

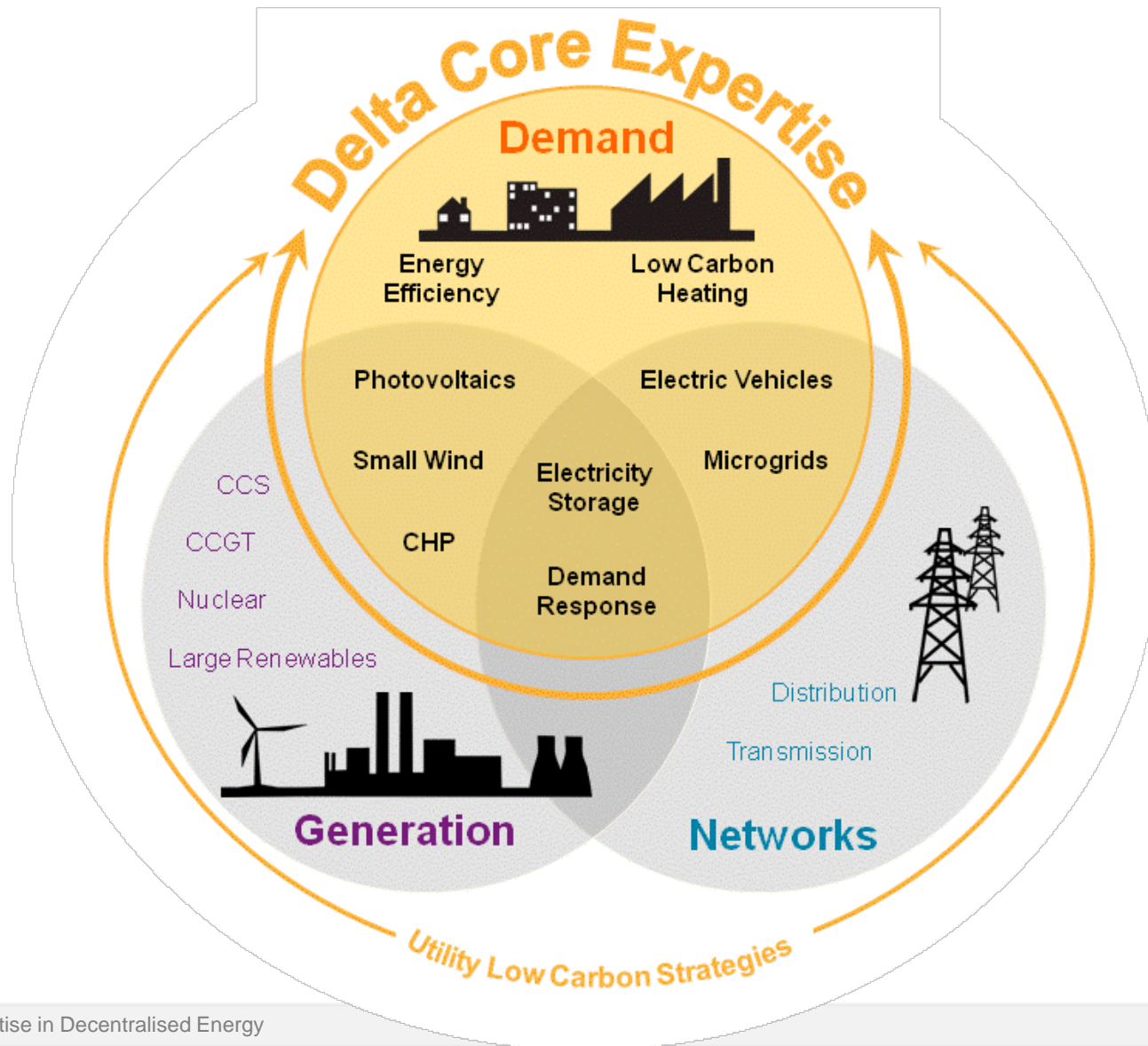
Delta Energy & Environment Ltd
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Delivering Energy Efficiency in a Carbon-constraint Future

