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The Smart Systems and Heat Programme

Putting the Consumer First in the Future of Energy

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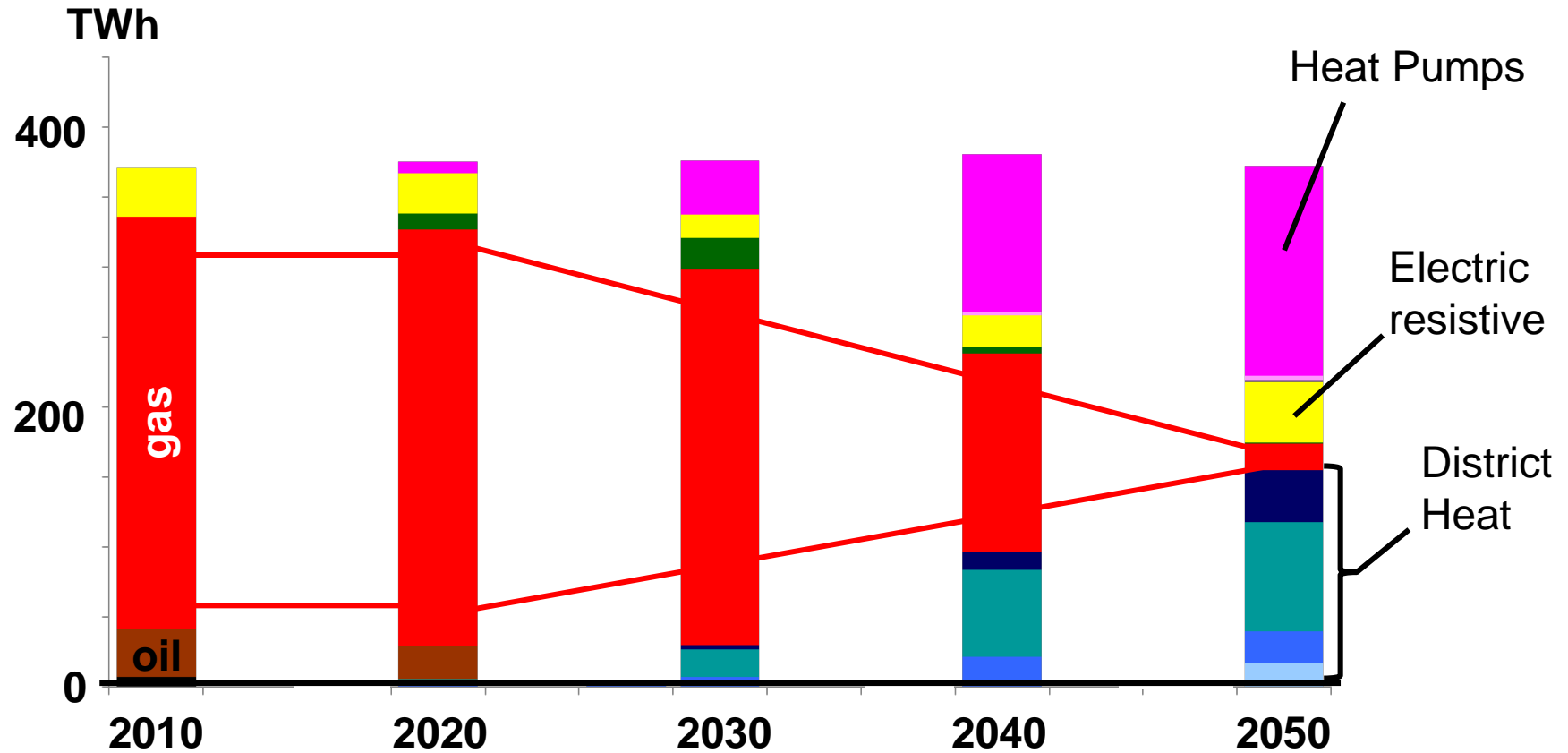
