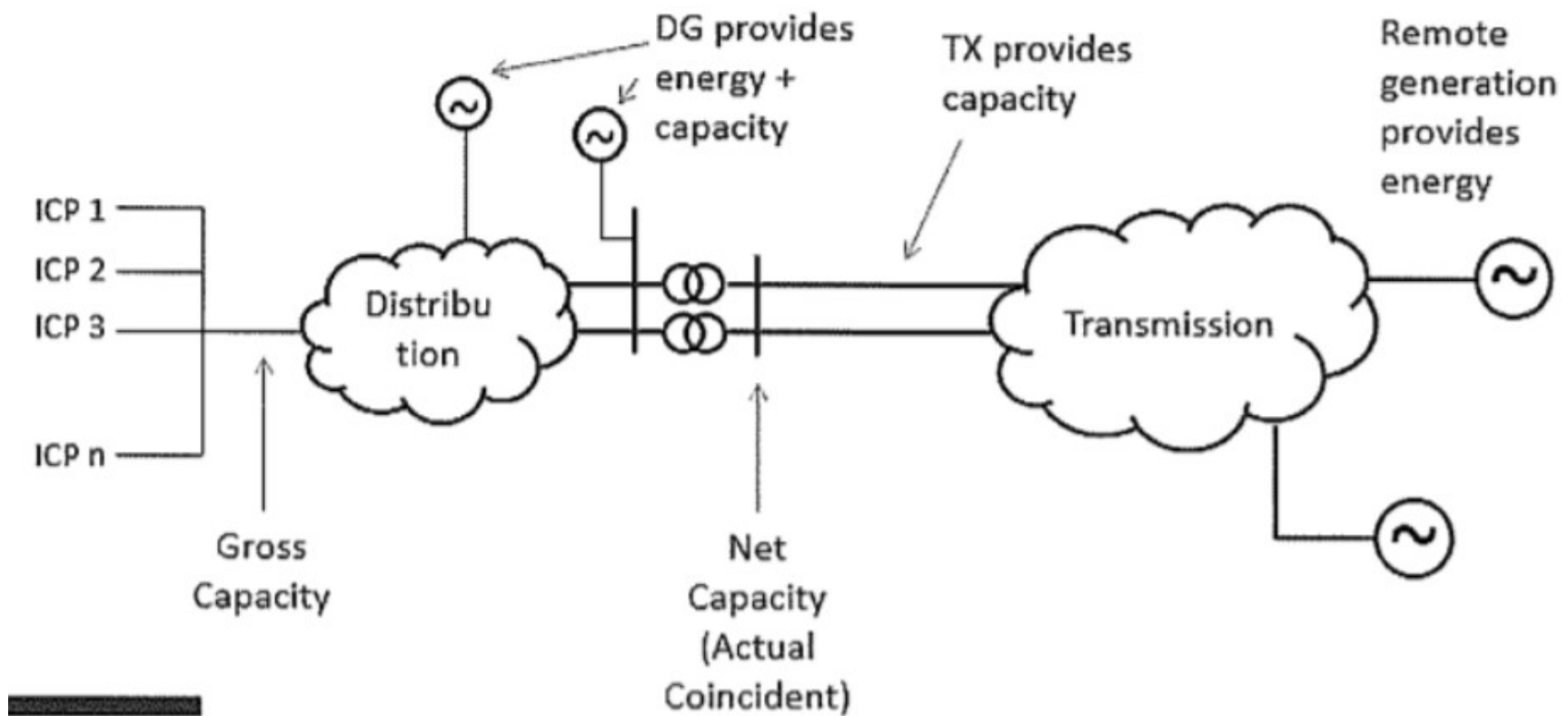
- We are Generators
 - majority are not retailers of electricity
- Represent the SME part of the electricity generation sector
 - owning ~200MW of renewable generation plant
- Commercial small-scale distributed generation
 - range from 500kW to 30MW plant
 - range of members: Pioneer Energy, King Country Energy, Pupu Hydro Society
 - not 'behind-the meter' – generally wholesale
- Some have contracted their generation output through PPA
 - so not impacted by spot prices
- Economically efficient new generation opportunities identified
- Members have commissioned 3 hydro plant in the last 3 years as well as investing in refurbishment of existing plant
- Support decarbonisation of the NZ economy

