

# Network charging: embedded generation

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Policy Officer



The Association for  
Decentralised Energy

**ade**

Bringing Energy  
Together

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Combined Heat & Power  
District Heating & Cooling  
Demand Side Services

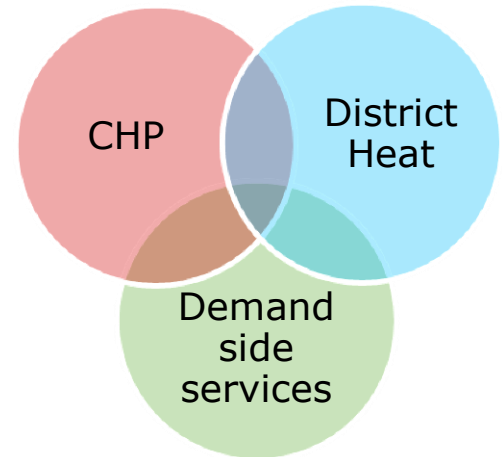
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# ADE vision

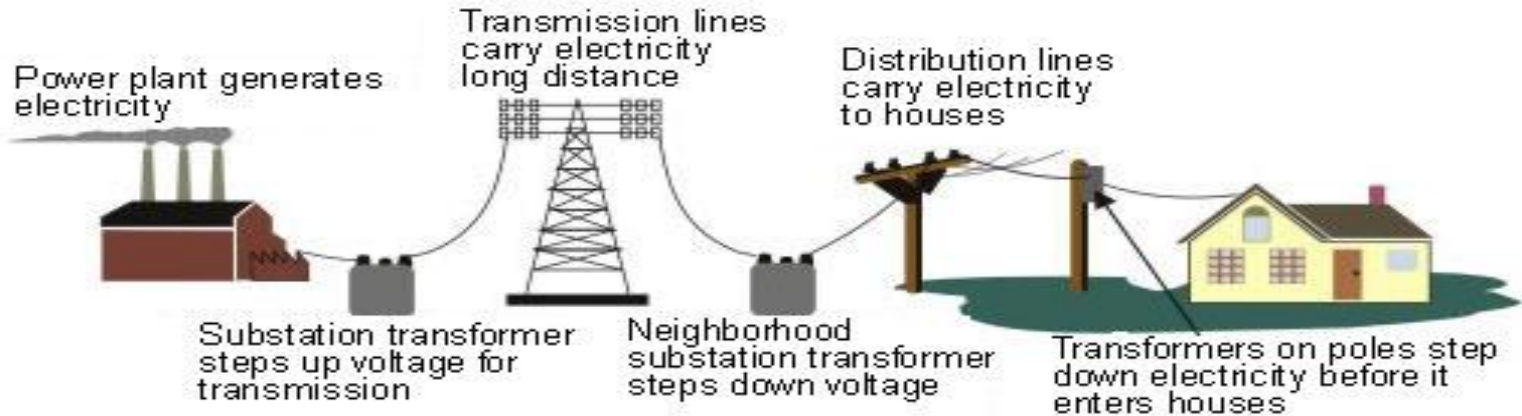
*The voice for a cost effective efficient, low carbon, user-led energy system; a market in which decentralised energy can flourish*

- ⊙ Areas of focus:
  - ⊙ Combined heat and power
  - ⊙ District heating and cooling
  - ⊙ Demand side energy services



# What is embedded generation?

- ◎ Embedded generation, which includes storage, refers to power generation that is directly connected to a Distribution Network

