The Clean Growth Challenge, Heat & Heat Pumps

20 Sep. 2018, GSHP Members' Day

Department for Business, Energy & Industrial Strategy

UK Industrial Strategy - Great Challenges

Maximising the advantages for UK industry from the global shift to clean growth

Boosting productivity and earning power:

Grand Challenges to put the future of the UK at the forefront of the industries of the future:

AI & Data Economy
We will put the UK at the forefront of the artificial intelligence and data revolution

Future of Mobility
We will become a world leader in the way people, goods and services move

Clean Growth
We will maximise the advantages for UK industry from the global shift to clean growth

Ageing Society
We will harness the power of innovation to help meet the needs of an ageing society

The Clean Growth Challenge

Maximise the advantages for UK industry of the global shift to clean growth: build on strong position for development, manufacture and use of low carbon technologies, systems and services that cost less than high carbon alternatives

Clean Growth Focus - Why ?

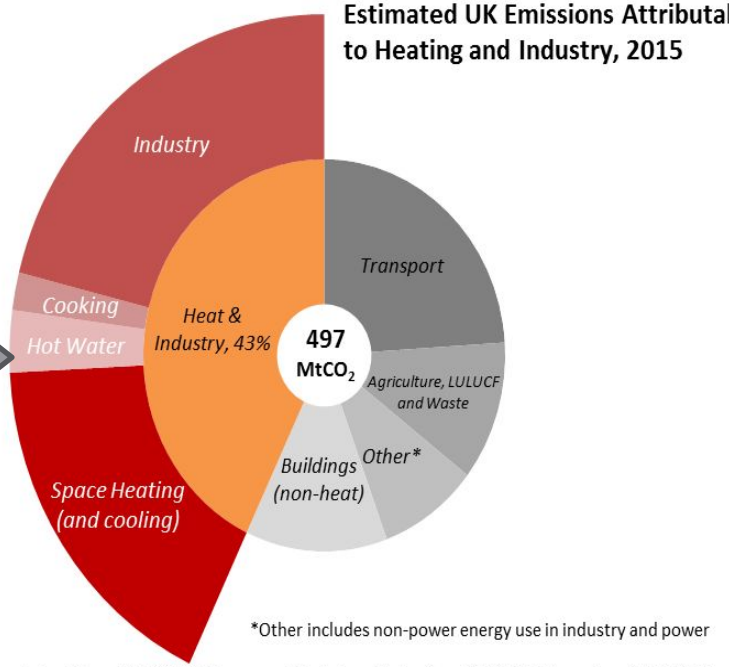
- to **meet the fourth and fifth carbon budgets** (2023-2032) we will need to drive a significant acceleration in the pace of decarbonisation. New government interventions will be needed across all sectors of the UK's economy. The Clean Growth Strategy addresses these.
- The commitments made in **the Paris Agreement** will require significant investment of public and private capital (clean energy technologies are estimated to account for over 85% of the $10.2 trillion investment in power generation capacity by 2040). For instance, lithium-ion batteries for energy storage predicted to become a $20 billion per year market by 2040, a tenfold increase from today.
- Increasing confidence in the **global transition to low carbon/clean growth:** Combination of Paris Agreement, cost reduction, strategic approach of certain countries such as China mean we can have a high degree of confidence these investments will be made. There is evidence of this shift already in a range of sectors (incl. power and transport). In 2016, global EV industry revenue was > $2 trillion.
- UK enjoys a **strong position** in a number of low-carbon sectors (most offshore wind generation built anywhere in the world, in 2017 1 in 8 battery electric cars driven in Europe was built in the UK, the London Stock Exchange has issued nearly 80 green bonds ($24bn) in seven different currencies). Need to act to retain this leadership.

