Future of Gas

- reflections to date

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Future Of Gas Programme: Our objectives

Understand customer & stakeholder views to set out what the future holds for gas

Understand the potential future impacts on our network and the gas market

Develop policy recommendations to support government and regulators

Consider innovative solutions to future challenges

Our internal work: Future Energy Scenarios 2017
Testing the potential impacts on our network

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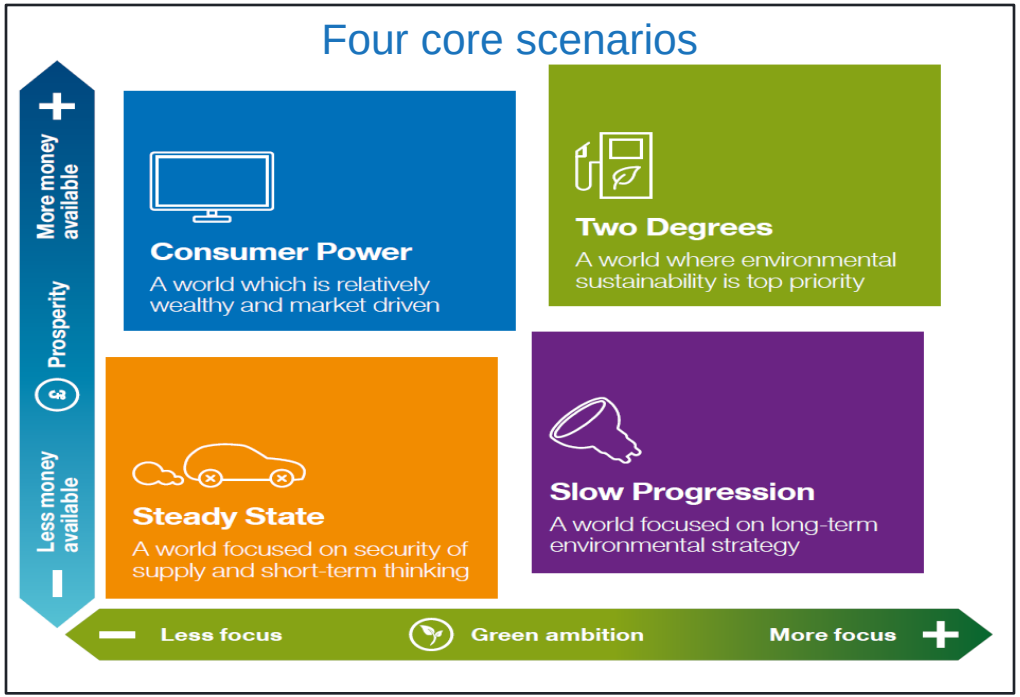
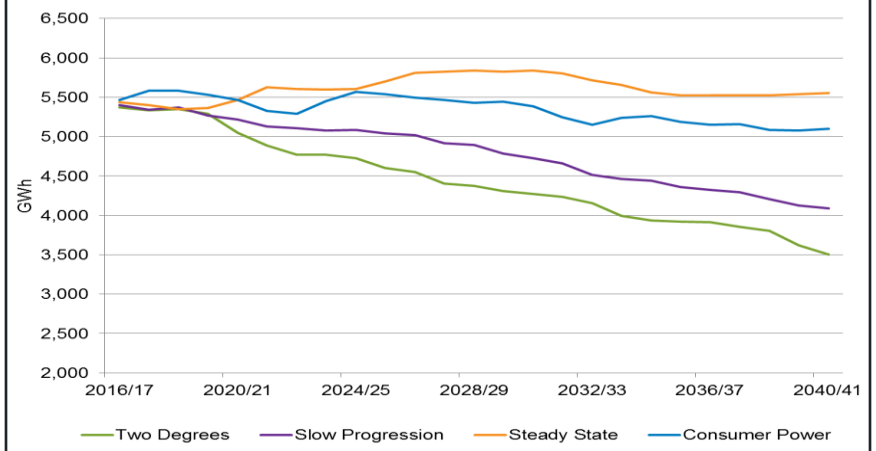
Four core scenarios