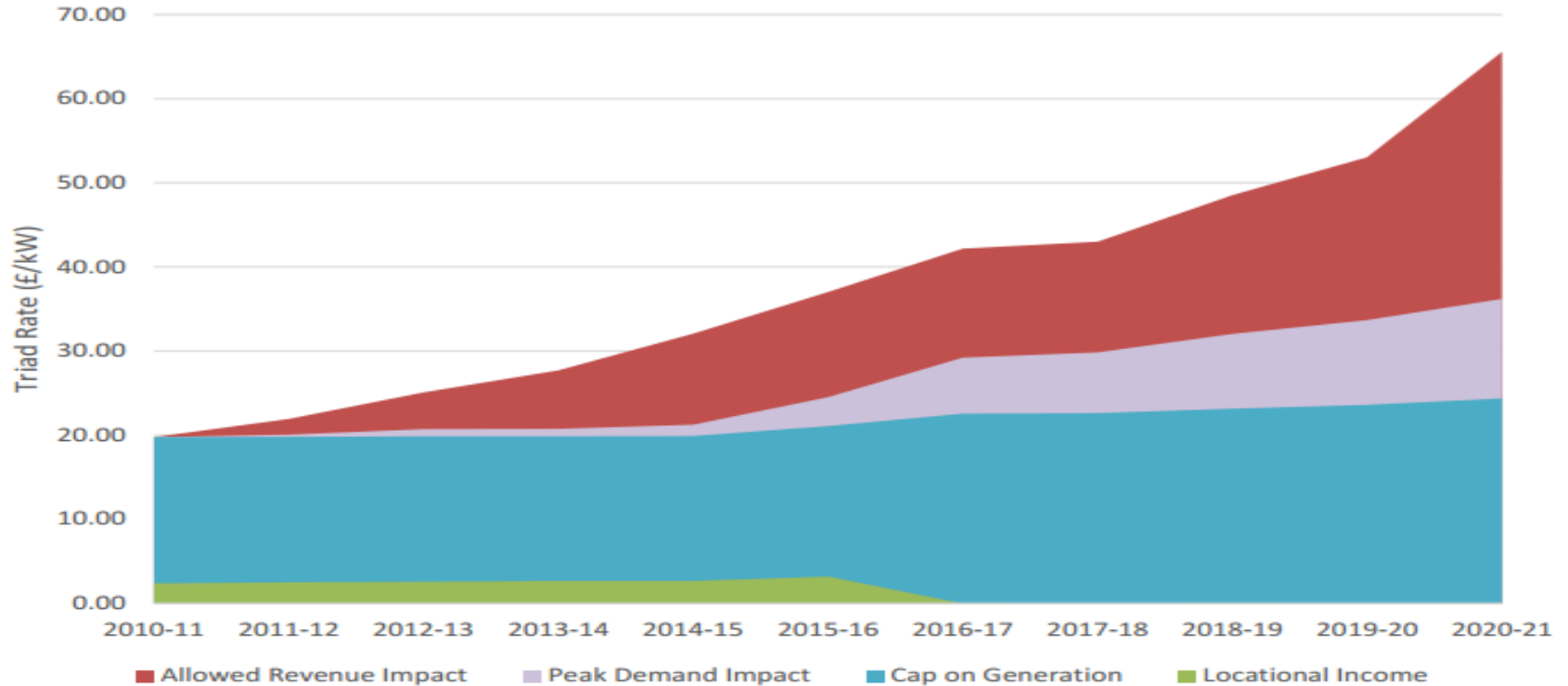


# What are the Embedded Benefits?

Transmission System Embedded Benefits	Distribution System Embedded Benefits
Transmission Network Use of System (TNUoS)	Generator Distribution Use of System (GDUoS)
Balancing Services Use of System (BSUoS)	Distribution losses
Transmission losses	
Areas of Assistance(AAHDC)	
Residual Cashflow Reallocation Cashflow (RCRC)	
Capacity Market Supplier Charge	