Cian McLeavey-Reville
Delta Energy & Environment
8 October 2009



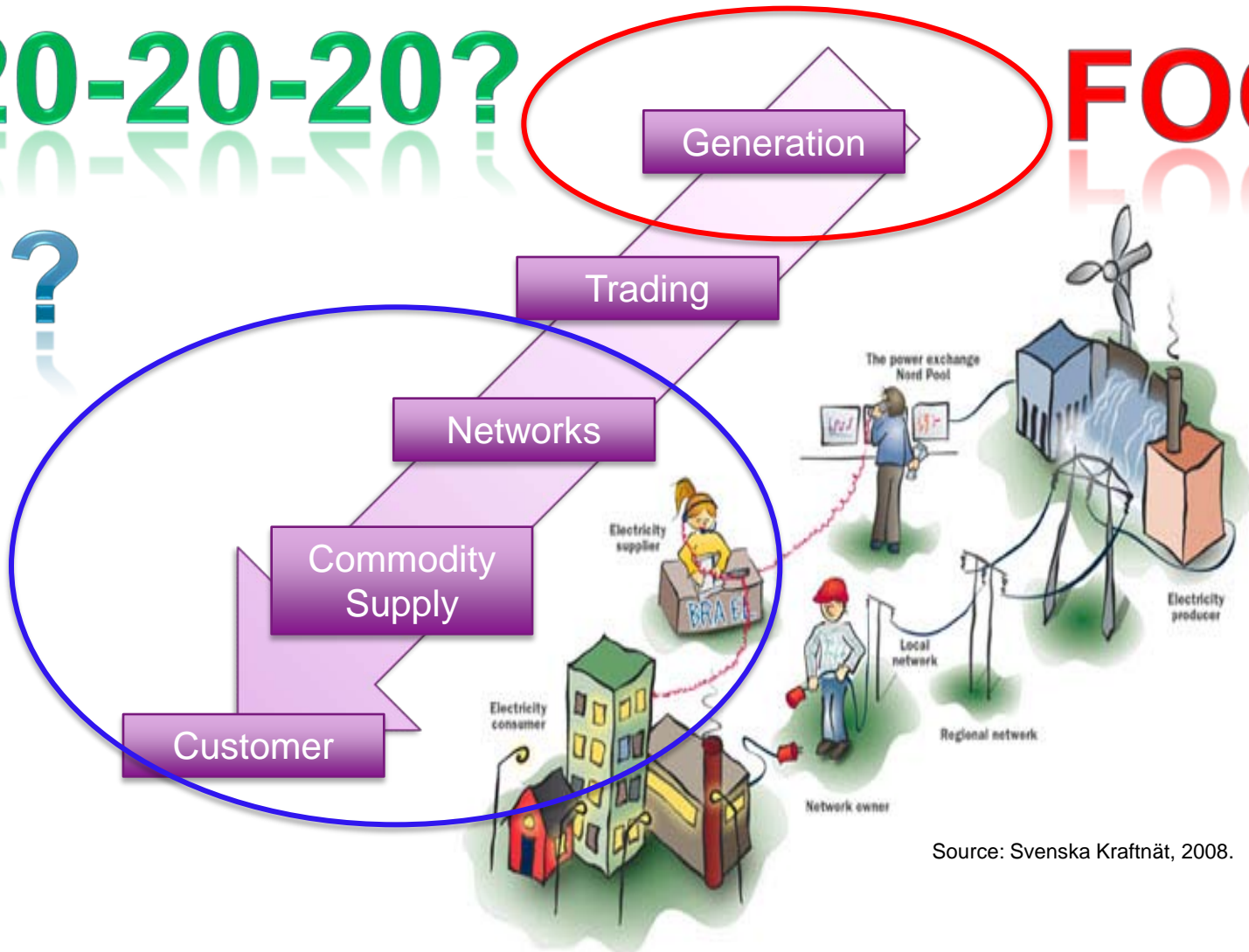


Delivering Energy Efficiency in a Carbon-constraint Future

- Energy market environment for utilities in 2020
- The role of smart metering in the new energy environment
- Conclusions and Outlook

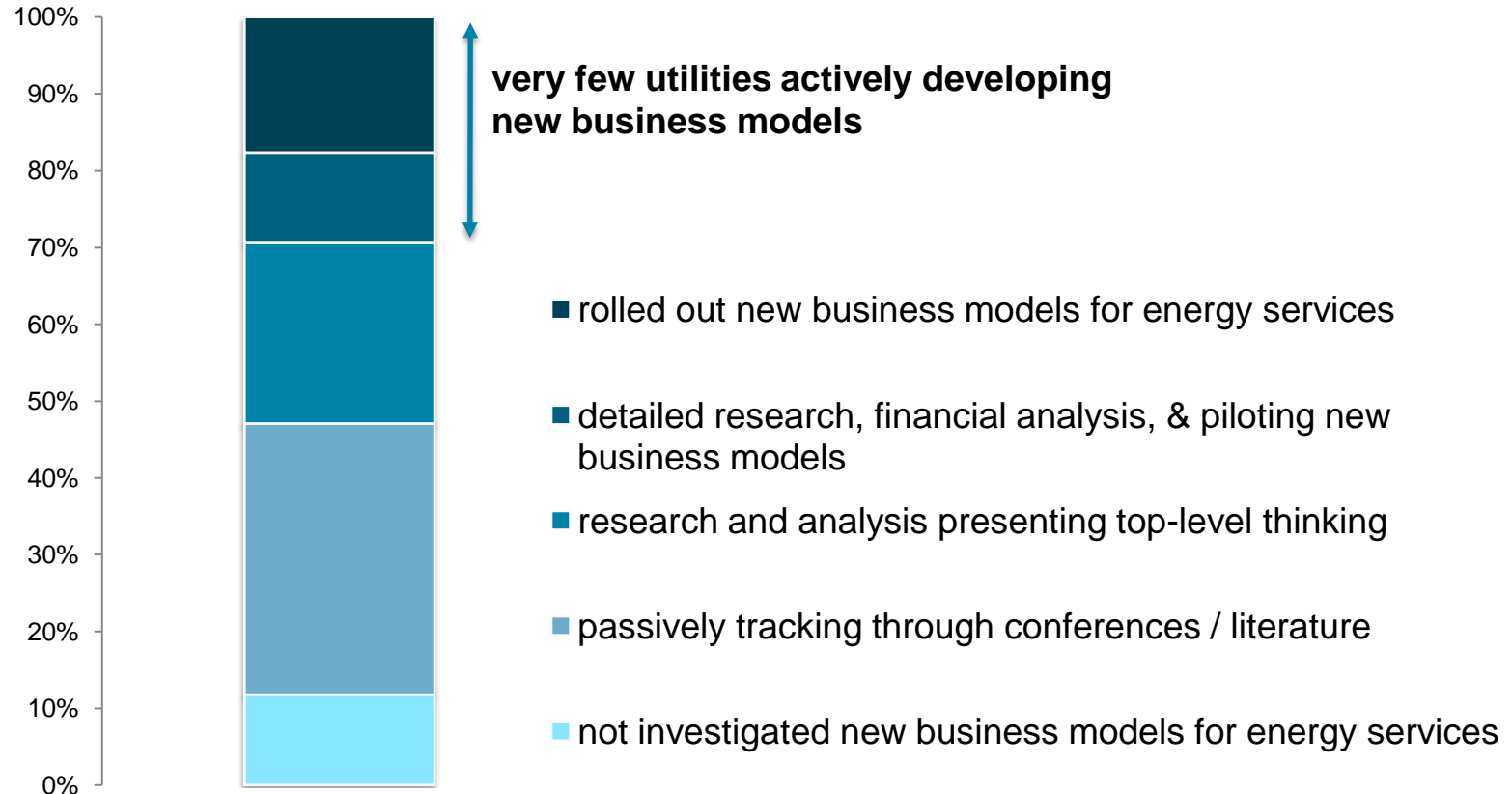
20-20-20?

