



# Low-Carbon Heat

Richard Heap

Simon Cran-McGreehin

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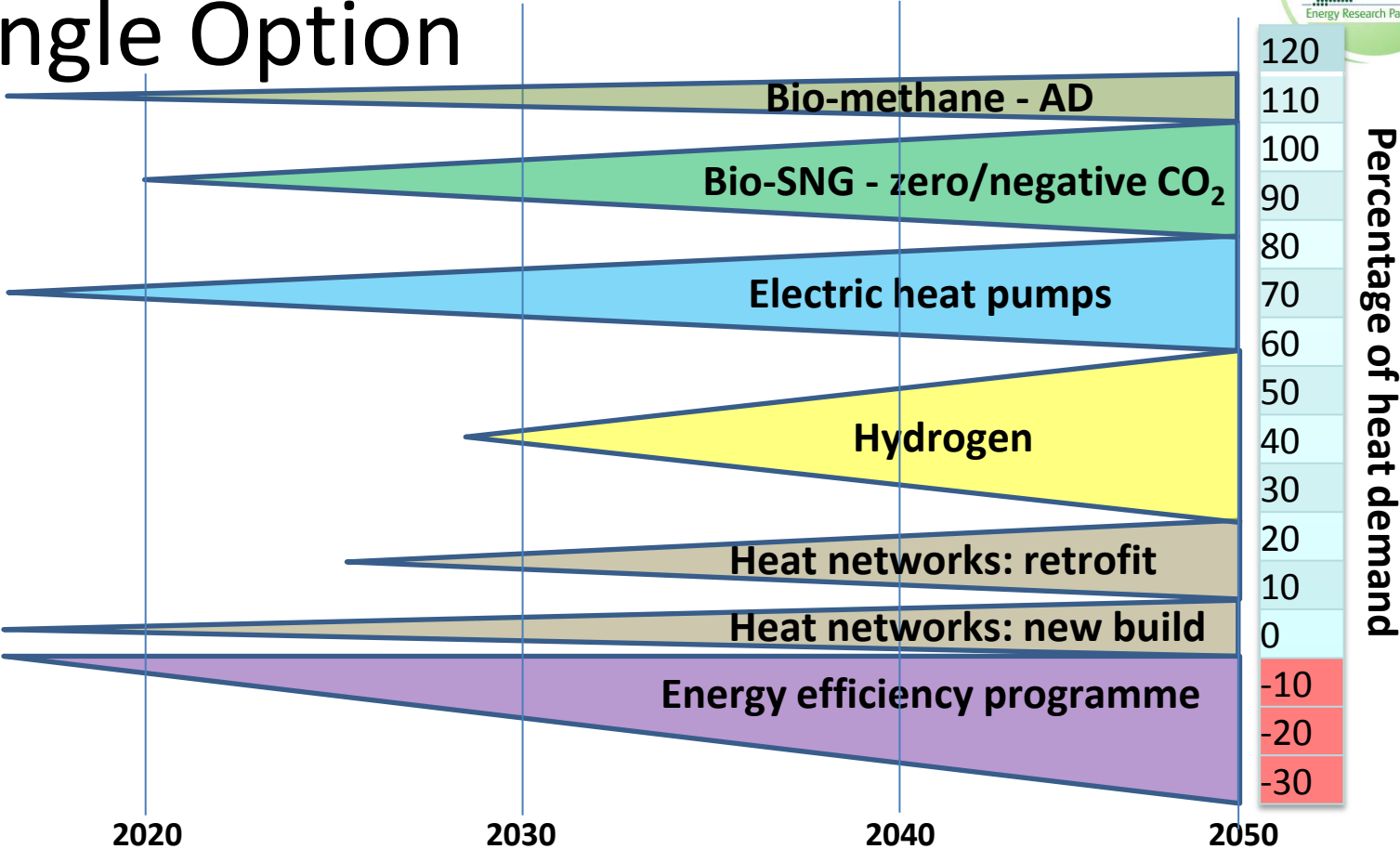
[erpuk.org](http://erpuk.org)

# Key aspects of the transition

1. Constraints on options means no single nationwide solution
  - Regional and segmentary aspects to options
2. Role of the public? Heat delivery options and costs are changing
3. Governance framework to coordinate decision making
4. Timing - Decisions during this Parliament



## No Single Option



## Segmentation of options

- Some are regional
  - Hydrogen: CCS dependent, dedicated pipes & storage
  - Heat Network: heat source, infrastructure
- Some areas will disconnect from gas grid
- Differentiate by segment / characteristic
  - Off-gas grid, old leaky homes, commercial, tower blocks, offices and new build.

## Constraints on options

- Interaction with other energy sectors - Transport
  - Competition for energy vectors: Bio-gas, Hydrogen
  - Interaction with energy distribution infrastructures
- What does a zero-carbon target in 2070-2080 mean?
  - H2 is not zero-carbon, so how will that be supplied.

## Financing

- Different cost and investment profiles for each option
- Different agents and drivers
  - Customer or network led
- How to secure investment?
  - Regulated monopolies
  - Market driven - national or local intervention
  - Service driven market

## Role of Public

- What will happen to the cost of heating?
- How deliver energy efficiency improvements?
- How do they make decisions?
- Decision now or wait for future network changes?