# Context – Demand TNUsoS increasing

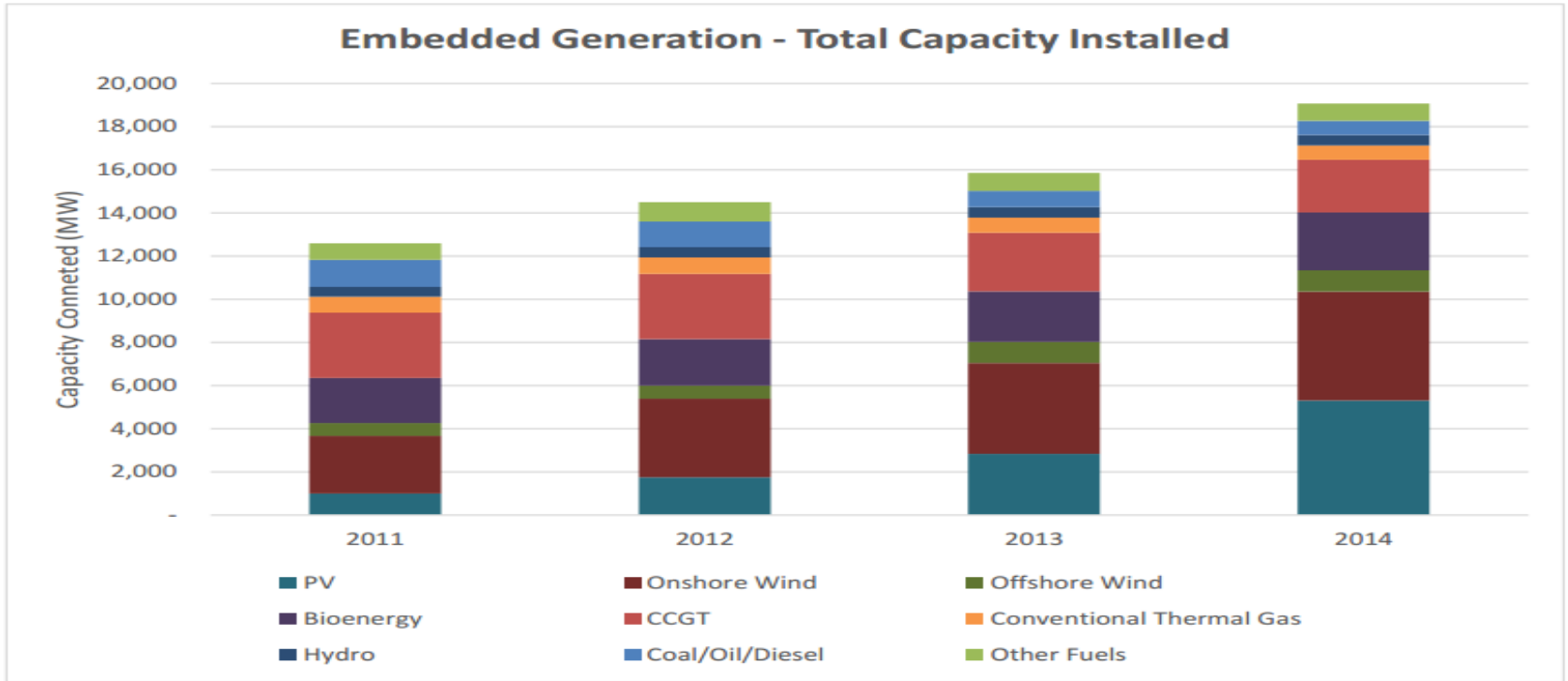
Drivers of Increasing Triad Charge



# Context – Security of supply concerns