FOCUS

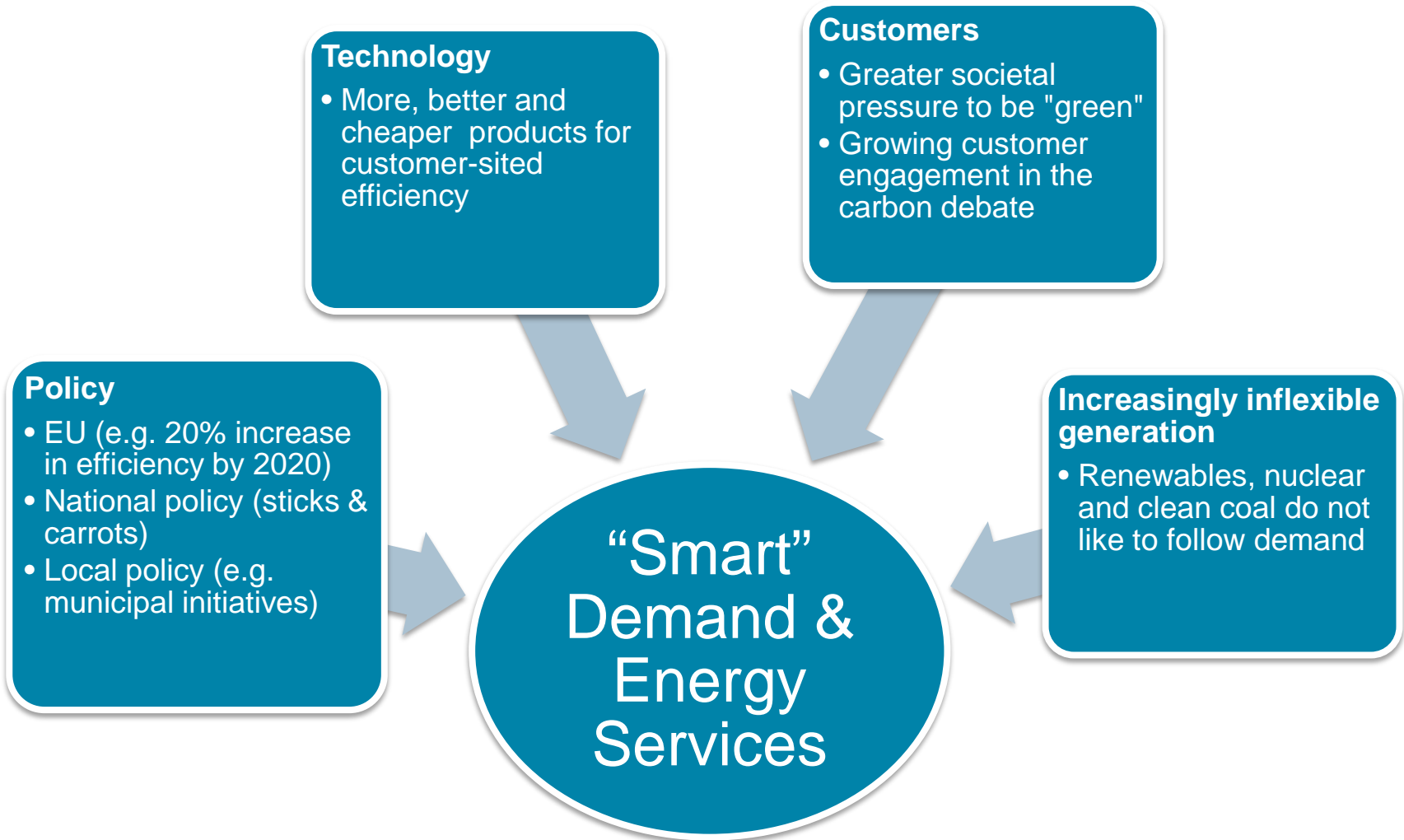


Source: Svenska Kraftnät, 2008.

Carbon Savings – Focused on Supply Side



Demand Side Will be Developed!



