



European Economic and Social Committee

TEN/591
EU Strategy on Heating and Cooling

OPINION

European Economic and Social Committee

**Communication from the Commission to the European Parliament, the Council, the European
Economic and Social Committee and the Committee of the Regions –
An EU Strategy on Heating and Cooling
[COM(2016) 51 final]**

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Consultation	European Commission, 16/02/2016
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Section responsible	Section for Transport, Energy, Infrastructure and the Information Society
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Outcome of vote (for/against/abstentions)	229/3/3

1. Conclusions and recommendations

- 1.1 A strategy focussing on heating and cooling, with their direct, everyday impact on all EU citizens, is long overdue and is most welcome. If best practice is followed and a consistent policy framework established and supported by available finance there are many opportunities across Europe for improvement.
- 1.2 This comprehensive EU strategy is extremely ambitious. It implies that achieving the EU's climate and energy targets will, to a significant extent, depend on effective and consistent application of this strategy at Member State level. It suggests that reinforcing the role of renewable energy in heating and cooling could be the single biggest contributor to achieving medium and long term targets and should be recognised as such in the continuing programme of the Energy Union.
- 1.3 The EESC therefore recommends that the annual state of the Energy Union report should contain a specific section identifying progress on this strategy.
- 1.4 The Committee appreciates the work undertaken by the Commission in identifying and collating data relevant to heating and cooling. Such data is vital. Eurostat should prioritise work on a more comprehensive data set collection, particularly on energy used in heating.
- 1.5 The role that the consumer has to play in making any overall strategy effective is critical and the Committee urges further development of its proposal for a comprehensive European Energy Dialogue to greatly improve awareness and the creation of clear incentives for consumers to stimulate behaviour change. Not only should such incentives be financial but they should also emphasise the positive social impact of the many measures contained in the strategy and be targeted at the vulnerable and energy poor.
- 1.6 The Committee recommends that an urgent comparative analysis of public and private sector schemes designed to support efficient, low carbon heating and cooling programmes is undertaken.
- 1.7 A new approach to urban planning policy, consistent with the strategy proposed, needs to be put in place at regional and municipal level in all Member States to ensure delivery of the strategy. The Committee highlights the Covenant of Mayors' role in this respect.
- 1.8 High level EU energy and climate targets need to be translated into explicit contributions by member states with implementation in national plans through, for example, 5 year targets, specified by sector, with metrics developed specifically for heating and cooling.

2. Introduction

- 2.1 The Heating and Cooling Strategy provides the first dedicated EU level assessment for the sector as a whole. Heating and cooling account for about 50% of total EU energy consumption and will remain the largest long-term driver for energy demand, with building heating comprising the biggest single sector. The durable nature of heating technologies for buildings means they will play an important role in whether the EU can achieve its medium and long-term climate and energy goals. Space and domestic water heating for buildings is currently one of the largest sectoral energy uses – and is the most problematic to decarbonise. Heating is currently mainly achieved with fossil fuel energy directly delivered to buildings, creating local safety and emission issues.
- 2.2 All sectors of civil society are involved. The energy requirements of most large process industries, where heat is usually applied extensively, directly affect their competitiveness; cooling is essential in much of the food processing, distribution and retail and storage chain, whilst the cost and efficiency of domestic heating and cooling are of concern to all.
- 2.3 A growing number of households across Member States are spending a high share of income on energy, increasing the level of energy poverty. In particular the elderly, the vulnerable and low income groups are susceptible and the EESC has suggested establishing an energy poverty observatory to analyse and deal with this problem¹. A combination of social, financial and technical measures all have to work in synergy for effective results. A greater emphasis on the collection of accurate heating data will aid the drive against energy poverty.
- 2.4 Heating and cooling, as such, are not easily or economically transportable. This leads to highly localised and fragmented "markets". Cooling constitutes just 5% of energy demand, heating 95%, with heating demand considerably exceeding cooling, though cooling is vital in the warmer Member States. Capital investment in heating and cooling systems tends to be for the medium to long term but the development of technology and innovation in this sector is rapid.
- 2.5 The EESC in previous Opinions² has called for an integrated and consistent policy approach across the energy sector and also a greater role for – and dialogue with – civil society on these issues. This is now formally prioritised through the Energy Union Package and the identification of heating and cooling as a vital sector offers the opportunity for the cross referencing and consistency in the many climate and energy-related legislative packages under development.

