

Heat in buildings: international solutions to UK challenges

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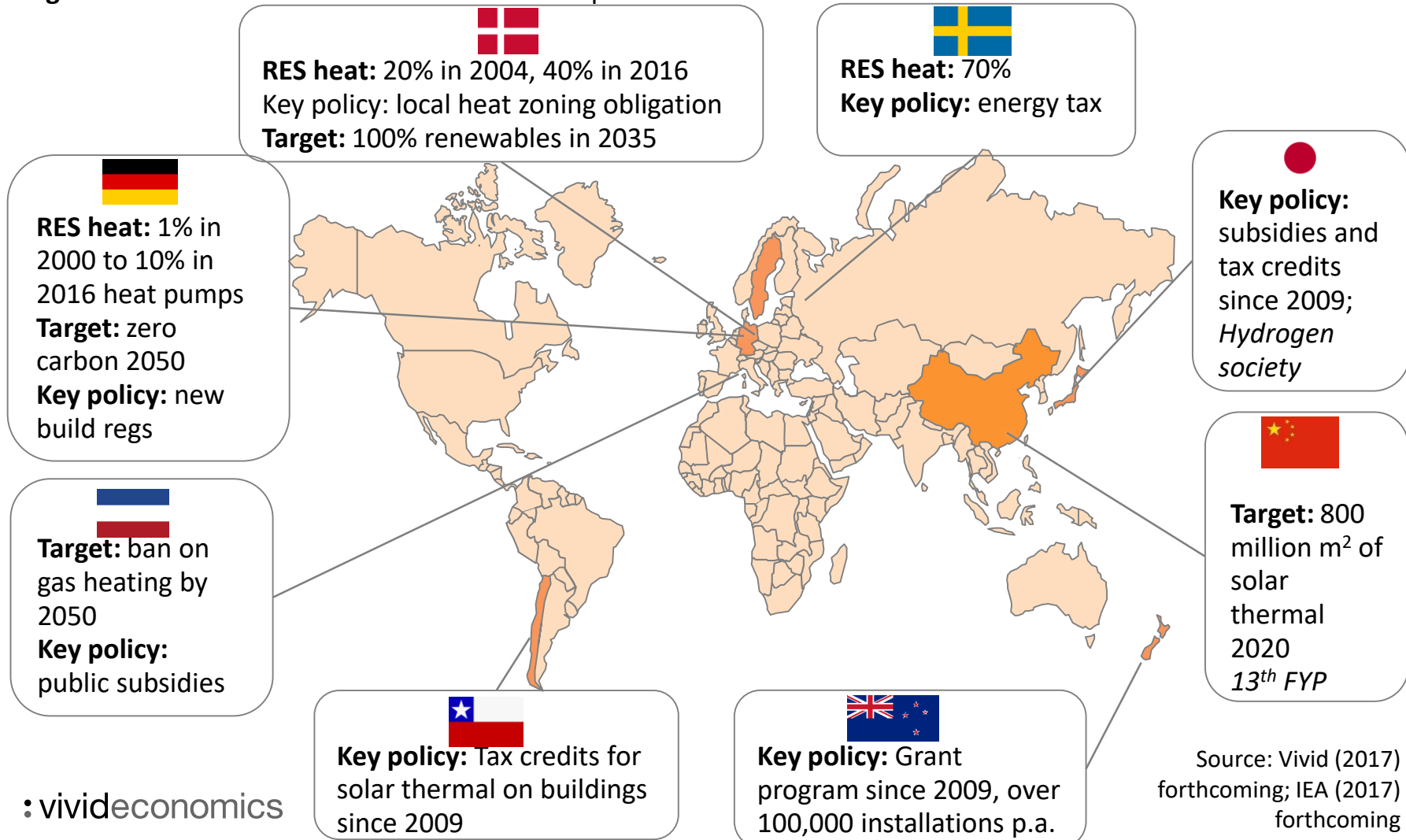
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Overview