Technologies are changing the structure of energy supply

Decentralised

- Generation close to consumers
- Range of technologies

Low-carbon

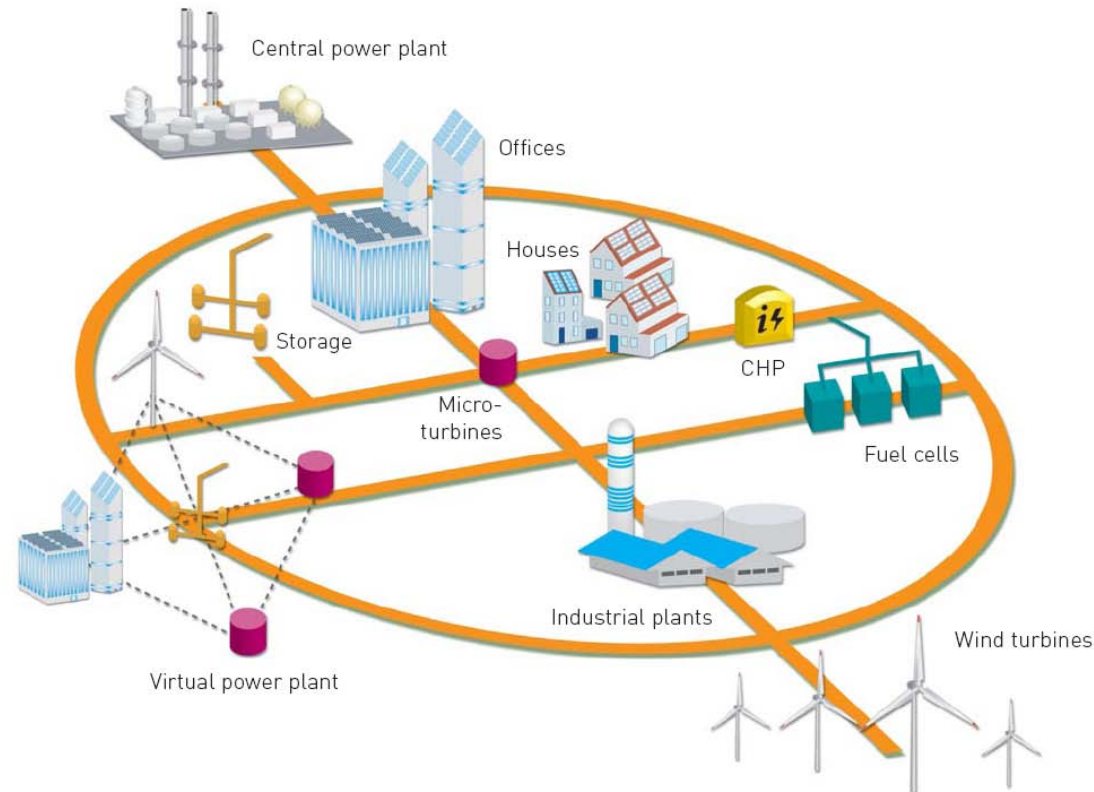
- Renewable
- Phase out fossil fuels
- CHP as bridging technology

Smart

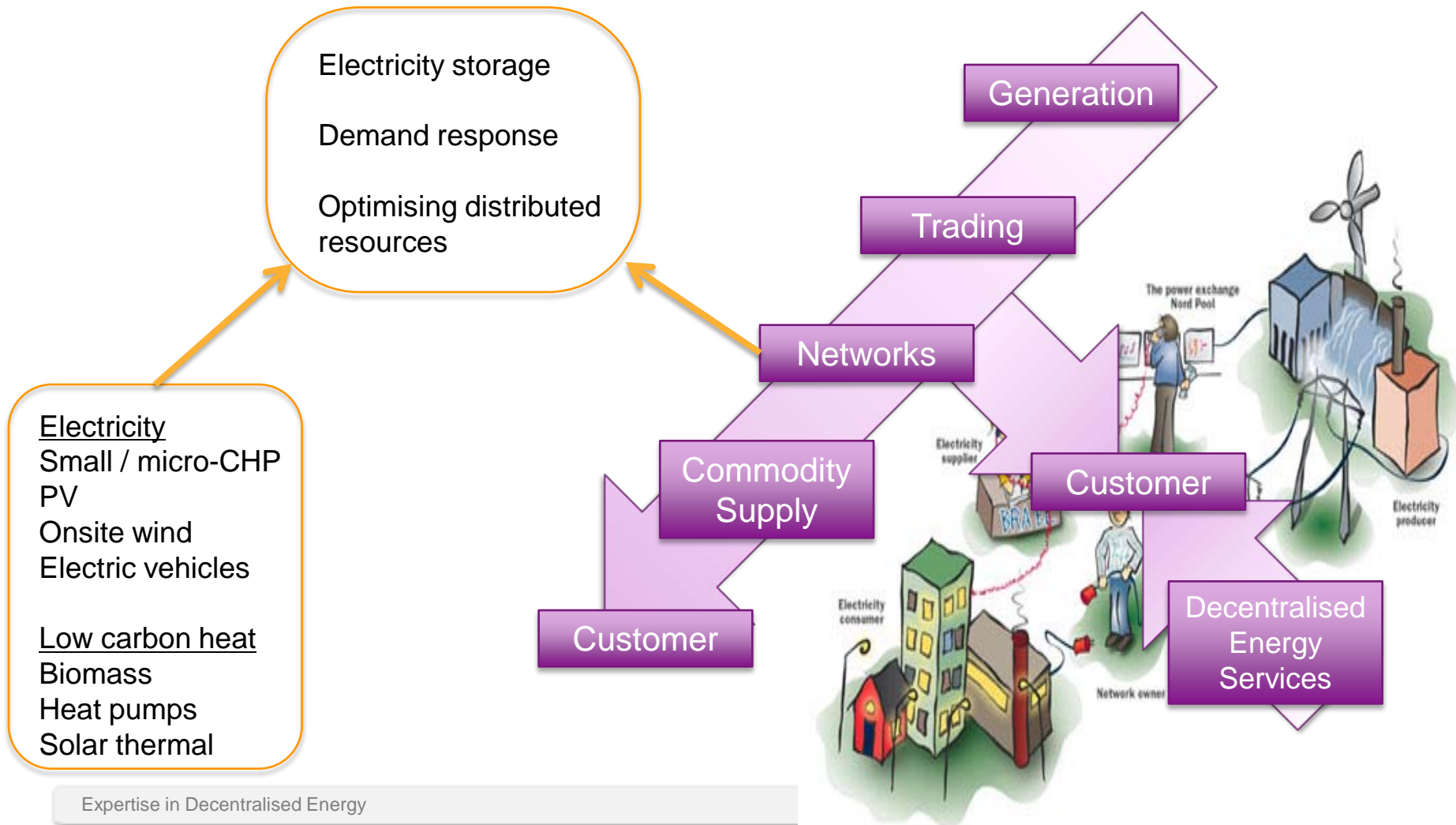
- Driven by user needs
- Demand-side management
- Localised balancing