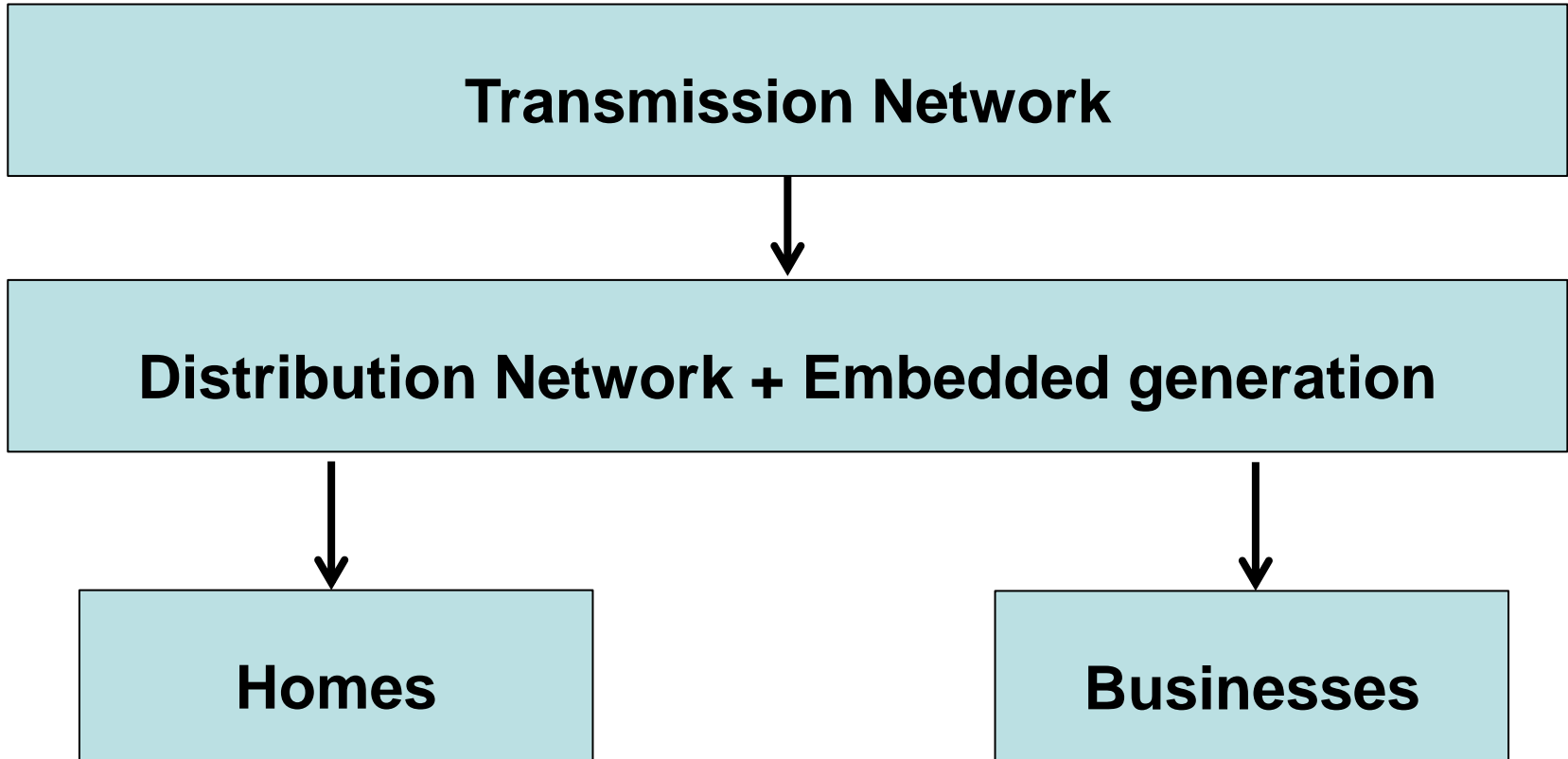
# But 'Embedded' is more than diesel



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# Do local generators use the TN?