1. International case studies
2. UK challenges
3. Lessons for UK heat decarbonisation

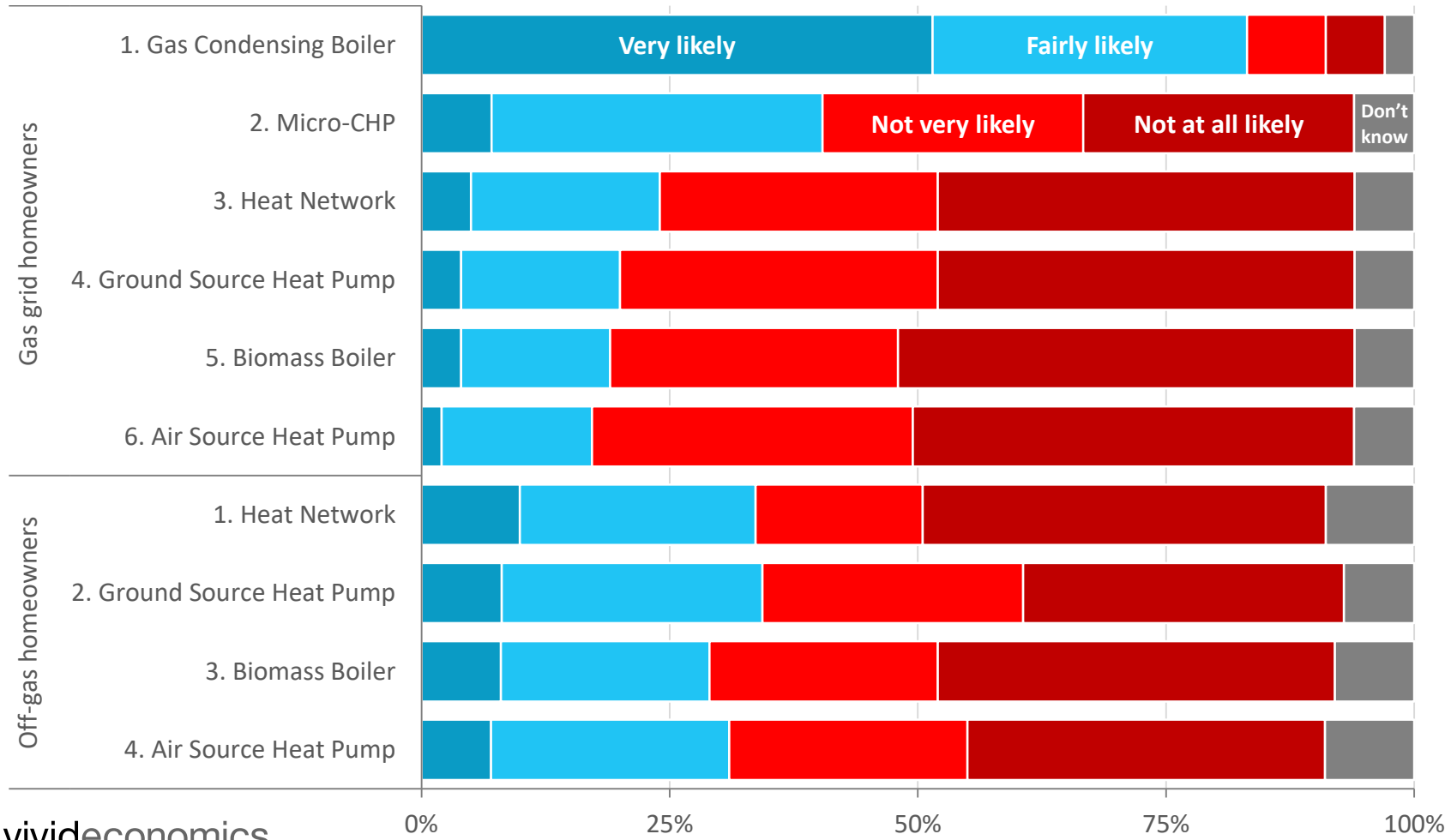
The buildings sector has been slow to embark along the path to decarbonization. Yet, there are some bright spots of activity...