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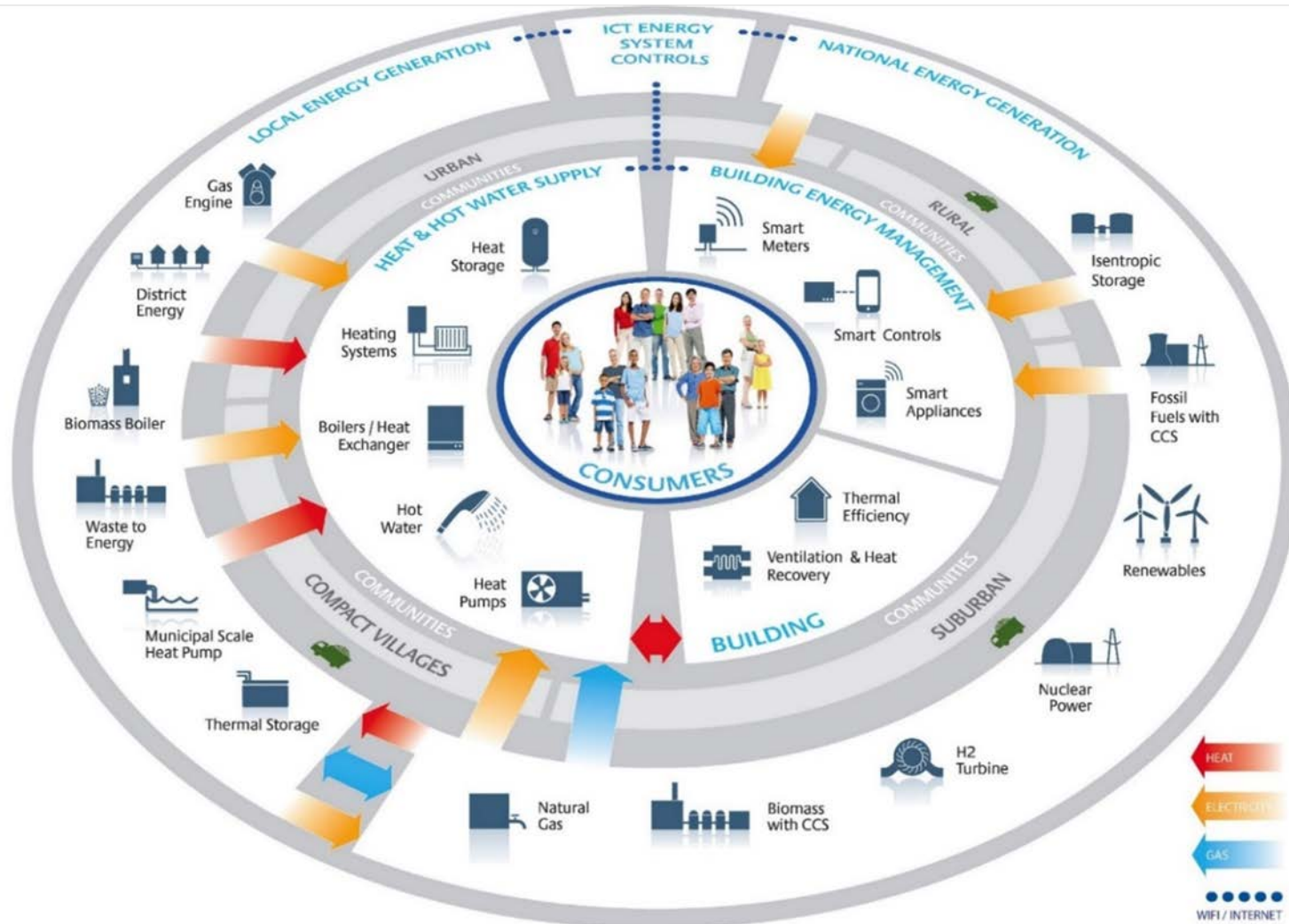
Meeting 2050 energy and climate change goals needs infrastructure transformation