¹ [OJ C 341, 21.11.2013, p. 21.](#)

² [OJ C 383, 17.11.2015, p. 84; OJ C 198, 10.7.2013, p. 56; OJ C 318, 29.10.2011, p. 155; OJ C 277, 17.11.2009, p. 75.](#)

3. Overview of the Commission communication and comments

- 3.1 The Communication assesses the potential of the sector to contribute to the EU's strategic climate and energy objectives and is supported by an accompanying staff working document which provides an analytical and scientific base. It aims to prioritise heat as a policy area for energy efficiency and encourages an informed debate and consensus on this topic and the related issues of energy demand reduction and decarbonisation.
- 3.2 This strategic framework identifies four critical areas for action. The thermal efficiency of buildings; efficient and sustainable heating technology; integrating the unused potential from industry whilst improving its efficiency; and a closer synergy with the electricity system where heat pumps and other RES (Renewable Energy Systems) have an important role to play. Many possible actions are outlined but detailed solutions will be brought forward as part of the legislative review package comprising the Energy Union.
- 3.3 The dominant vision is the decarbonisation of buildings through renovation, more efficient heating and cooling systems, the expansion of district heating and a transition from fossil fuels to low carbon energy sources. Residential buildings make up the largest portion of Europe's building stock, with 60-70% of EU housing stock dating to 1980 or earlier, and homes having the largest specific consumption (kWh/m²/year). The low building refurbishment rates increase the high financial burden for consumers. EU households spend on average 6.4% (COM(2014) 520 final) of their disposable income on home-related energy use, about two thirds for heating and one-third for other purposes. An increasing number of households have problems in meeting energy costs. Affordable heating and cooling is crucial to maintain a good quality of life for household consumers.
- 3.4 As not all industry can follow a low carbon energy route, particularly as energy dense fossil fuels are required for many process industries, it will be essential to use a much greater proportion of the waste heat produced by some industrial and power generation installations as a by-product. The working document recognises the use of waste industrial heat in district heating systems and also the developing role of new technologies and alternative fuels as having the potential to make an important contribution.
- 3.5 The strategy identifies several significant challenges. Fossil fuels account for over 80% of the energy employed making this sector critical in achieving low carbon objectives and a transition to a more efficient and secure energy system. Two thirds of the EU's buildings – the majority of which will still be in use in 2050 – were constructed prior to the introduction of energy efficiency requirements. Incentives to "improve" can be fragmented by ownership or tenancy arrangements and weakened by lack of appropriate finance schemes. There is a lack of market driven competition in the heating sector, a lack of training and expertise amongst constructors and installers and a lack of awareness of the potential benefits amongst domestic consumers. The rate of building renovation is low (0.4-1.2% pa) and in addition energy poverty is a growing problem across the EU.
- 3.6 Nearly 50% of buildings have boilers with efficiencies below 60% compared with current technology levels (now legally required on replacement) in excess of 90%. In addition

household heating (fossil and biomass) has a major effect on air pollution in some parts of Europe. However, a significant proportion of boilers are operating well beyond their technical lifetime. Cost remains a big factor in replacement and even though pay-back is invariably very good difficulties exist in finding the initial capital, particularly when switching to a renewable heat source such as solar- or geo-thermal or heat pumps. In this century industry has made big energy efficiency savings but SMEs in particular have problems in prioritising and financing improvement.