# Decision making framework

- Institutional and governance arrangements
  - Coordinate national / local interactions
- Role for National Infrastructure Commission
- Determine financing mechanisms
- Role of Ofgem
- Confidence to industry



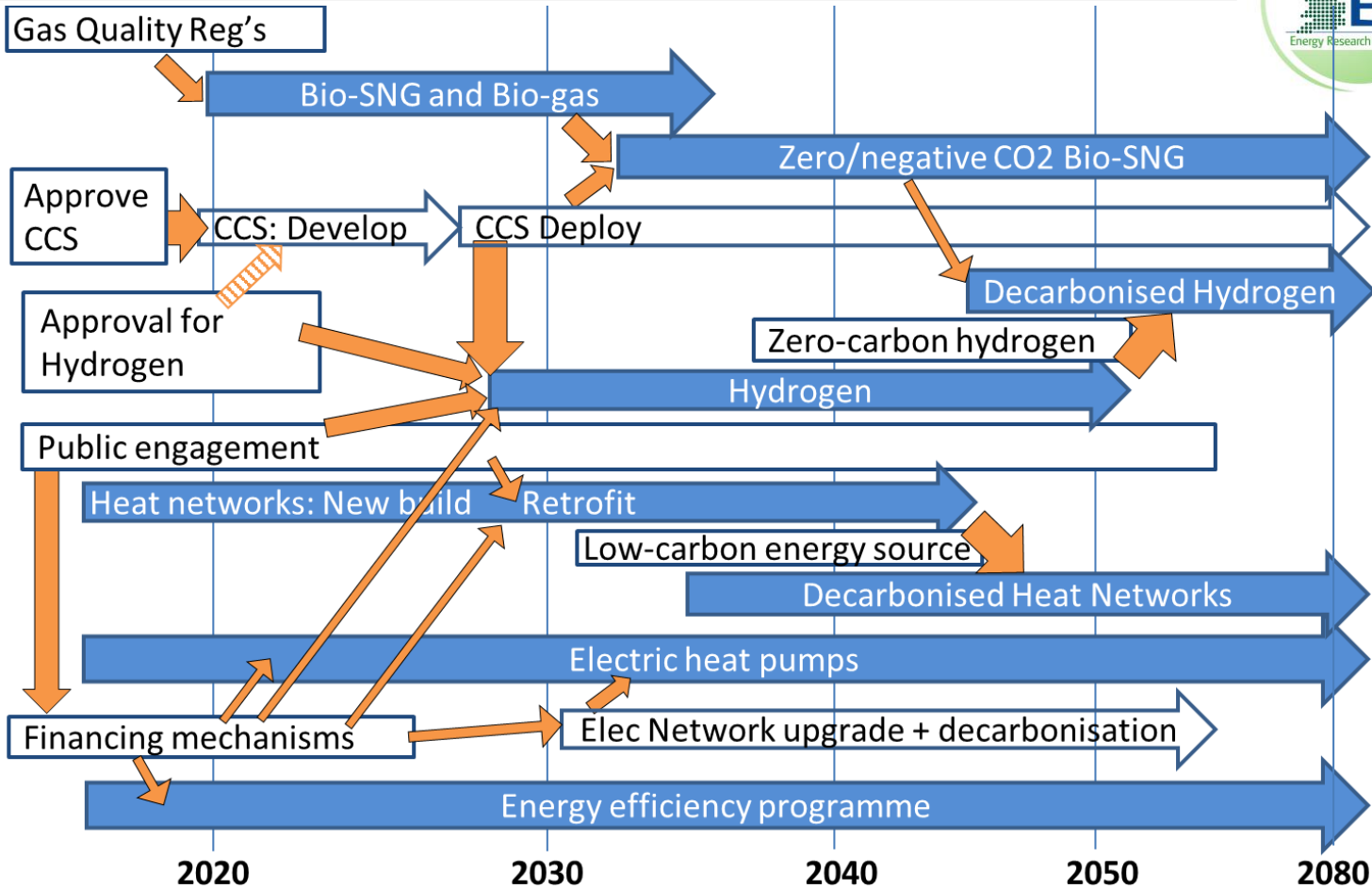
# R&D and trials

- Inform critical decisions in early 2020s
- Address knowledge gaps, uncertainty & reduce risks
  - Well funded, coordinated with knowledge sharing
  - Broad-ranging programme
- Comparative analysis need to include all factors

# Energy Research Partnership



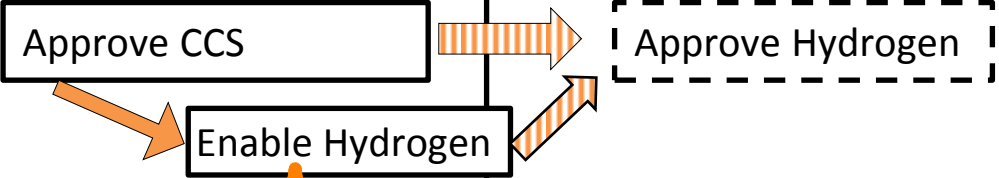
## Timing





## Decisions for this Parliament

Government



Govt, Ofgem, ESC +

R&D / Trials

Ofgem, Government

Financing, Unbundling

Ofgem, GDNs

Gas Quality Regs

Govt, NIC, LAs, Ofgem +

Decision-making Framework

Government

Public engagement

2020

# Key aspects of the transition

1. Constraints on options means no single nationwide solution
  - Regional and segmentary aspects to options
  - Interaction with other sectors - transport
2. How engage with public? Heat delivery options and costs are changing
  - Better outcomes for consumers & appropriate incentives
3. Governance framework to coordinate decision making
  - Local – national interactions
  - Regulations and Financing – determine and manage new mechanisms
  - Supply chain development – business confidence
4. Timing
  - Decisions during this Parliament: to enable a more coordinated and timely transition
  - R&D and trials over next 5-10 years: CCS Hydrogen, Heat Pumps