UK space heat production...



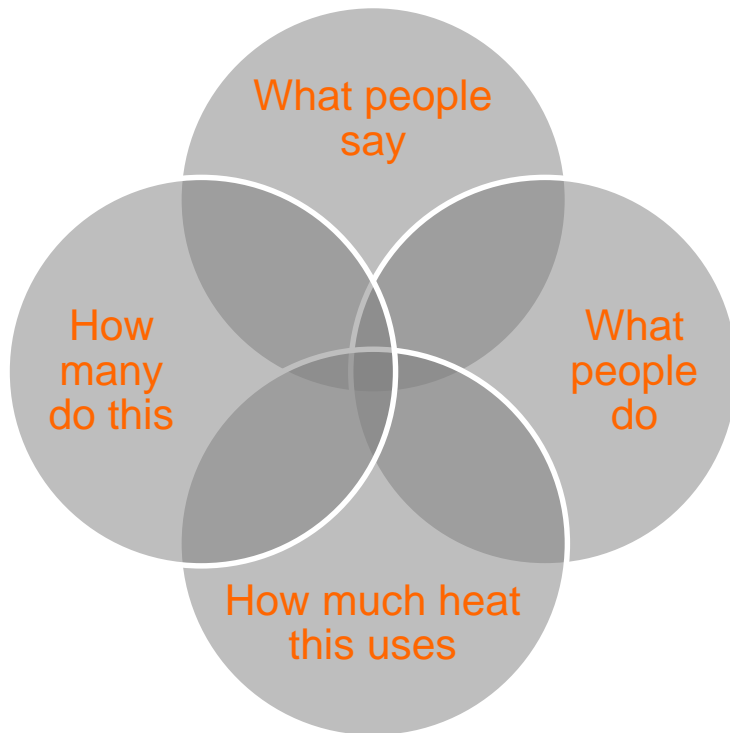


Systems integration between multiple components and stakeholders is key





Consumer research approach



- Built on existing evidence
- Discovered public views of heat, areas of consensus and contention
- Examined how home life shapes heat use
- Quantified varying heat practices
- Evaluated solutions



SSH is helping industry and government by creating key systems integration capabilities



1

Domestic Energy Data System

Software platform providing capability to gather, process and use data to help service providers **deliver better domestic energy services**

(Home Energy Management System)

2

Local Energy Transition Planning

Local energy transition planning capability, building consensus among stakeholders to **make local infrastructure investment decisions with confidence**

(EnergyPath Networks)

3

Energy System Operational Architecture

System architecture capability, trading-off commercial, information and physical domains across gas, heat and power to **enable confident decision making in 'smart' system investment**

(EnergyPath Operations)

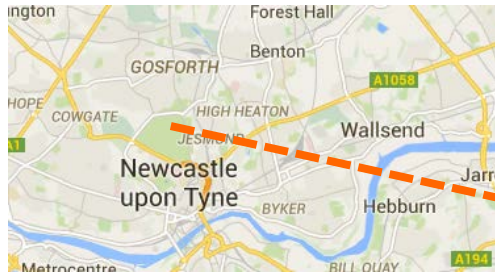


Capability focus on systems integration between electricity, gas and heat vectors

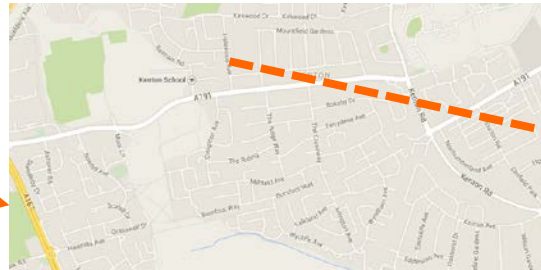


ETI SSH

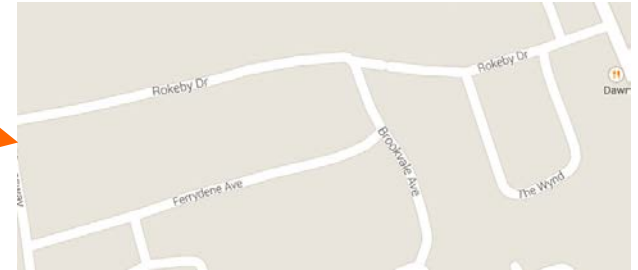
Project Implementation



Local area energy master plan, splitting LA areas into zones and defining a roadmap



Specific zone project briefs, describing project, benefits and policy required for investment