EVs

- Game-changer
- “Customer cuts the chord”



Utility business in decentralised low-carbon world



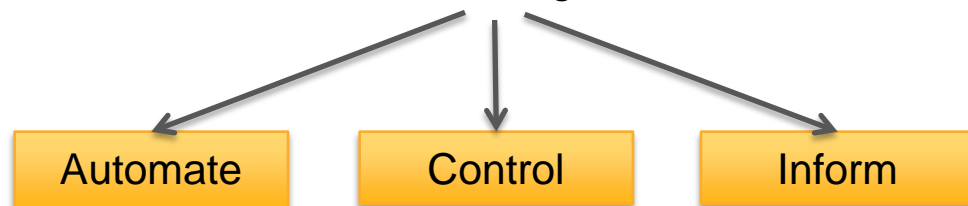
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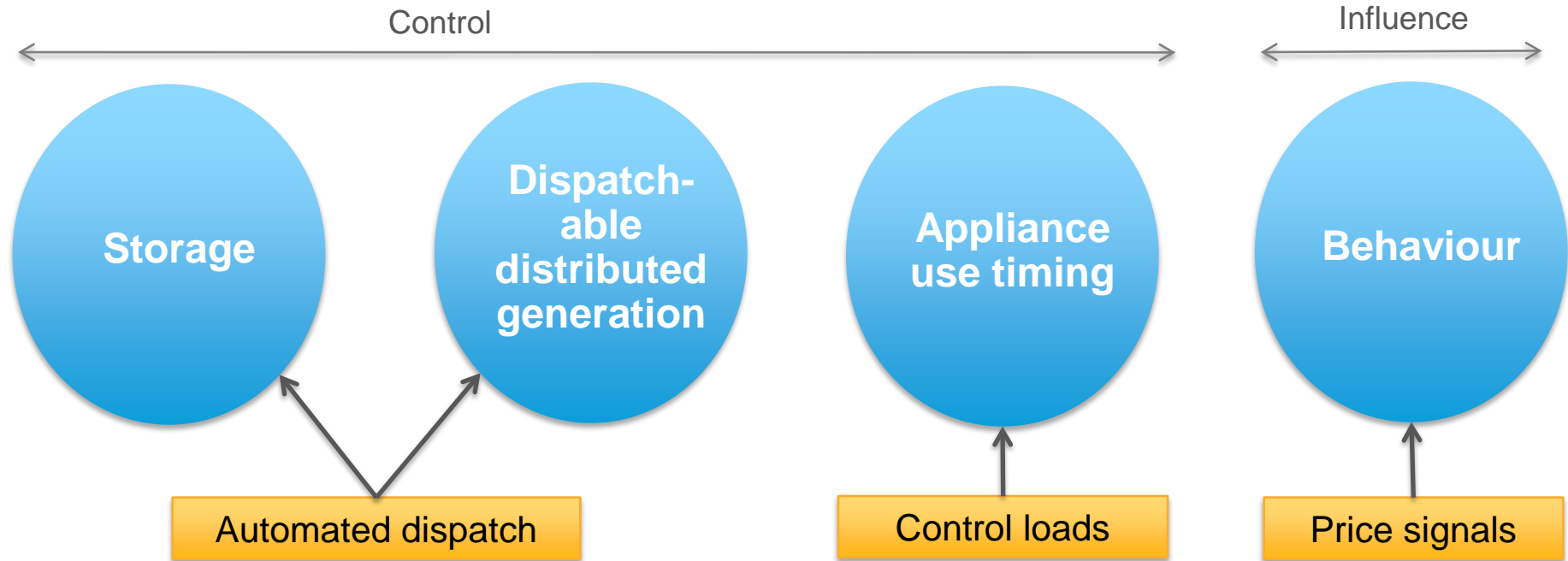
Energy Services Provider

Trusted provider of in-home services and solutions

- Service & maintenance infrastructure
- Portfolio of solutions
- Facilitating investment
- Smart metering interface