Heat is biggest Source of Greenhouse Gas Emissions

PM announced a first clean growth mission in May this year: *"… at least halve the energy use of all buildings by 2030"*

- **Heat accounts for almost half UK energy consumption** …for space heating, water heating, cooking and industrial processes.
- **Heat is the biggest source of greenhouse gas emissions**…over one third of UK emissions.
- **If we are to meet our 2050 Climate Change targets**…we will need to decarbonise nearly all heat in buildings, and much industrial heat.
- **No / Low regret options** are being pursued already… as exemplified in Clean Growth Strategy and Future Frameworks consultation – policies aiming for "post-RHI", 2020's
- **Transformational change**, far beyond that set out in the Clean Growth Strategy, will be required to decarbonise nearly all building heat and most industrial heat – policies are thus aiming for 2025 and beyond

In 2015, 22% of emissions were from heat in buildings (15% domestic, 7% non-domestic).



Source: BEIS estimates derived from ECUK 2016, Energy and Emissions Projections 2016, GHG Inventory 2017, BEIS IAG guidance 2017

How can the Ambition be delivered?

Maximise the advantages for UK industry of the global shift to clean growth: build on strong position for development, manufacture and use of low carbon technologies, systems and services that cost less than high carbon alternatives. Some thoughts:

- **Energy Efficiency** for housing**:** to go beyond easily accessible wall and roof insulation, deeper retro-fit measures and standards for new-built housing need to be addressed. New housing design as much under consideration as cooperation with MHCLG on part L of buildings regulations, is due in Spring 2019. Public sector procurement can play a role, including for 3.9m social housing units. National Infrastructure Commission made recommendations for targeted funding and minimum standards.
- **Heat Production:** installing heat pumps instead of gas boilers has potential to reduce household energy consumption by around 50%. The challenge is to address the higher investment cost. RHI is addressing this concern via new AoR rules within current Spending Review Budget.
- **Heat Networks:** preparation for next round of grant and loan support under way, with delivery agent procured. C. £280m budget for support available in next rounds.
- **"Nega" – Watts**: energy demand reduction through better appliances, improvements to SAP to include smart technologies, heating controls, batteries, etc. Increasingly moving from modelled to actually measured home energy performance will have to play a role. Government response to consultation on regulating smart appliances to be published soon.

RHI Reforms & Policy

The RHI remains the largest renewable Heat Support Scheme within the Clean Growth Strategy

Earlier reforms ("Package 2") already introduced:

- Introduction of **demand deeming** based on EPCs and eligibility of **shared ground loops**

The Government Response to the remaining issues covered by the Further Proposed Amendments Consultation was published alongside negative regulations on 29 May 2018 covering:

Current Regulations ("Package 3"):

- Removal of **staggered commissioning for biomethane** installations (CIF 20 June 2018);
- **Replacement plant** provisions on Non-domestic scheme (CIF 1 October 2018);
- Changes to circumstances under which '**estimated data**' can be submitted (CIF 1 October 2018);
- Clarification that RHI installations must have the necessary **environmental permits** (CIF 1 October 2018);
- Introduction of **Assignment of Rights** on the Domestic RHI (CIF 1 October 2018);

to be introduced in a later package of regulations:

- Limiting payable heat to **very large plant** to 250GWh per annum; and
- Combine **multiple installations on single site** for tariff purposes.

Urban Biomass

- **Defra's draft Clean Air Strategy** (consultation run 22 May to 14 August) proposes that the government minimise the air quality impacts of the RHI, including by consulting on excluding biomass from the RHI if installed in urban areas which are on the gas grid
- Intention to issue an **RHI consultation**
- May need State Aid clearance too

What does it mean for the Heat Pump industry?

Heat Pump industry supply chain in better shape, realising increased project pipeline ? Focus now on post-RHI period. Some thoughts…

- Industry is reporting solid project pipelines, with steady increase in retrofit deployment for air-source and ground source systems. Increasing focus on the RSL sector.
- Recent RHI reforms have resulted in increasing HP industry dynamic (shared ground loops, demand deeming) – some further growth to be expected from AoR from October 1st.
- A renewal of the of the £23bn RHI in its current form is unlikely.
- Regulation for new-built sector looks to be addressed – with tightening building standards supported by the Industrial Strategy Building Mission.
- Industrial Challenge and Buildings Mission is moving regulation in direction favourable to heat pump deployment.
- Attention should move to observing (a) what Ministers chose to announce during Green Great Britain Week, and (b) which suggested measure and reforms receive which funding during next year's Spending Review.

Thank You.