

Electricity for clean and efficient Heating and Cooling: 8 Key recommendations from EU Stakeholders

The European Copper Institute (ECI) supported by the European Partnership for Energy and the Environment (EPEE), the European Building Automation and Controls Association (eu.bac) and the European Heat Pump Association (EHPA) welcome the launch of the Heating and Cooling strategy by the European Commission and its effort to link electricity and Heating and Cooling in order to decarbonise energy systems.

In 2015, ECI organised a series of workshops involving industry stakeholders, NGOs and policy makers to debate the role of electricity in the Heating and Cooling strategy and bring concrete ideas on how to decarbonise and make Heating and Cooling more efficient.

As a result, 8 key recommendations were formulated to help guide the European Commission in the implementation of the Heating and Cooling strategy and the upcoming revisions of relevant EU legislation.

1. Promote the electrification of industry thermal processes to enable demand side response and integrate renewables

In the medium term, Electro-Processing of Materials (EPM) technologies¹ could replace fossil fuels and help decarbonise the industry. The switch to electricity for industrial thermal processes is suitable and feasible provided that the right market conditions are in place and that investments in new equipment are made gradually. Through the electrification of industrial processes, demand side response and management can be greatly expanded, benefitting the electricity market overall. EPM technologies would also improve the environmental performance and competitiveness of European industry, unlocking greater energy efficiency and productivity benefits while introducing innovation.

2. Foster residual heat recovery using heat pumps

Heat pumps can upgrade residual heat flows to useable temperature levels in many industries that require moderate processing temperatures. The use of industrial high temperature heat pumps can bring significant primary energy savings and support decarbonisation of many industrial sectors. A redesign of processes to facilitate the use of lower temperatures enhances the potential of heat recovery significantly. Heat pump technology creates a stronger link between heat consumption and electricity production, with its subsequent benefits.

3. Improve recognition of building automation as an enabler of energy efficiency in its own right

Building automation is the crucial link between the implementation of nearly-zero energy buildings and the deployment of European smart grids. More broadly used, it would improve the actual energy performance of buildings (operation phase) and represents the underpinning information tool for continuous improvement. The untapped potential of building automation could bring from 13 to 22% annual energy

¹ EPM or Electro-Processing of Materials is the part of an industrial process using electricity and electro-magnetic force to produce and/or treat different products. EPM technologies, such as resistance, infrared, induction, or electric plasma, are used for a great number of industrial processes including melting, hardening, drying, forging, or coating, for a variety of applications (e.g. metal casting, drying fibres, etc.).

savings² for the entire building sector, avoiding heating and cooling wastage thanks to effective controls. The return on investment is 9 times higher than the investment costs. As building automation is a system-level solution, to effectively deliver these savings, existing legislation needs to be adapted to become more supportive in its deployment. Alongside this, harmonised guidelines and mandatory standards should also be developed.

4. Promote investment based on the synergies between energy efficiency and demand response

Giving incentives for the coupling of these measures would be a factor increasing investment since it reduces risks. For example, demand response and energy efficiency are highly complementary in buildings where they require similar technologies. Therefore, they offer a low marginal cost and can change the economics of controls. Exploiting the potential of controls for both energy efficiency and demand response purposes may double the return on investment in comparison with energy efficiency only.

5. Incentivize package financing to foster investment for building renovation

Due to the fragmented nature of the sector, strengthening package financing will be key for building renovation. It would allow using the short payback time of 'low hanging fruit' solutions to help finance other complementary solutions. Individual measures are by their nature simpler, but end up not realising the full energy efficiency potential and all the other side benefits (e.g. DSM/DSR).

6. Devise system level solution(s) through cross-cutting energy legislation

We welcome the Commission's increasingly systematic approach in tackling horizontal topics by addressing multiple different pieces of legislation in parallel. Energy efficiency of products is well defined in EU law, but there are few requirements on how a product is integrated in a system (i.e. designed, installed, maintained and optimised for minimum consumption). The revision of the EPBD, EED, ErP, and Market Design legislation present an opportunity to improve energy efficiency from a horizontal perspective. For instance, Article 8 of the EED could be linked to Articles 4, 8, 14 & 15 of the EPBD to assess technical building systems and fulfilment of maintenance requirements. Valorising system-level will help fill a gap without additional administrative burden and automatically make solutions economically more interesting.

7. Promote mandatory building efficiency requirements in Energy Efficiency directive

Linking Article 8 of the EPBD on Technical Building Systems, where Member States may encourage building automation systems, with the mandatory Energy Obligation Schemes in Article 7 of the EED, where Member States decide on their policy measures, would be an elegant and powerful way of promoting a system-level approach in existing legislation.

8. New Market Design should ensure proper energy pricing

Market design will be key to give value to flexibility through market prices and speed up the uptake and correct integration of renewable energy sources. In order to trigger energy use behavioural changes, consumers' ability to react to and adapt their consumption to the price of electricity should be improved. Greater access to tailored information on e.g. actual energy performance of the building per technical system, energy costs, carbon footprint, enhanced interaction with smart metering and automated energy systems will enable this change.

² <http://j.mp/BAsavingsEU>