- 3.7 District heating, currently providing 9% of EU heating, is highlighted as capable of substantial expansion and by the use of waste heat, more able to switch to renewable or mixed heat sources than individual households. The co-generation of heat and power is likewise under-developed and the potential of smart buildings – domestic, service or industrial – when combined with a smart grid also offers prospective efficiencies as well as the opportunity for greater participation of households as "prosumers". The strategy indirectly suggests developing "prosumerism" at individual household level through new heating technologies and increased awareness.
- 3.8 Tools and solutions are proposed. Consistent integration, revision and implementation of EU instruments within the developing Energy Union programme will provide the building blocks of the strategy. In particular the Energy Efficiency Directive (EED), the Energy Performance of Building Directive (EPBD), the EU Ecodesign and Energy labelling framework, the Renewable Energy Directive, and the Emissions Trading System (ETS) can be highlighted. The strategy should be instrumental in more effective coordination of these measures.
- 3.9 Specific actions are detailed which the Commission will undertake in meeting the challenges outlined and in supporting the legislative measures already in place. Amongst these are promoting renewable energy, incentivizing citizen participation, greater cooperation with consumer associations, enhanced commitment to innovation through, for example, the Strategic Energy Technology (SET) plan and encouraging new approaches to the financing of measures. The strategy must be consumer driven and emphasise the shift to decarbonised systems based on renewable energy and waste heat.

4. General comments

- 4.1 Heating and cooling plays a vital role in industry, in food processing and storage and in the tertiary services sector. It also impacts on every EU citizen through the universal desire to have comfortable living and working conditions. The cost and availability of heating and cooling determines not only the degree to which energy poverty is present in a society but also the competitiveness of entire business sectors. The EESC therefore welcomes this first strategic overview of heating and cooling in the EU.
- 4.2 The vision of the document is that the implementation of the strategies which are outlined will be instrumental in delivering lower costs, improving energy security, reducing import dependency and delivering climate targets. The Committee fully supports this vision but notes the extent and complexity of the challenges outlined in the strategy, some of which may be underestimated such as: the substantial demands that will be placed on Member States; the changes required in citizens' behaviour; the effectiveness of financial support schemes; the

push-back against uncertainty in energy prices; and defining and implementing the most effective technical solutions.

- 4.3 Consumers in many Member States are served by district heating schemes which can have considerable benefits in terms of cost, efficiency and the use of waste heat. The Committee urges the EU's institutions to recognise the strategy's clear and positive emphasis on this sector and support the development and improvement of municipal district heating systems through financial measures and provision for renovation and technical improvement. Modernisation of thermal plants can bring significant benefits in terms of energy use and emissions and the new market design rules under development should require the application of Best Available Technologies. In particular potential synergies between Waste to Energy (with its considerable potential) and district heating should be brought about.
- 4.4 Greater attention could be given in the strategy to the role of consumers and in particular to the importance of education and training in behavioural change. Awareness of heating use and costs in multi-occupancy buildings is a particular challenge. Smart buildings and smart heating need smart occupants with effective digital literacy skills. The strategy does not sufficiently emphasise the role that the consumer has to play in making any overall strategy effective. The tendency to trade efficiency savings for "comfort" and a reluctance amongst consumers to significantly alter their lifestyles to maximise the benefits of new technology need recognition by further in-depth research into the triggers of behavioural change.
- 4.5 The strategy makes it clear that targeted finance packages will be essential in encouraging the necessary public and private investment. The EESC notes that only a very small proportion of the EIB approved financing for the energy sector through the European Fund for Strategic Investments is directed to relevant heating and cooling projects. The working document contains no examples or analysis of the relevant schemes, in Member States, only some of which have been successful in encouraging investment.
- 4.6 Given the overwhelming importance of heating and cooling in achieving the EU's climate and energy targets, the EESC suggests that the annual state of the Energy Union report should contain a specific section identifying progress and the way forward based on the challenges identified in section three of the strategy. This would have two significant advantages:
- it would indicate the central role of heating in delivering targets and require all aspects of the Energy Union programme to recognise this,
 - it would provide a concrete consumer focus to the report and support the aspiration to put consumers and vulnerable groups at the centre.