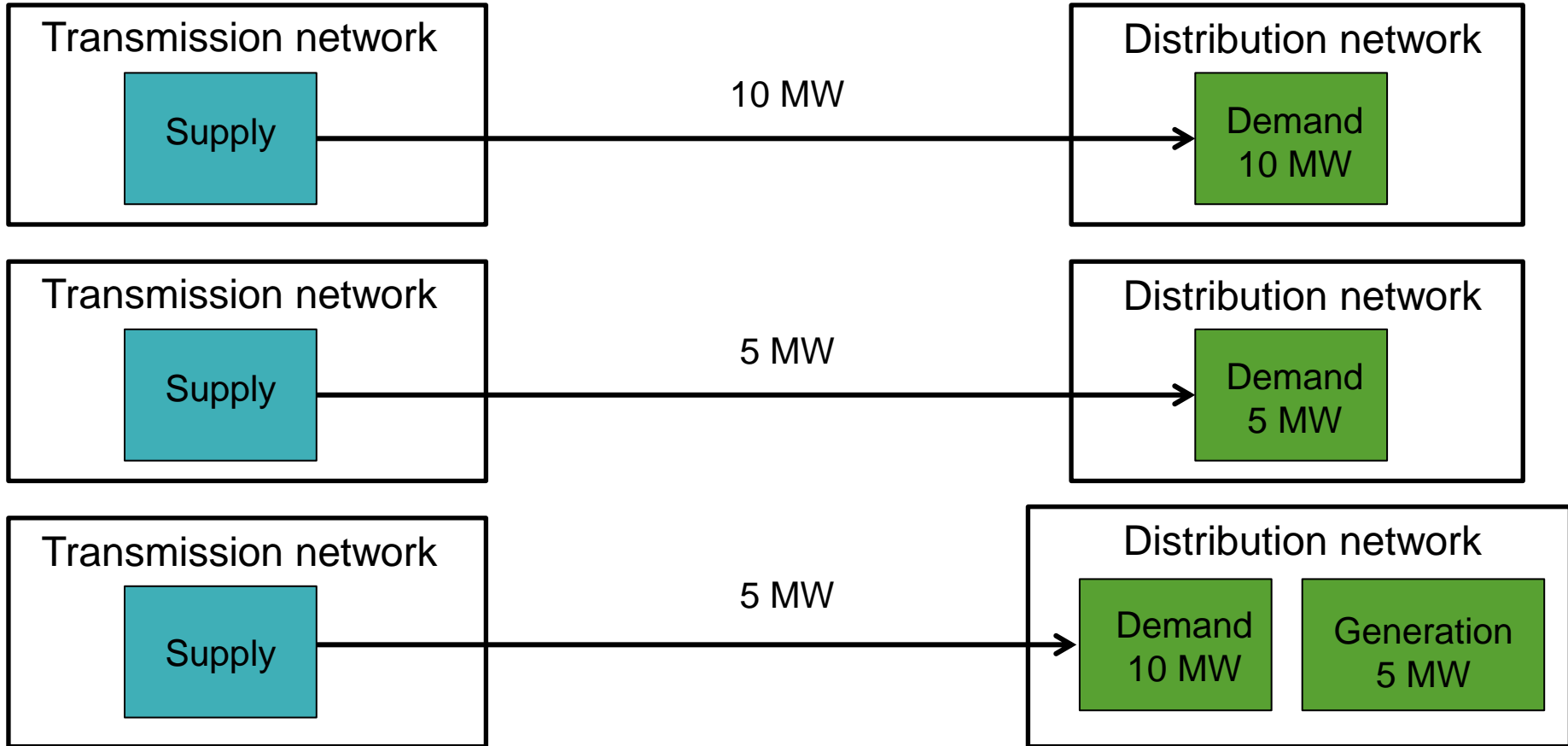


# Charging embedded generation

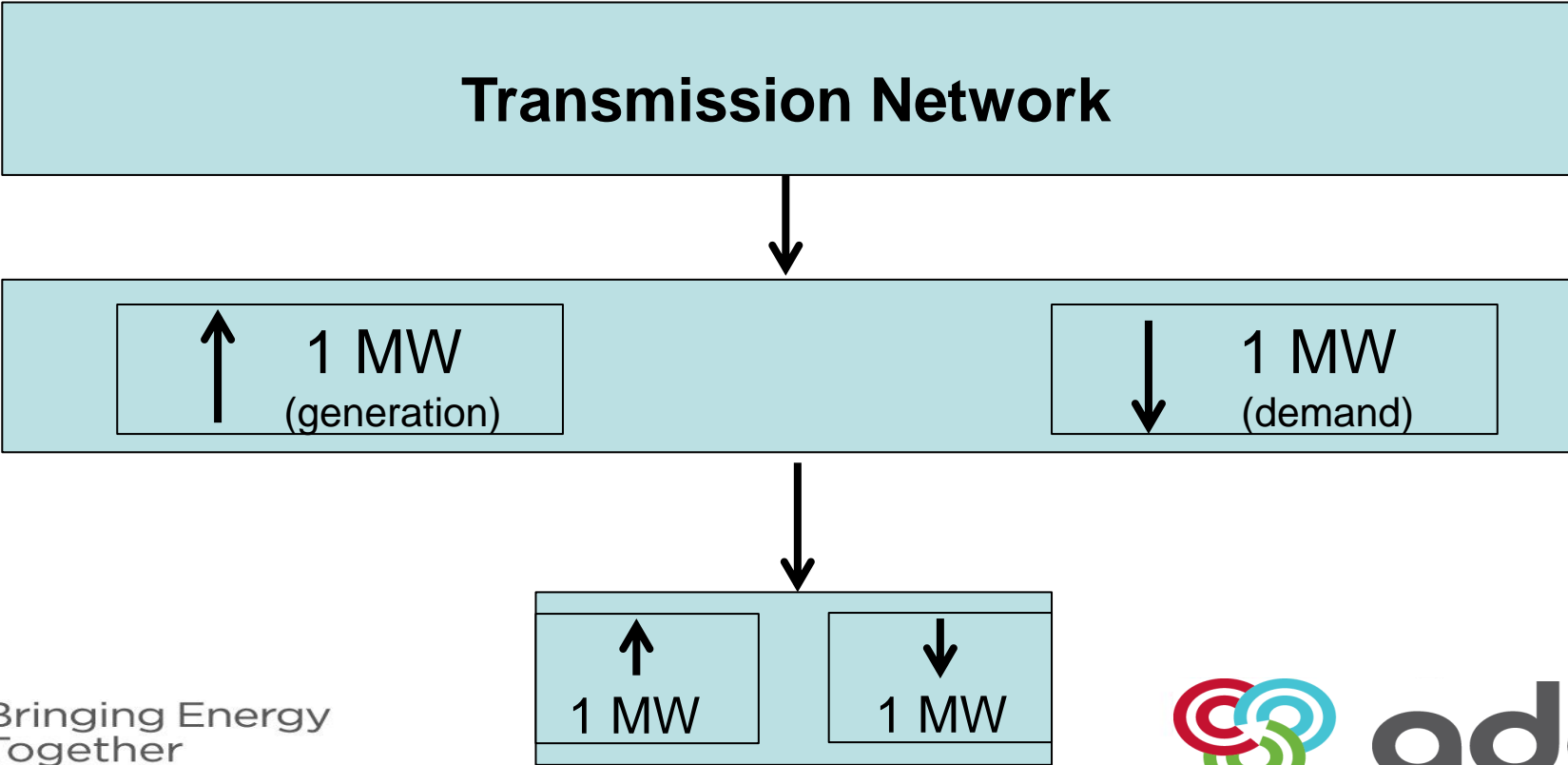
- ⊙ Based on 'use of system' charges
- ⊙ Distributes costs fairly to those that incur the costs
- ⊙ Charging embedded generators for use of TN is like charging drivers for a toll road when they do not drive on it.



