Future Energy Scenarios

Market Profile and Opportunity for Heat Pumps

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Where Heating Fits In Green Policy

Virtually zero carbon buildings by 2050...

£33bn spent on heat across the economy

1/3 of overall UK energy demand is heat lead

3/4 of heat demand is for homes

£1bn = value of heat lost in buildings 2010/11!!

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The Heat Challenge (Current vs 2050)

Domestic Heating

600,000 domestic heat pumps

Declining boiler sales

240,000+ heat pump sales per annum

Early stage regulation (energy label A+?)

2020

2012

2030

24 million boilers (all fuels)

1.5 million boilers sold every year
(biggest boiler market in Europe)

c. 90% of consumers rely on installers
to specify their heating system

20,000 heat pumps sold max.

6,800,000 domestic heat pumps

Continued boiler decline

>½ m heat pump sales per annum

Regulated market (Heat Pump specific)

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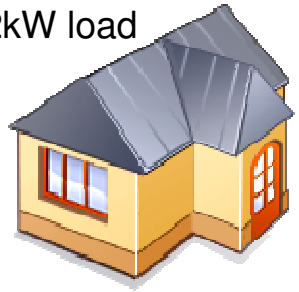
The Heat Challenge (Heat Pump Platform)

Policy Objective 1

12kW load



INSULATE

6kW load

Policy Objective 2

Inefficient Heat Generator

UPGRADE

Efficient Heat Generator

Key Methods – Incentives and Regulations

Market Objectives

Design/installation capacity

Networks investment

Product Innovation

Consumer education

Tariff innovation

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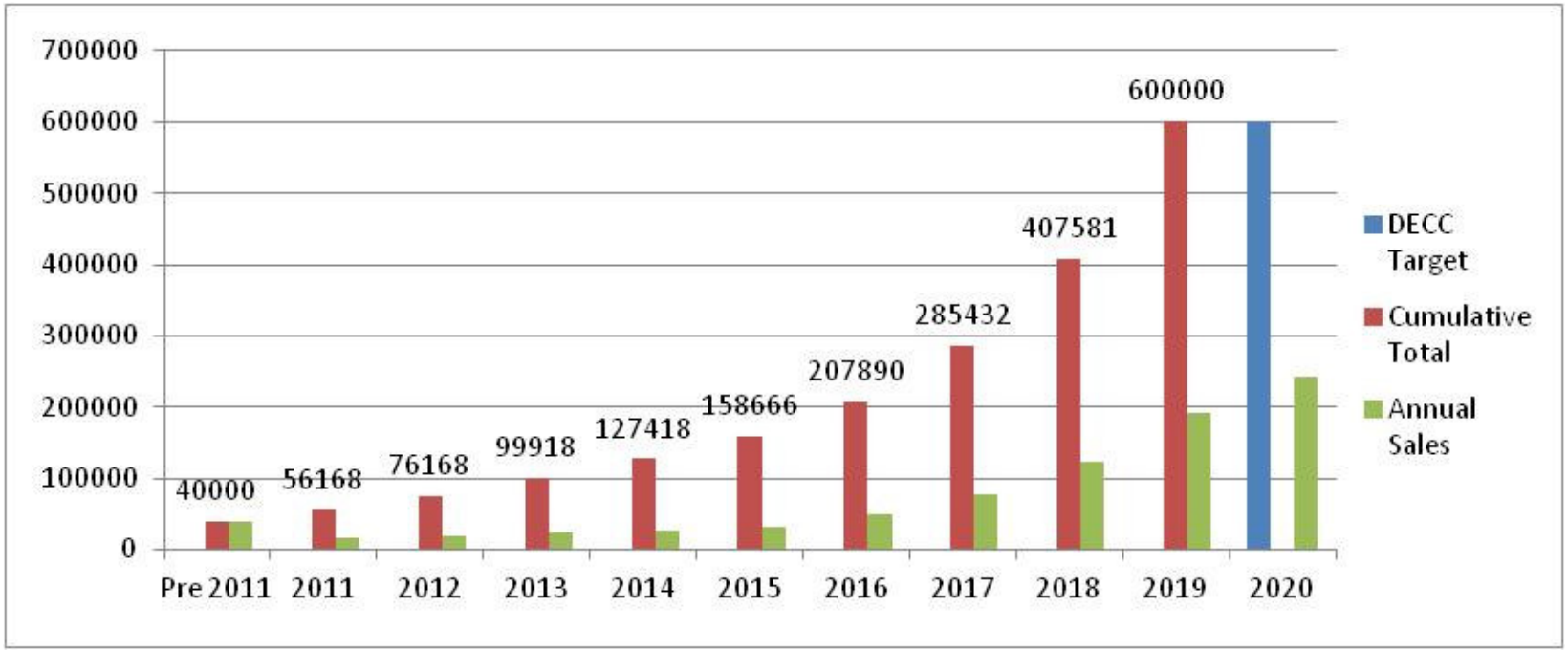
DECC Scenario and Heat Pump Projections



- Growth based on accelerated +50% growth post 2015
- Hard to predict immediate impact of RHI but capacity needs building
- Most installations up to 2020 will be off gas network
- Current main driver for sales is social housing but can shift:
- New build requires rapid ambition in targets
- Private domestic households need finance mechanisms to unlock capital

Heat Pumps – An Off Grid Proposition Now

Comparing systems

Running Cost and Capital Cost Comparisons (3 bed semi, 89m2, 4 occupants)					
	Air Source Heat Pump (SPF 2.6)	**Ground Source Heat Pump (SPF 3.5)**	**Oil Condensing**	**Oil non-condensing**	**Electric storage**
Running Cost	**£697**	**£591**	**£1,026**	**£1,539**	**£1,144**
Capital Cost	**£6,650**	**£10,500**	**£3,000**	**N/A**	**£1,500**
Notes:	**7kW (£950/kW) No system upgrade**	**7kW (£1,500/kW) No system upgrade**	**No system upgrade**	**An upgrade would be minimum £3,000**	**2 storage, 4 panels + towel rail**

Notional RHI

	Incentive(p) /kWh	Multiplier (kWh)	Duration (years)	Annual Return (£)non RPI	Total Return (£)non RPI
Air Source	10	16,080	7	£1,608	£11,256
Ground Source	16	16,080	7	£2,573	£18,011

The 7 Year Outlook

	Annual Running Costs	7 year running cost	7 year income generated	7 Year net running costs
Oil Condensing	£1,026	£7,182	£0	£7,182
Oil non condensing	£1,539	£10,773	£0	£10,773
Electric heating	£1,144	£8,008	£0	£8,008
Air source heat pump	£697	£4,879	£11,256	(£6,377) **Surplus**
Ground source heat pump	£591	£4,137	£18,011	(£13,874) **Surplus**

Payback Potential

Payback (without RHI)				**Payback (with RHI)**			
	Oil non condensing	Oil condensing	Electric Heating		Oil non condensing	Oil condensing	Electric Heating
Air source	4.3 yrs	11 yrs	11.5 yrs	Air source	2.1 yrs	2.9 yrs	3.8 yrs
Ground Source	8 yrs	17 yrs	16.2 yrs	Ground source	2.6 yrs	3.1 yrs	3.6 yrs

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Conclusion

The market outlook is dependent on...

- An attractive Renewable Heat Incentive set against rising fuel prices that expands market beyond off gas
- A successful Green Deal that deals with the housing stock to prepare for heat pump growth
- Planned growth based on ‘hot spotting’ to manage capacity building and infrastructure development
- Government consistency and **market confidence**

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Thank You

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