Role in the supply of electricity

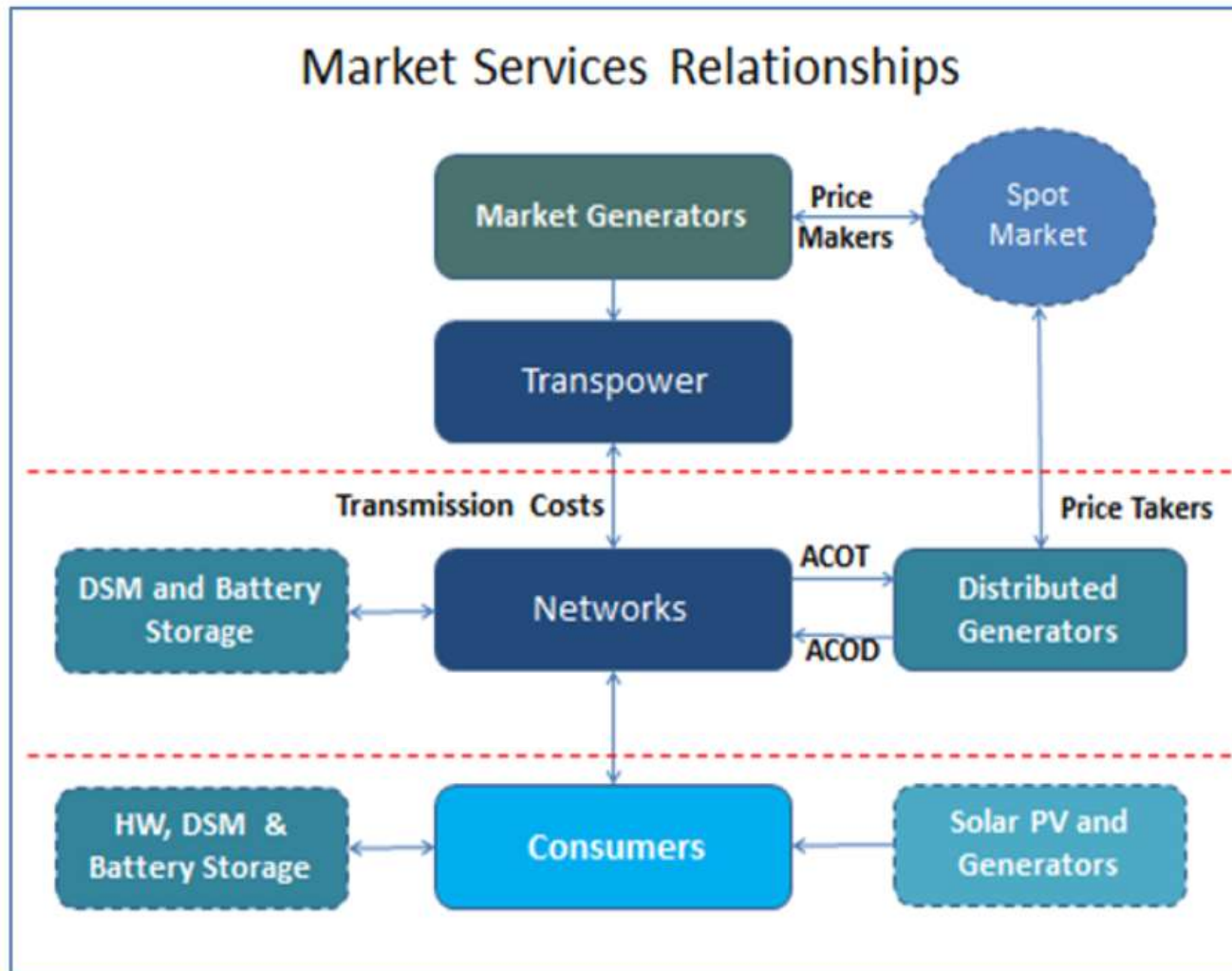


- Supply electricity close to load
 - saving 5%+ electricity losses by generating at demand
- Distributed generation or decentralised energy internationally expected to play an important role in decarbonisation
 - significant renewable resource available throughout NZ
 - incremental size more closely matched to demand growth
 - smaller environmental impact
 - local benefits engender local support
 - avoids or defers investment in transmission and distribution
 - 80% of existing distributed generation is required for Transpower to meet n-1 reliability standard to serve winter peak demand

Position in the electricity supply



Relationship to the wholesale market



Outlook under 100% renewables



Problem 1: Volatile spot prices result in volatile / unbankable generation revenue for funding existing capacity and new investment

Anticipating:

- High intermittent supply = low / negative prices over day / week / month
- Low intermittent supply = high prices
 - Unpredictable high prices over a day; might be solved by battery storage
 - Over a week / month / season solved by: TBC

Implications for IEGA:

- Price-takers in the spot market
 - Members do not have the human or financial resource to operate a 24/7 trading desk
 - Difficult to plan for unpredictable high prices so run to gain average price
- Some limited intra- and inter-day storage

Solutions:

- Support more sophistication in hedge market and PPAs
- Support measures to reduce price volatility / provide stability