# 'Negative' demand = Demand reduction



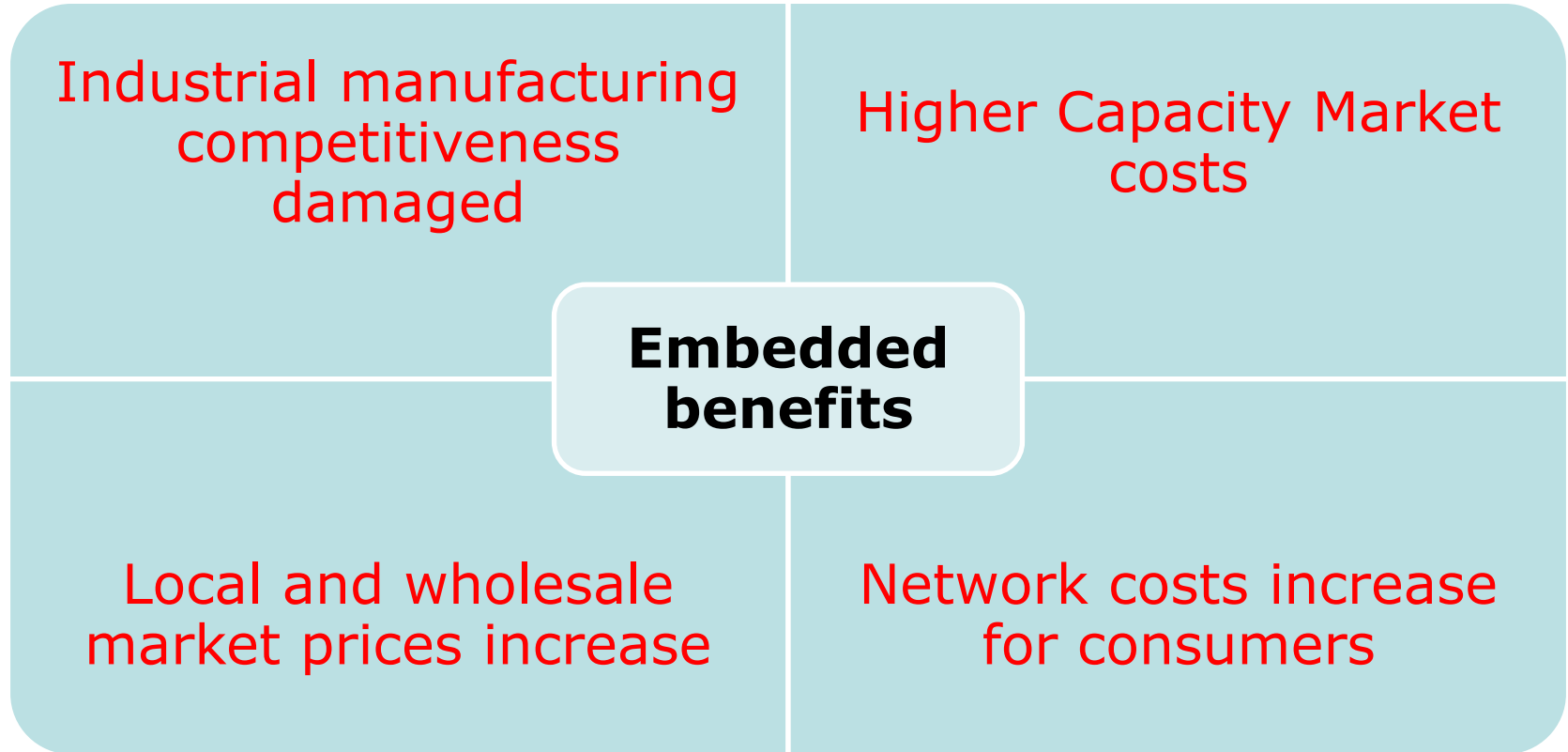
# What does 'net charging' mean



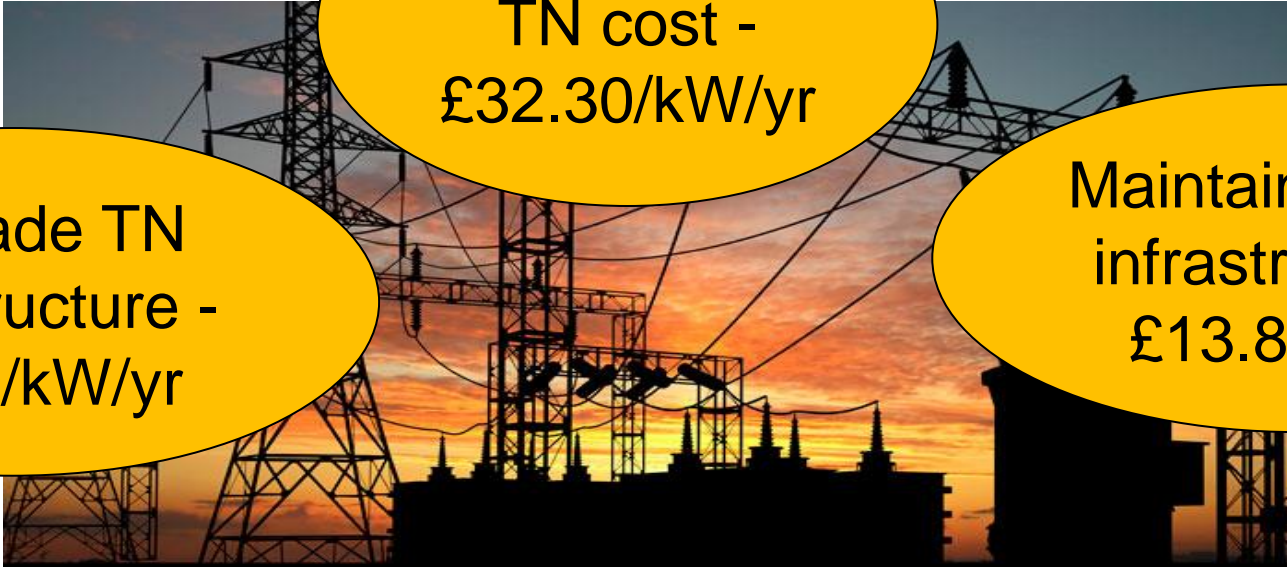
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# Removing embedded benefits



# Distributed generation value– Cornwall Energy



Total avoided  
TN cost -  
£32.30/kW/yr

Upgrade TN  
infrastructure -  
£18.5/kW/yr

Maintaining new  
infrastructure -  
£13.8/kW/yr

Link to report: [http://www.theade.co.uk/embedded-benefits-review--  
manufacturing-energy-cost-concerns\\_4069.html](http://www.theade.co.uk/embedded-benefits-review--manufacturing-energy-cost-concerns_4069.html)