Future gas demand for a 1-in-20 peak day



In all scenarios and sensitivities there is an enduring need for gas

Source: National Grid Future Energy Scenarios 2017

Future Energy Scenarios 2017: Sensitivities

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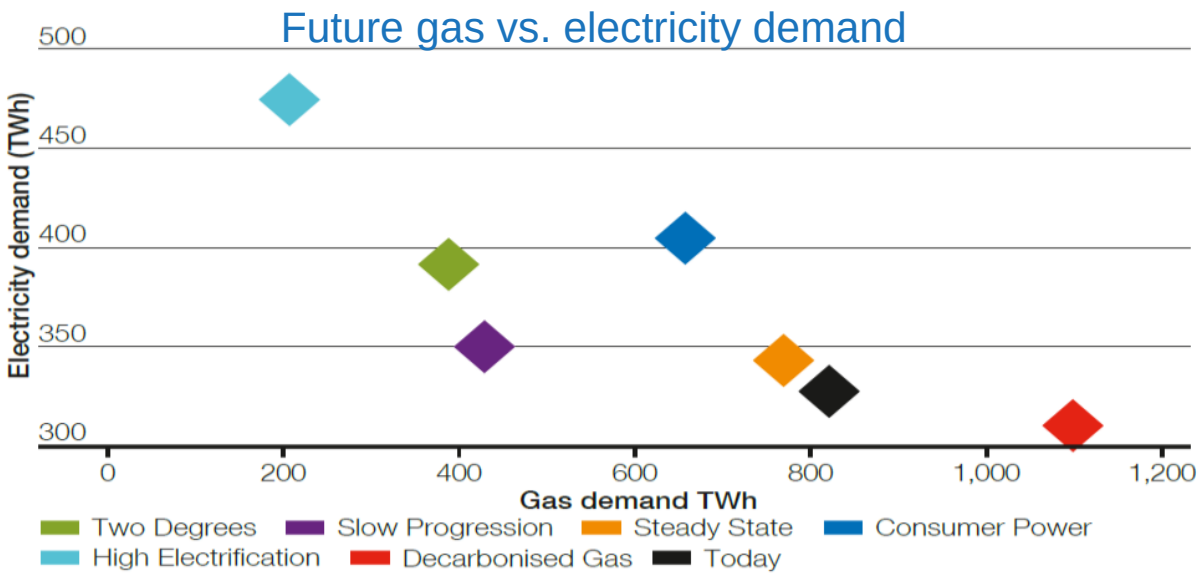
High Electrification

What would happen if society decided we should pursue a more electric future, with more renewable electricity, to help us reduce our dependency on fossil fuels?