Detailed design and implementation

Deliver the first local area energy master plan for Newcastle

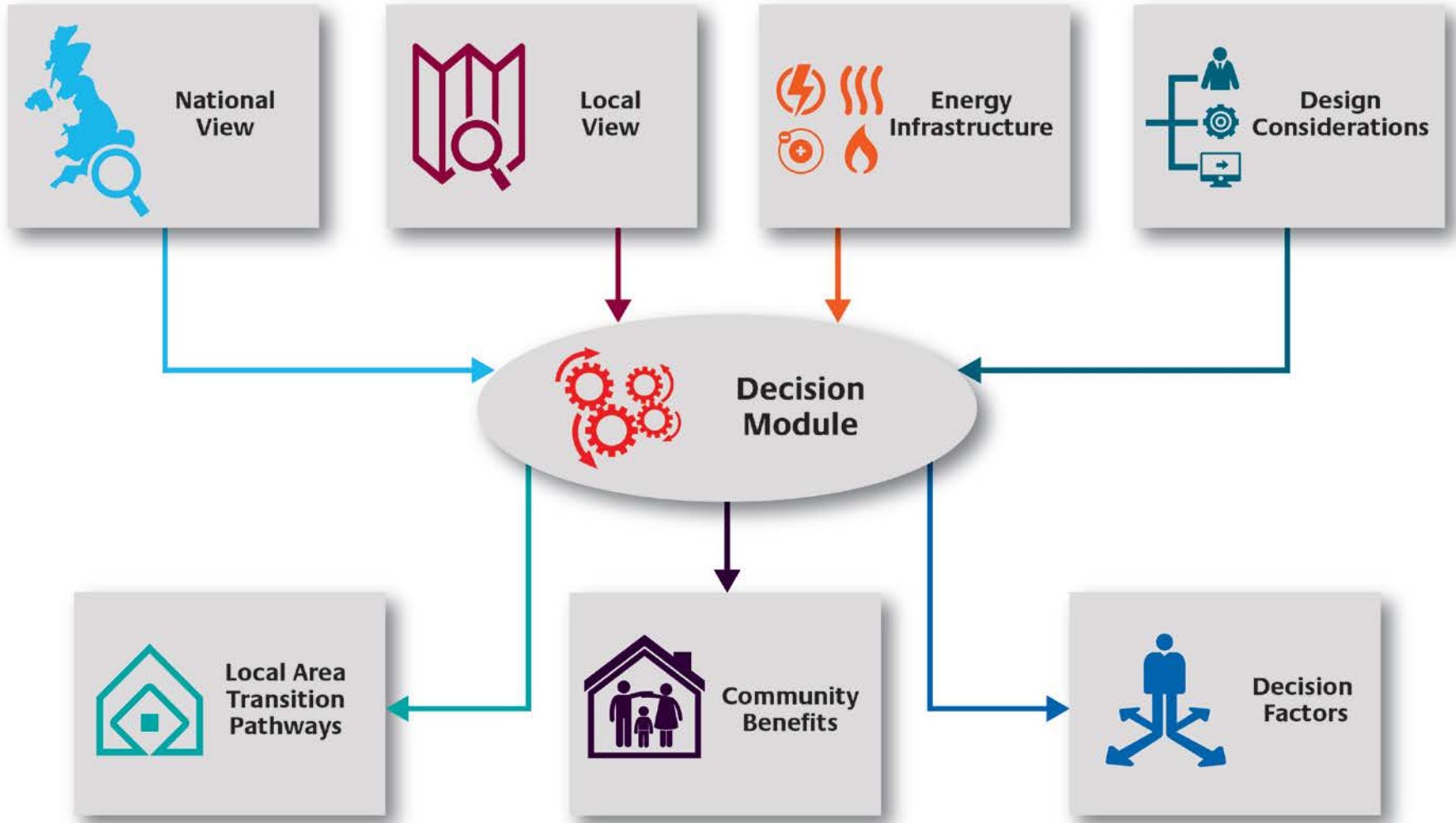
Improve the capability for Manchester and Bridgend

Deliver further energy master plans on a commercial (charged for) basis elsewhere

Continue to nurture potential future client relationships with other LAs, DNOs, GDOs, etc

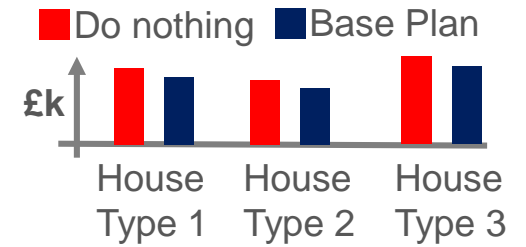
Inform Gov't on benefits, aiming to make it part of regulatory model

