

Energy and Climate Policy and the Cooling Industry in the Post-Brexit Era Institute of Refrigeration Policy Brief May 2017

As we prepare to enter the post-Brexit era the cooling industry and UK Government need to consider the effectiveness of energy and climate policy frameworks. To better understand the impact of existing European 2020 Climate and energy package climate and policy frameworks the Institute of Refrigeration held a briefing meeting on the future of energy efficiency in the cooling industry in March 2017. The meeting included input from policy and industry experts from across Europe.

Current policy frameworks

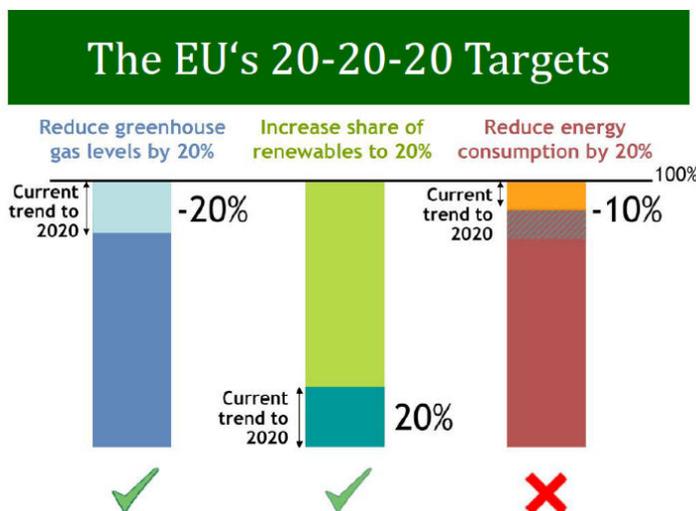
Much of the innovation in the UK cooling industry have been driven in recent years by legislation – often originating in Europe. The F Gas Regulations have changed how we use refrigerants, Energy Performance of Buildings Directive has changed how we air condition buildings, Ecodesign Directive changed how we design products.

The EU 2020 Climate and Energy Package European policy framework, known as the “20-20-20 Climate and Energy package” was launched in 2007 and set three binding energy and climate targets for the year 2020 for all member states:

- 20% cut in greenhouse gas emissions (from 1990 levels)
- 20% of EU energy from renewables
- 20% improvement in energy efficiency

Awareness of the package may not be particularly high in the UK but it has had influences throughout the sector through legislation, targets, funded research and financial incentives. End user commitments to finding better ways to consume energy and more efficient cooling solutions has driven research and development in refrigeration, air conditioning and heat pumps.

How successful has the 20-20-20 climate and energy package been?



Source: EU Commission reported by EPEE the European Partnership for Energy and the Environment

There has been reasonably good progress towards achieving these 20-20-20 targets in the EU as a whole. The 20% reduction in greenhouse gas emissions and 20% increase in renewable energy generation are likely to be achieved by 2020. But it is estimated that reductions in energy consumption are only likely to be 10% compared to the baseline, which means that new more effective investment and incentives for improved efficiency are needed.

Whilst it is good news that the proportion of energy generated from renewables has increased, the current targets no longer appear sufficiently ambitious and some are calling for new more ambitious targets for 2030 and 2050. However, new targets would require more flexible policy throughout European member states and unfortunately this is not always the case.

What more could be done?

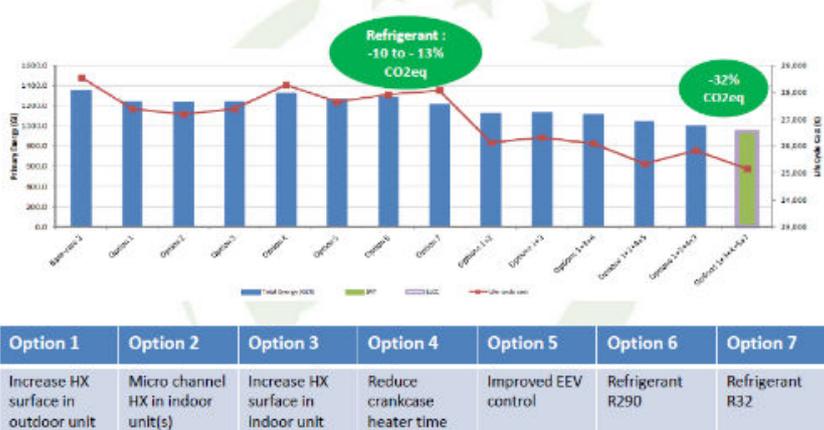
The IOR-IRC meeting discussed many aspects of opportunities to reduce energy use in the cooling industry – focusing on the indirect impact of emissions. The general conclusions, from the perspective of effective policy frameworks and influences are as follows:

1. Taking a more systems-based approach to incentives

Regulations such as Ecodesign and Energy Labelling are helping to drive up the efficiency of equipment placed on the market and remove less efficient models from the supply chain. The savings potentials for the refrigeration and air conditioning sector are huge, but only if we get the balance right by using the technologies and measures in the right combination to achieve the best results. This includes having the right skills and knowledge levels in the workforce and ensuring that legislation or incentives are effective. For example, the industry has put a lot into the various reviews and implementing documentation around the Energy Performance of Buildings Regulations, but this is still not achieving the necessary outcomes. Such regulatory approaches should be industry-led in future if they are going to be effective in achieving efficiency results.