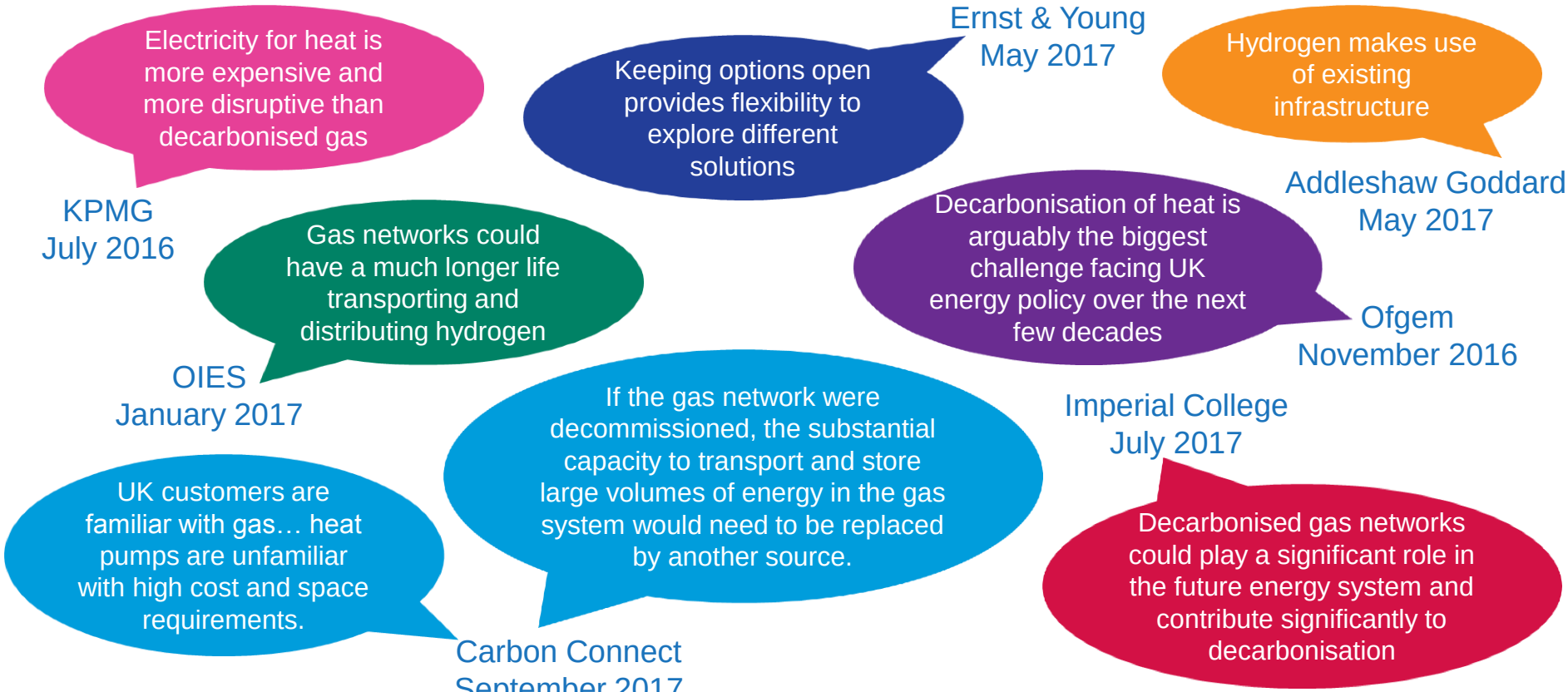
Decarbonised Gas

What would happen if heat was decarbonised through an alternative approach to heat pumps, which still enabled the 2050 carbon reduction target to be met?



Source: National Grid Future Energy Scenarios 2017

External work: Academic and industry reports



Our external learning:
Themes coming from customers and stakeholders

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There is **considerable uncertainty** on decarbonisation policy and approach

Making the **best use of existing assets** (rather than building new ones) will minimise the disruption caused.

Innovation will be essential to achieve decarbonisation – particularly in CCS

No one single technology or solution will achieve decarbonisation in an affordable way. The combination that will emerge remains uncertain.

We need to ensure that ongoing network and market framework development keep as many credible future scenarios **open for as long as possible**.

Gas will increasingly play a **key role across the whole energy system**: delivering flexible power generation to support low carbon generation and supplying energy for heat and transport

Optimising use of existing infrastructure and supply chains will likely be **more affordable than full electrification of heat** / transport.

So what does the future hold for gas? What we now believe…

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1. Gas has an important long term role but as the pathways are uncertain, now is not the time to shut down optionality
2. Gas supports the wider UK economy as it represents good value for consumers and supports industrial processes
3. We need to decarbonise heat but nothing substantial will change for heat in the short term
4. Decarbonising transport with gas is happening today so could be an early priority
5. Supply sources are going to change; we need to consider the market rules to ensure GB remains attractive
6. System operability is going to become more and more challenging, making gas and electricity interactions more important
7. Whilst energy storage is growing in importance, the gas system itself remains a critical store
8. Innovation in gas is imperative: Government, regulators and industry need to work together to investigate and facilitate different technologies, in particular CCS
9. Hydrogen will play a role in the energy future, but how big a role remains uncertain