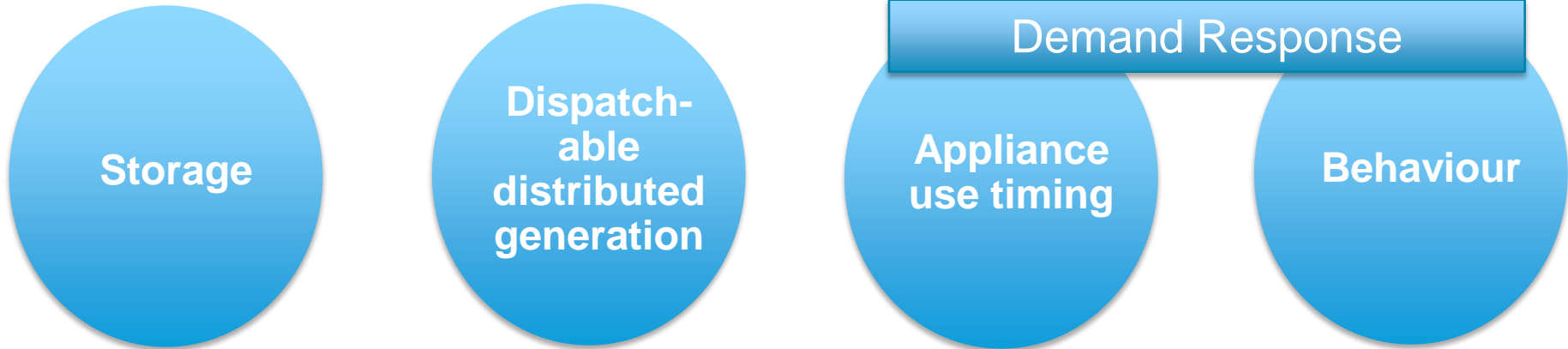
Delivering Energy Efficiency – Shaping the Demand Curve



Delivering Energy Efficiency – Shaping the Demand Curve

Control

Influence



Electric

- Batteries

Heat

- Electric heating

Cold

- Air conditioning

- Combined heat and power

- Backup generators

- Onsite renewables

- Refrigeration

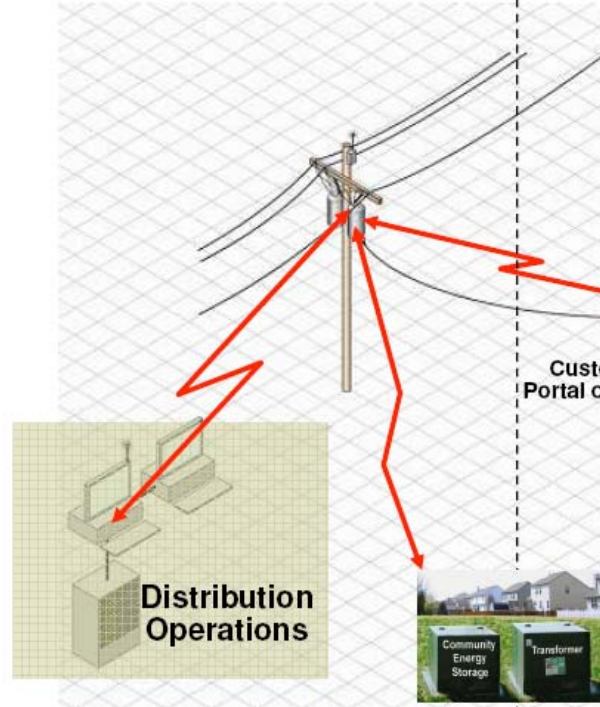
- Washing / drying

- Electric vehicle charging

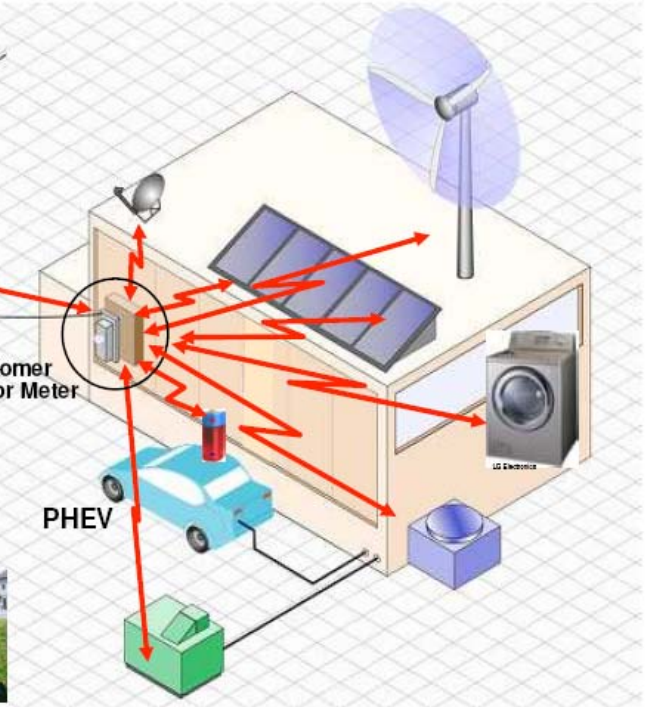
- Price signals

- Li-ion batteries & smart grid infrastructure
 - Load shifting
 - Ancillary services
 - Reliability
 - Integration of DG