# Fairer Embedded Benefits? Cornwall Energy

£45/kW

- Today's Embedded Benefit

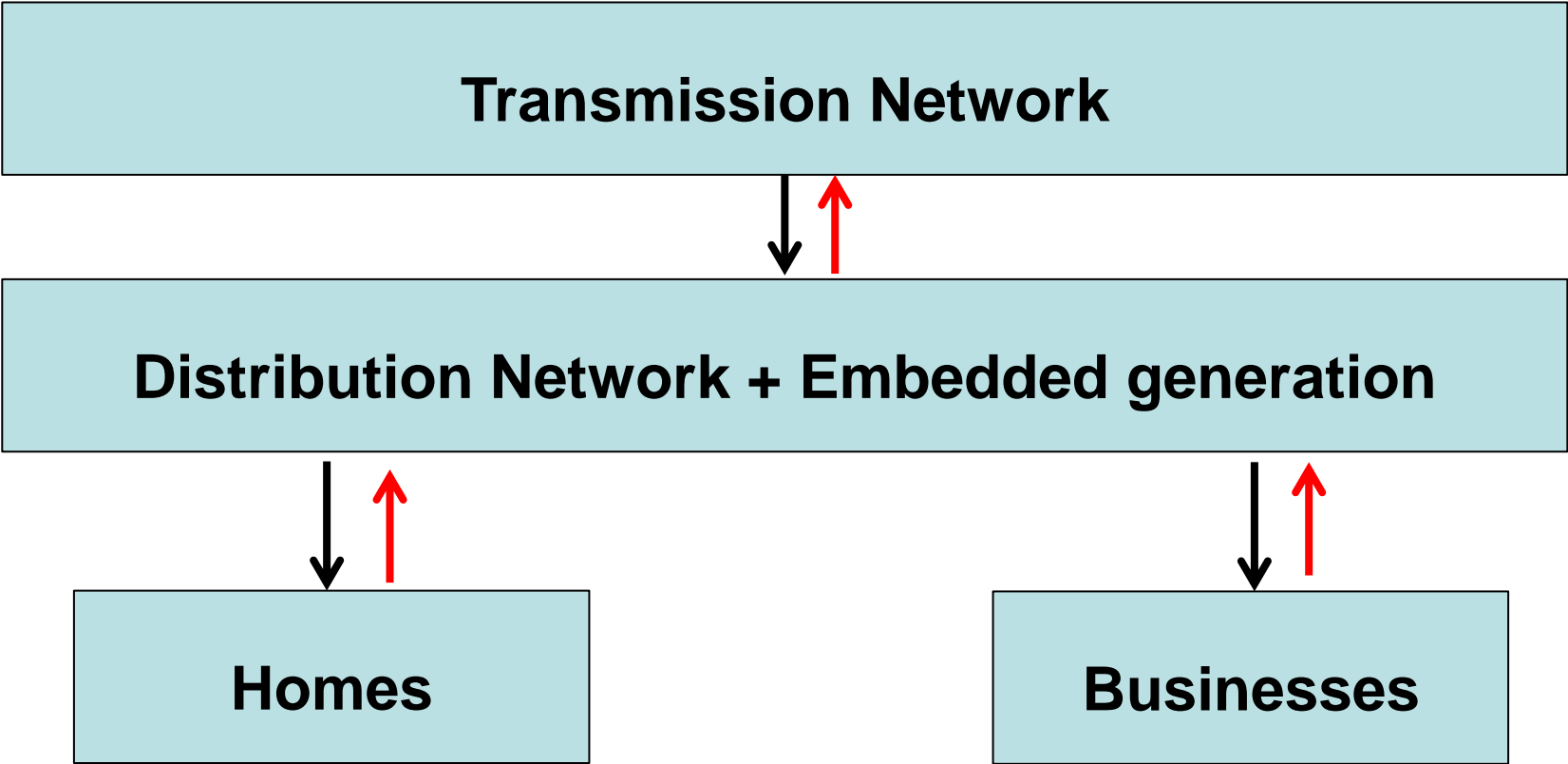
£41/kW

- Remove National Grid fixed costs

£32/kW

- Spread cost of networks over 10 year period
- Reflects long-term nature of infrastructure

# Charge exporting distribution networks



# Don't forget distribution charges!

Over valued  
by £13/kW at  
TN level



Under valued  
by £7-£16/kW  
at DN level



# The review process

- Holistic, Ofgem-organised and independently-led. No short-term or rushed fixes.
- Charging regime fit for purpose for the future energy system
- Benefits for both distributed generation and demand should be considered.
- Consider network costs over the short-term and long-term

A copy of the report is available at:  
[http://www.theade.co.uk/embedded-benefits-review--manufacturing-energy-cost-concerns\\_4069.html](http://www.theade.co.uk/embedded-benefits-review--manufacturing-energy-cost-concerns_4069.html)

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