5. Specific comments

- 5.1 The accompanying working document uses data from numerous sources to build a picture of how energy is applied to heating and cooling across the EU. Estimates and reasonable inferences are made but the picture is largely of the sector as it can be identified in 2012/13. More data indicating trends in the last ten years would have been helpful. Eurostat should

prioritise work on a more comprehensive data set collection, particularly on energy used in heating³.

- 5.2 It should also be noted that if 90% of the assumed growth in RES energy used in heating by 2020 comes from biomass, then the reduction of particle and gas emissions of the biomass combustion process remains a challenge. The conclusions of the updated EU policy on sustainable bioenergy for the period 2020-2030 will be particularly important (to form part of the EU renewable energy package foreseen before the end of 2016) and should take into account the negative health impacts of some biomass alongside other issues.
- 5.3 Significant variations between Member States exist in energy systems, legal structures, building technology and business models. The forthcoming legislative packages relevant to delivering the strategy should provide scope for national adjustments.
- 5.4 Recognising this diversity across Member States it is important that, having set the required targets, technology neutrality is maintained in how they are best achieved at national and local level. The extensive experience of cities and local authorities in developing sustainable energy plans, as articulated through the Covenant of Mayors, offers valuable insights.
- 5.5 The strategy suggests that retail banks make special loan finance available for the renovation of privately rented buildings but European mortgage lenders (The European Mortgage Federation-European Covered Bond Council) have plans to enable homeowners to qualify for reduced repayment rates on their mortgages if they undertake energy efficiency renovations, and lower interest rates on loans to pay for them. The EESC urges European regulators to urgently and positively consider this initiative.
- 5.6 The Committee in various Opinions has noted the growth of energy service companies (ESCOs)⁴ and the role they can play in promoting energy choice and efficiency for consumers. Whilst welcoming this contribution the EESC urges the Commission to encourage Member States to ensure proper supervision and monitoring of ESCOs or similar private bodies protecting the interests of customers. The trust of consumers in such services and other energy advisory programmes is a vital issue⁵.
- 5.7 The EESC highly appreciates the European Commission's initiative with the Citizens' Energy Forum in London and urges greater citizen participation supported by greater cooperation with European consumer associations. The complex legislative, regulatory, technological, societal and behavioural developments underpinning the energy transition will require public understanding and ownership to deliver their full potential. The case for greater emphasis on citizen participation is set out in the EESC's European Energy Dialogue proposal which meets such aspirations.

³ [OJ C 264, 20.7.2016, p. 117.](#)

⁴ [OJ C 120, 20.5.2005, p. 115; OJ C 162, 25.6.2008, p. 62; OJ C 24, 28.1.2012, p. 134.](#)

⁵ [OJ C 383, 17.11.2015, p. 84.](#)

- 5.8 This strategy calls for the highest priority to be given to a radical, coordinated approach to heating and cooling. Such an approach needs to be incorporated into current legislative reviews and packages. Therefore the reviews of Directive 2012/27/EU on energy efficiency (EED), Directive 2010/31/EU on energy performance on buildings (EPBD), the new renewable energy directive (REDII) for the period 2020-2030 and the updated EU bioenergy sustainability policy must make specific reference to the centrality of heating and cooling and adopt the coordinating measures proposed in this strategy.
- 5.9 The Committee therefore notes with concern the missed opportunity to prioritise energy efficiency in the recently published proposed Effort Sharing Regulation (COM(2016) 482 final). Member States in eastern Europe could make more use of building renovation as a solution to problems of pollution, energy dependency and energy poverty and this regulation could channel resources to enable this to happen.

Brussels, 19 October 2016.

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The President of the European Economic and Social Committee