Mar '15 Sep '15 Mar '16 Sep '16 Mar '17 Sep '17 Mar '18



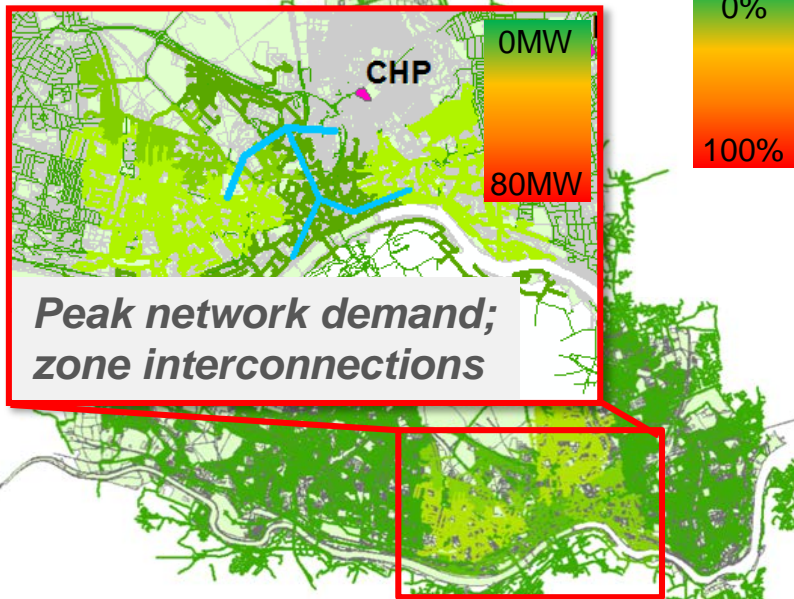


EnergyPath Networks



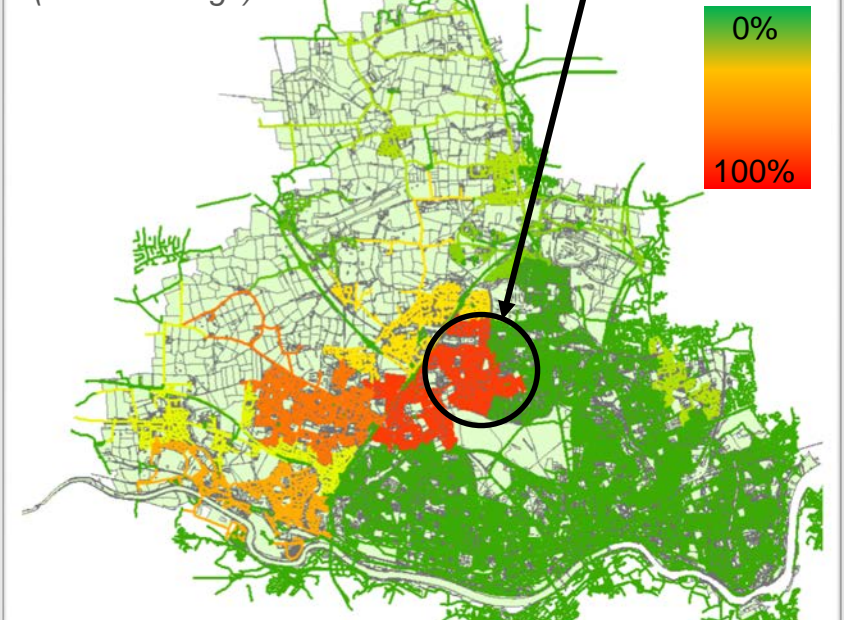
District Heat Connections (2020)

(% of buildings)



ASHP Connections (2050)

(% of buildings)





Summary

- We must understand people to decarbonise domestic heat use.
- This will be hard as people have different priorities and are less aware of needs they find easy to meet.
- The ETI has a number of work areas addressing these issues
- By using the EnergyPath Networks Tool we are seeking to help local areas develop the optimum network transition plan to meet the needs of the local people

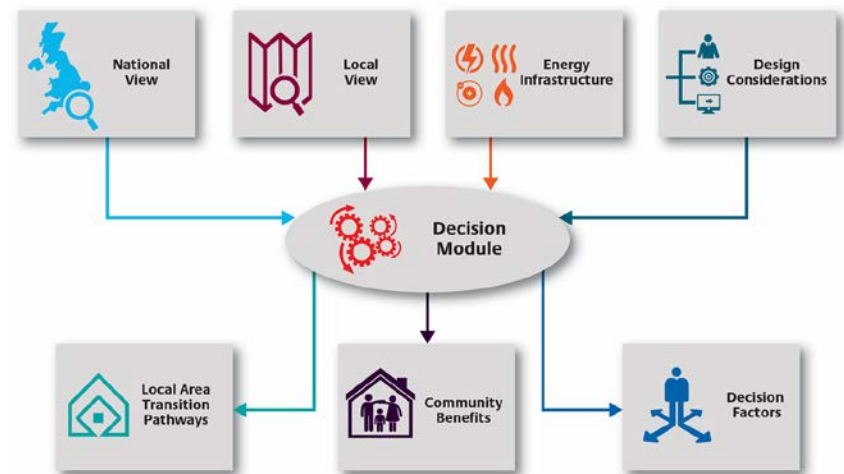


Back up slides



Why is this different to the Transform model

- Techno-economic tool for Electricity Networks investment
- The model determines the best investments for network operators to ensure that the grid can sufficiently meet the demands of the network in the future (looking at every year from now until 2050), in the most cost effective way possible.
- Considers only electricity
- Assess the infrastructure requirements that meet consumer heat needs and climate change objectives in any local area.
- Considers a number of energy vectors





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