Figure 1 International heat decarbonization snapshots



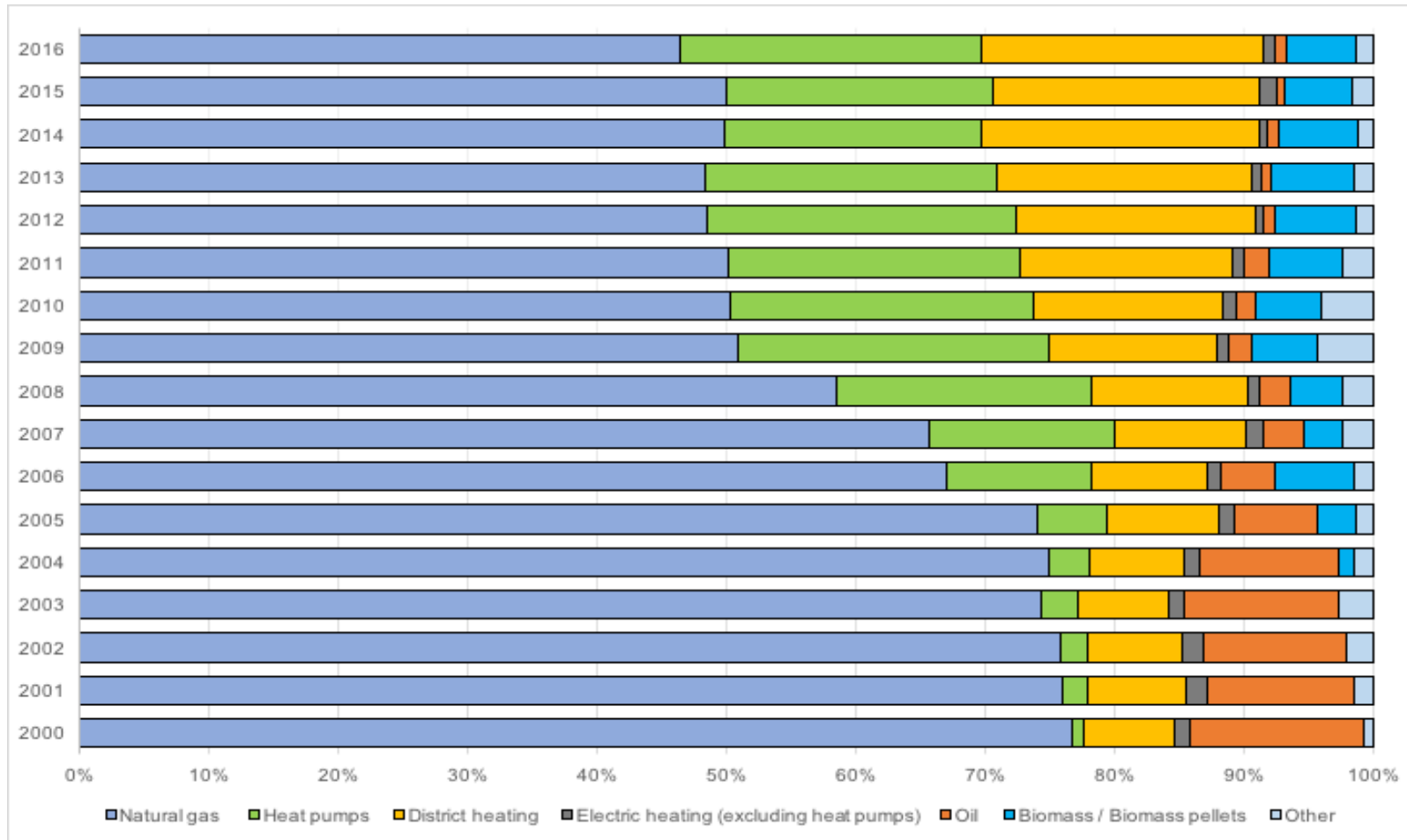
A key challenge is moving away from relatively low-cost sources of energy that form the natural endowment of a nation

Figure 2 Survey: *How likely, if at all, would you be to install each of the following heating systems?*