Utility Operations

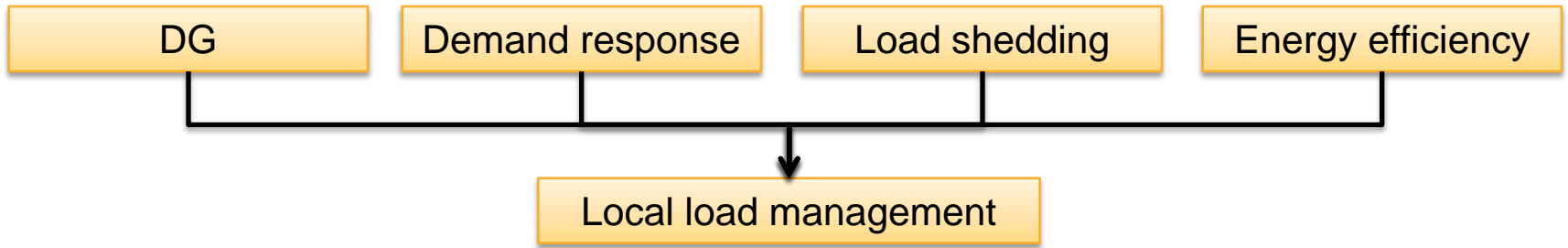


Customer Premise

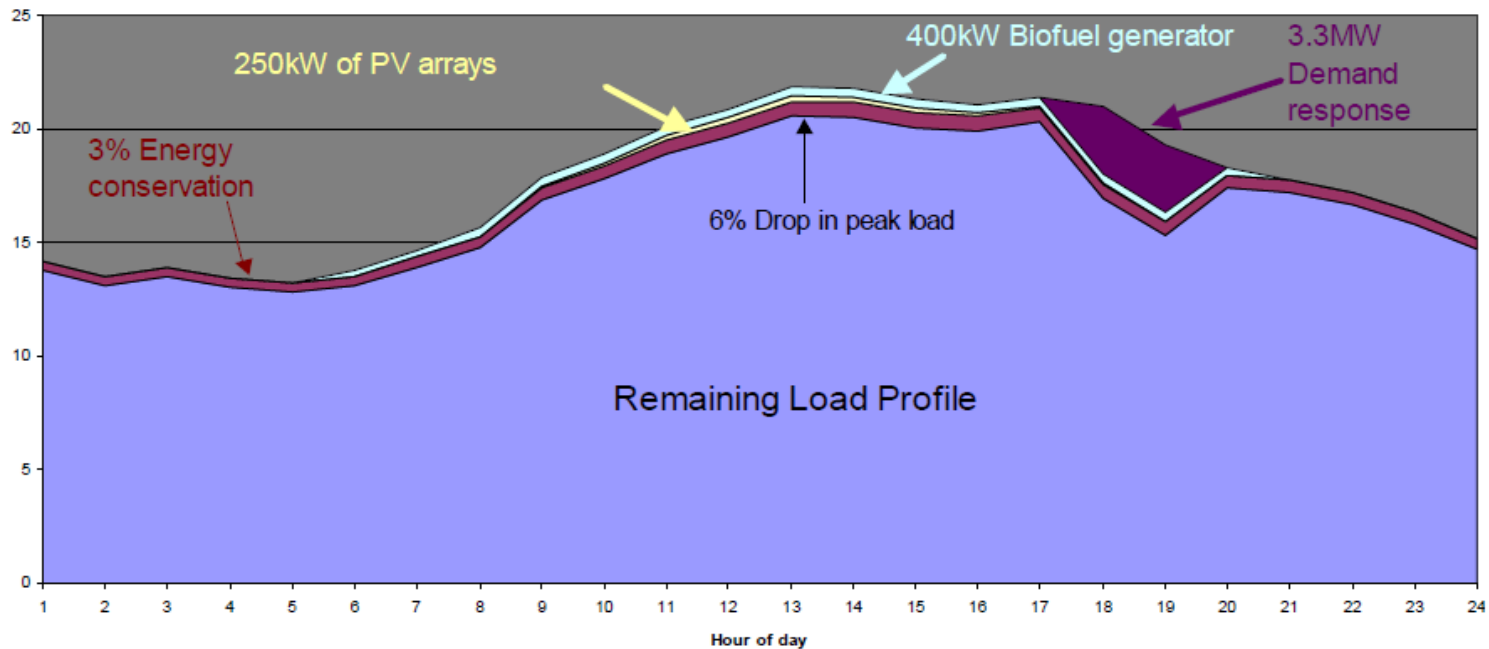


COSTS WILL FALL AS EV MARKET DEVELOPS

Dispatchable DG – National Grid Congestion Relief Pilot



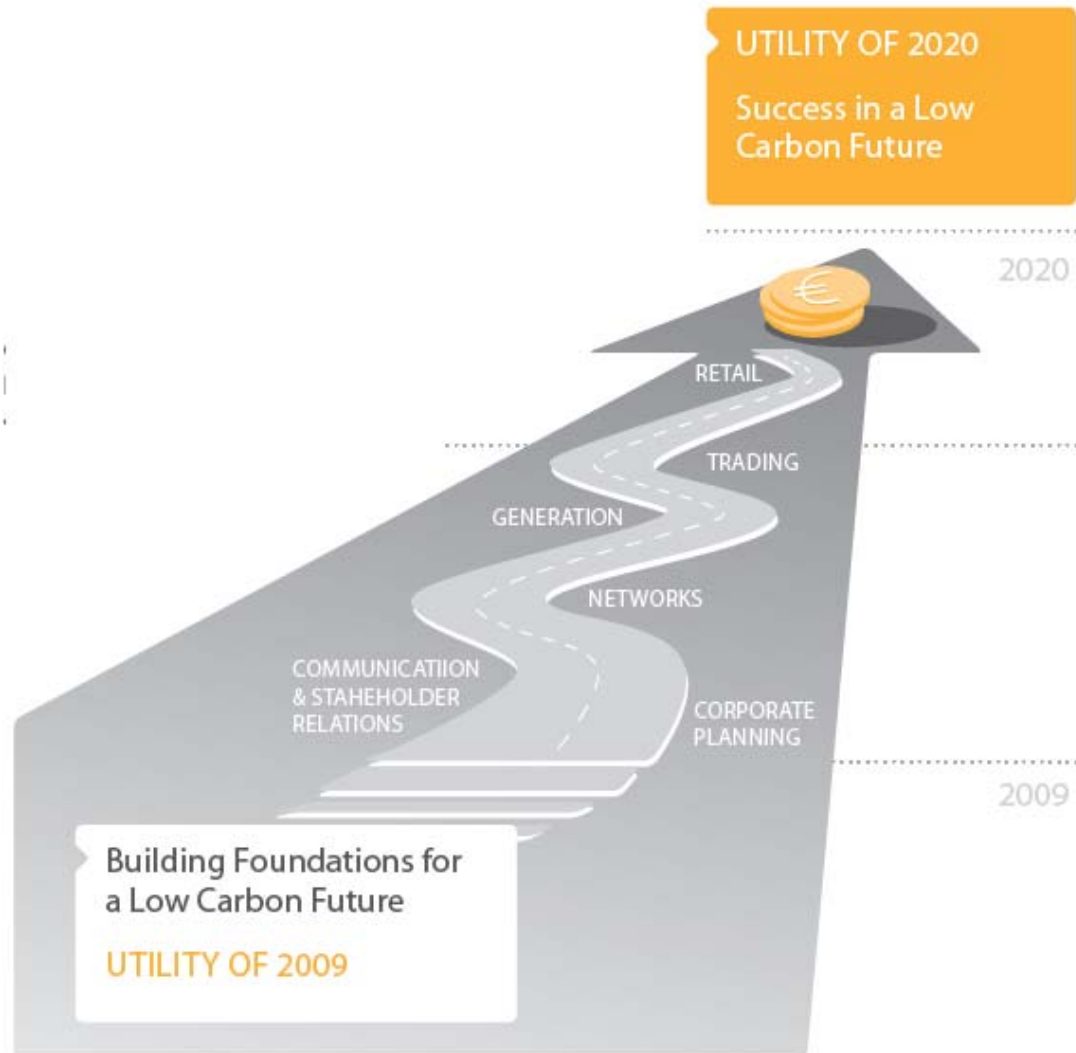
NGRID's Pilot Expectations Given Existing Funding