But only if we get the balance right: A mix of measures achieves the best results

Example: LLCC Analysis of a single Split HP >12kW



Source: Least Life Cycle Cost (LLCC) analysis, Ecodesign Lot21 (central heating products that use air to distribute heat), Preparatory study, BIO Intelligence Service 2012

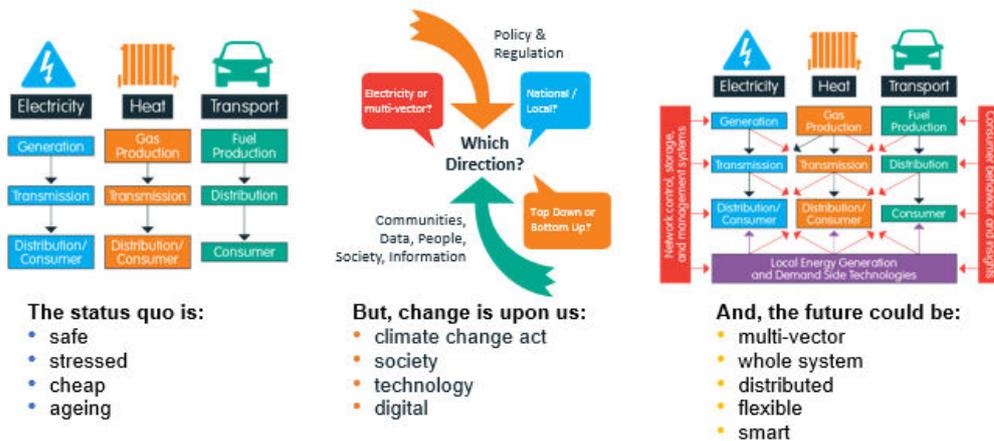


2. Encouraging the development of energy systems and infrastructures

The availability of an appropriate infrastructure is critical to supporting growth in the use of renewable energy. Managing variances associated with renewable energy supplies is a particular challenge. The introduction of smart, flexible and multi-vectors systems and grids could go some way to addressing this. Demand side management is another critical factor to reducing peak demands and avoiding the risk of grid overload.

Our local energy system is changing

CATAPULT
Energy Systems



Source: Philip New, Energy Systems Catapult

3. Making better use of recovered thermal energy

This approach should be explored more widely. New technologies can facilitate efficient application, recovery and re-use of thermal energy in industrial scenarios. Neighbouring businesses could for instance adopt smart solutions to pool resources and spend on infrastructure with local co-operation on energy sharing. The potential for larger scale solutions for cold energy storage systems such as Highview Power Storage in Manchester and the CryoHub technology which uses liquid air energy storage linking refrigerated warehouse and renewal energy sites could be further developed.

4. Mechanisms to support the use of clean energy

If the cooling industry wants to benefit from “clean energy” generated by renewables, it will have to work hard to encourage government to pursue policies to support the use of renewables in the face of practical barriers such as the current cheap gas prices, the high cost of providing new infrastructures and the difficulties of balancing supply and demand.

What will the UK climate and energy strategy look like post-Brexit? The outlook for the UK

The UK Government’s green paper “Building our Industrial Strategy” issued in January 2017 set out ten key principles or “pillars” to support, strengthen and develop industrial and economic growth and productivity covering areas such as skills, science, innovation, clean energy, infrastructure and growth. Each pillar sets ambitious objectives to address what have been identified as the most important future challenges for UK industry. The cooling industry, as a significant energy user, dependent on science and innovation, and employing a highly skilled workforce, has the potential to contribute to these strategic industry issues through investment in science, research and innovation, skills and delivering affordable energy and clean growth.

To do this successfully it will need the UK Government to reinforce its commitments to environmental objectives, existing policies and energy targets. Whilst the global community remains committed to the phasing down of HFCs agreed as part of the Kigali Amendment and the GB F Gas Regulation remains in force in the UK it is unlikely that the phase down and use bans for HFC refrigerants or the need to invest in lower GWP refrigeration cooling solutions will be affected by Brexit. However there is a risk that without any legally binding climate targets in the UK post-Brexit there may be no obligations for UK industry to comply with renewables take up and fossil fuel reduction targets, and the achievements that UK industry has made in these areas could stall as a result. This would result in the UK lagging even further behind many of its closest neighbours in Europe in achieving energy efficiency and carbon reduction savings based on business investment in innovation. With refrigeration applications estimated to account for around 16% of energy use this could contribute to increasing pressure on energy security and stability of supply in the future.

UK Government should not let Brexit get in the way of its environmental legislation and energy target obligations. The UK cooling Industry has taken a lead in many of the EU environmental policy negotiations and target setting and continues to collaborate on innovation internationally. UK legislation will need to mirror EU legislation where industry needs are similar. In order to achieve this Government will need to consider how the UK industry can be represented in Europe as a non-member and ensure that it maintains an influential input on energy and climate policy matters.

Footnotes

1. The Building our Industrial Strategy green paper published in January 2017 set out 10 Pillars.
 - 1) Investing in science, research and innovation
 - 2) Developing skills
 - 3) Upgrading infrastructure
 - 4) Supporting businesses to start and grow
 - 5) Improving procurement
 - 6) Encouraging trade and inward investment
 - 7) Delivering affordable energy and clean growth
 - 8) Cultivating world-leading sectors
 - 9) Driving Growth across the whole country
 - 10) Creating the right institutions to bring together sectors and places
2. “Energy Efficiency and the Future – Gaining Business Advantage from the EU 20-20-20 Environmental Legislation” was held on 2nd March 2017 in London. This policy brief is based on the discussions and presentations at that meeting. This included inputs from research bodies, manufacturers and non-governmental organisations across Europe.
3. The International Refrigeration Committee of the IOR provides UK national representation at the inter-governmental organisation The International Institute of Refrigeration (www.iifir.org). It is supported by nine UK companies with a secretariat provided by the Institute of Refrigeration a UK registered charitable incorporated organisation promoting the advancement of refrigeration application for the public benefit. www.ior.org.uk/internationalrefrigerationcommittee
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