Outlook under 100% renewables



Problem 2: Volatile spot prices impacts affordability for consumers and social license to operate for all electricity participants

Implications for IEGA:

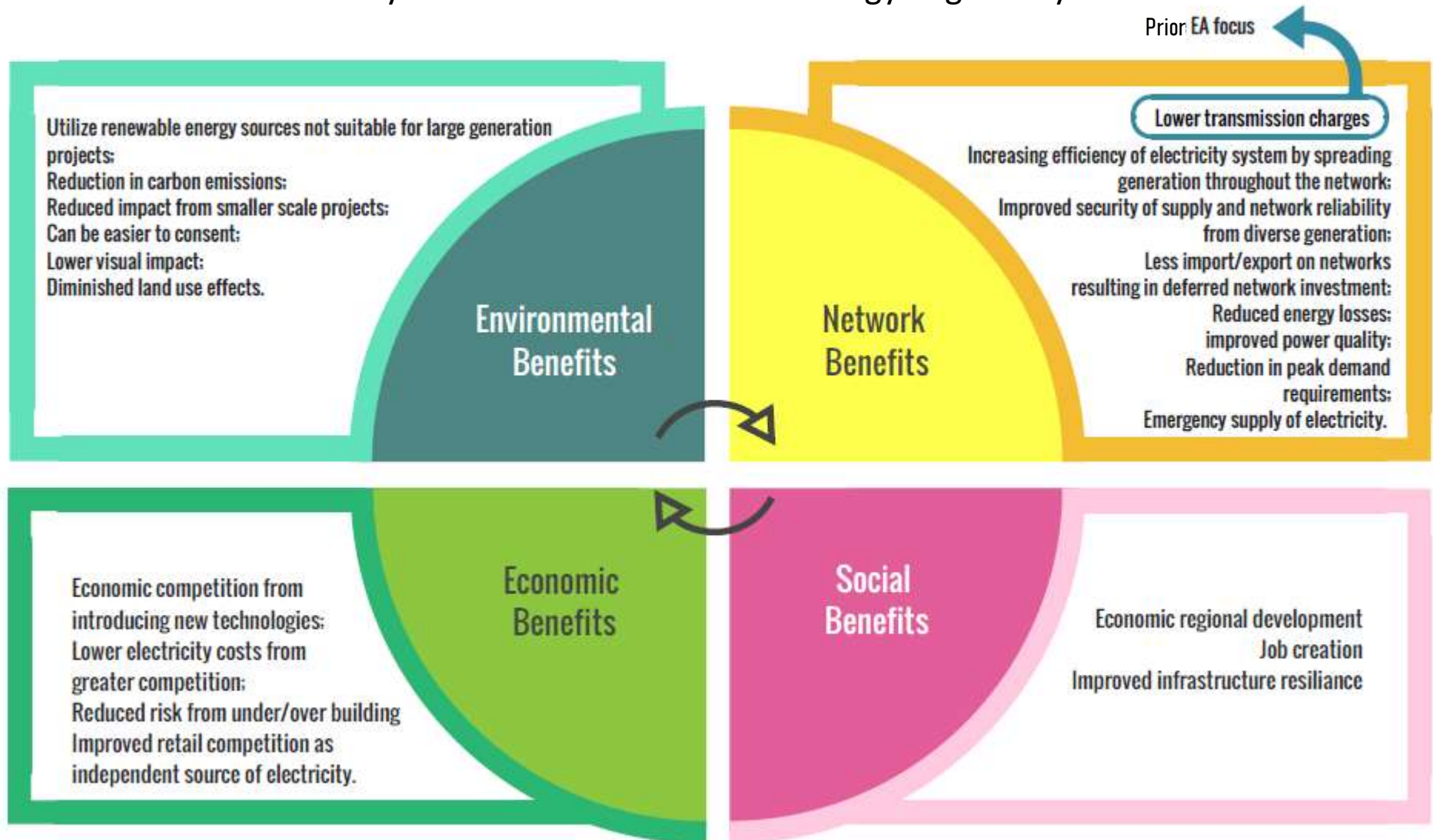
- Difficult for members to consent new renewable generation capacity when we haven't contributed to the problem / have no influence over spot prices

Other issues:

- Limited value in members offering ancillary services currently
- Managed transition and transparency of government intentions are important for everyone
- Potential for consumer demand response is some way off
- Keen to engage in any transmission or distribution non-network solutions

Benefits of distributed generation

Identified by the United States Federal Energy Regulatory Commission



Agencies involved: Commerce Commission, Electricity Authority, MBIE, MfE, Treasury, Transpower, Callaghan Innovation Regional and Local Councils