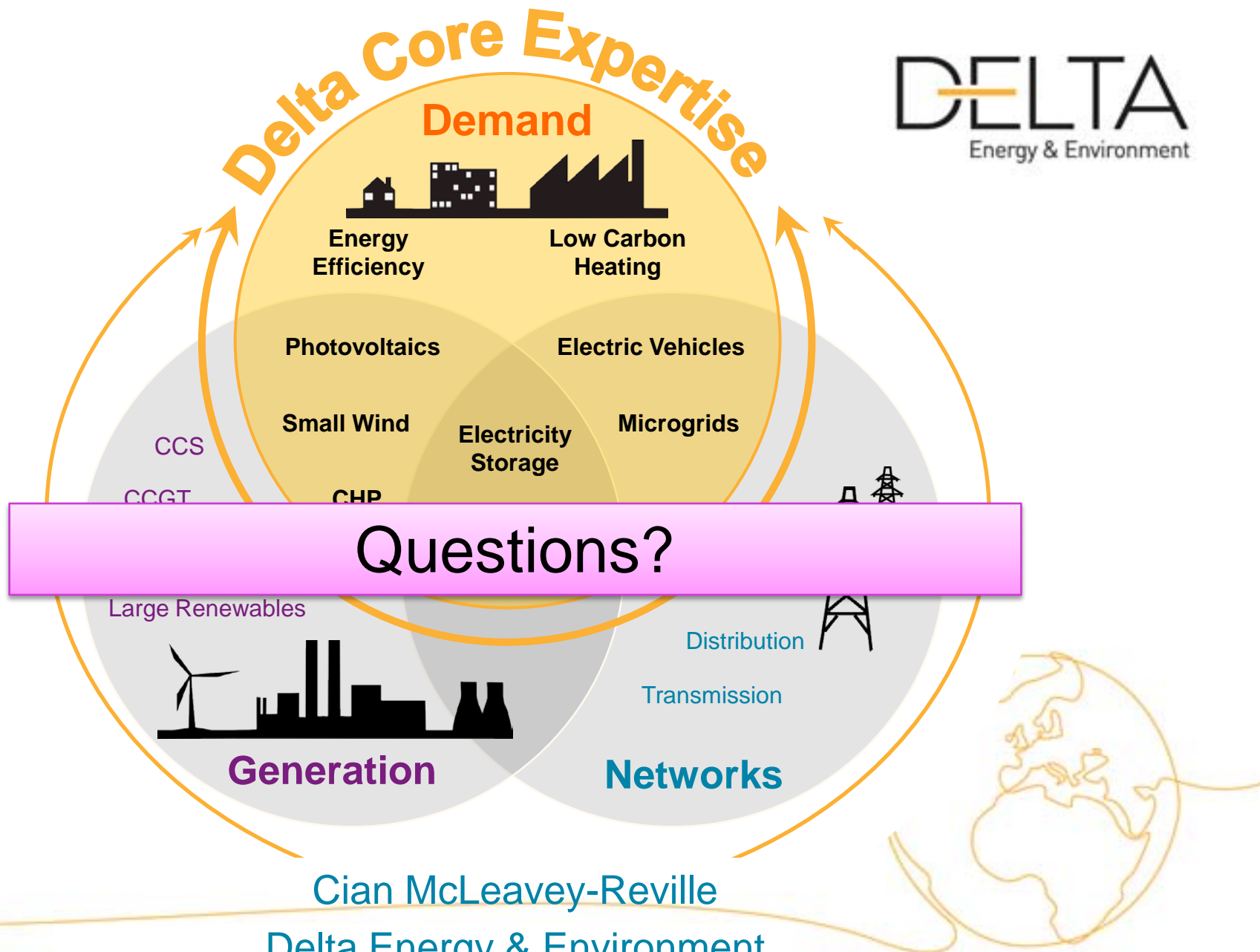


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Conclusions and Outlook





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