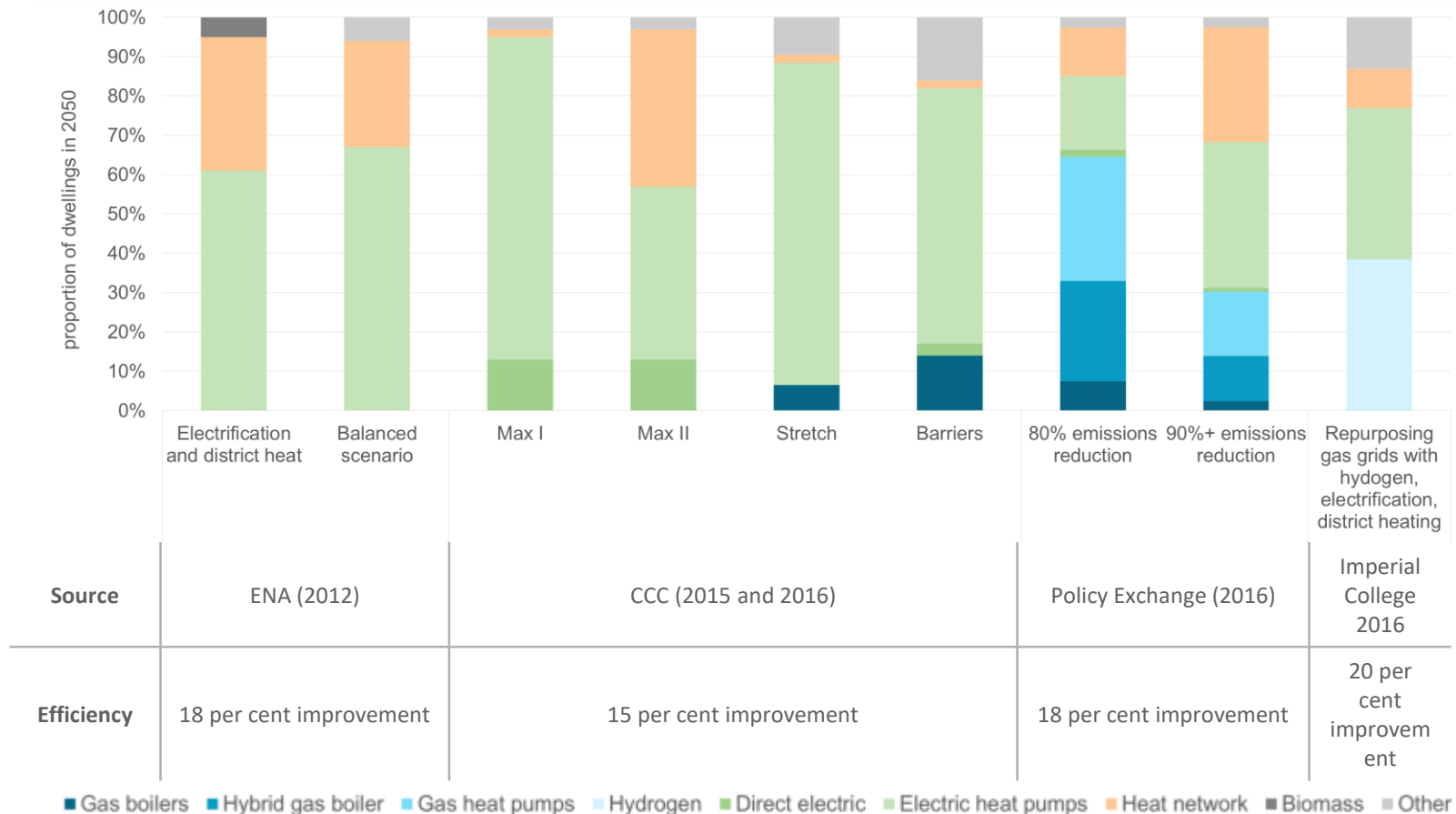
Lessons 1/3: Enable decarbonisation of off-grid and new build

Figure 3 Share of heating in new builds (Germany)



While there is divergence over how UK should decarbonisation, there is relative consensus offgrid and new build segments

Figure 4 Technology penetration rates in 2050 from recent studies



Lessons 2/3: Pursue policy packages that address multiple market failures, and policy stability

MARKET FAILURE	CASE STUDIES
Lack of information	Swedish Energy Agency: crash in sales in the 1980's due to unproven technology, led to focus on testing models and publishing poor results, and rapid growth in 1990's/2000's
Innovation and testing	
Carbon externality	Carbon tax: Sweden Subsidies: Netherlands, Germany, France Regulation: Netherlands and Norway on gas
Natural monopoly	Local heat zoning in Denmark, planned by local government

Lesson 3/3: Pursue customer-centered policy

- Maximise performance (e.g. testing, safeguards)
- Minimise disruption (e.g. use refurbishments to trigger upgrading)
- Fit within expected paybacks (e.g. upfront payments)

Table 1 Customers payback periods for renewable heat technologies

Segment	Proportion of customers willing to pay		
	30%	50%	70%
Private landlord	2 years	1-2 years	1 years
Owner-occupier	3-4 years	3 years	2-3 years
Social landlord	5-6 years	4-5 years	3-4 years

Summary

KEY MESSAGES



1. Enable decarbonisation of off-grid and new build

Address the 7 m new homes and 5 m off grid homes in 2050



2. Pursue policy packages that address multiple market failures, and policy stability

Policy packages are required, covering innovation, information failures, and combining regulations and subsidies to maximise suitability, integrate with fuel poverty goals



3. Policy needs to be customer centered

Subsidies should fit within consumer payback periods; policy packages including information and R&D to improve quality and control

Is there anything we can learn from power sector success?

- Possibly not
- Expect the unexpected (solar thermal cost breakthrough?)
- Stable policy is effective policy
- Recognise value of flexibility provided by coupling power and heat systems

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Company Profile

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We are a premier consultant in the policy-commerce interface and resource and environment-intensive sectors, where we advise on the most critical and complex policy and commercial questions facing clients around the world. The success we bring to our clients reflects a strong partnership culture, solid foundation of skills and analytical assets, and close cooperation with a large network of contacts across key organisations.

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