Consultation Comments

Brussels, 10 September 2015

EU Heating & Cooling Consultation Forum

Eurima welcomes the European Commission's efforts in addressing an important and complex constituent of EU Energy Policy: the reduction and decarbonisation of energy used for space heating and cooling (H&C) in buildings.

There are some important considerations that must to be taken into account to ensure that the conclusions and recommendations of this consultation, as will be translated into the EU wide H&C Strategy (and the respective Staff Working Document) will prove to be a catalyst in enabling the EU to transit to a low-energy, low carbon, competitive economy while tapping the full potential in jobs, growth and energy security, all while remaining within the existing legal Framework.

As such, our comments refer to issue paper I: 'Decarbonisation of heating and cooling use in buildings', and take the form of 4 key principles.

Introduction

The Trias Energetica[1] principle stipulates that we need to focus first on demand reduction before maximizing renewable energy supply and optimizing remaining fossil fuels. This principle has proven to incentivize the most cost-effective solutions that tap the potential needed to realize the EU's goals from many perspectives: Jobs & Growth, Climate, Energy Security, Energy Poverty, Health & Wellbeing, and Education etc. The elevation by the EU of the Energy Efficiency First where energy efficiency indeed comes first – before exploration of new energy - "underscores this precise point.

In order to ensure that the Heating and Cooling strategy will contribute to realising these multiple goals it is important to develop it within the framework and approach described above; doing so will deliver the largest societal benefits and avoid lock-in effects.

In two very specific ways the current objectives and views of the EU Commission on the Heating & Cooling (H&C) strategy do not reflect this approach: the H&C Strategy is exclusively placed under the objective of "*decarbonsisation of energy supply*" and lacks attention for the first step of reduction of demand and is absent of substantiating "cost-effectiveness".

In our view taking such an approach has a high risk of adversely spilling over into important Energy agenda ahead of us, namely in the EPBD and EED, Taking a "decarbonized supply" first approach is encroaching upon the system boundaries and going against the spirit of the current EPBD, which is first and foremost aimed at the improvement of the intrinsic energy performance of buildings and the application of minimum requirement.

What's more, 75% of buildings standing in the EU were built during periods with no, or minimal, energy-related building codes. The energy intensity of heating per floor area in the EU is two times higher than any other region of the world (except Russia) – and majority of those buildings standing today are expected to

1 1. Reduce the demand for energy by avoiding waste and implementing energy-saving measures 2. Use sustainable sources of energy such as renewables 3. Use fossil fuel energy as efficiently as possible and only if sustainable sources of energy are unavailable.

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remain in use in 2050. If we are to turn these long term assets into energy savers we will first need the EU wide deployment of ambitious deep renovation programmes maximising the savings potential of the building fabric. Only once this potential has been realised should we consider the suitable supply side measures, taking into account the cost-optimality of investments and national energy choices.

#1 Coherent and Consistent Implementation of the Energy Union Strategic Framework

Further to the October 2014 Council pledge[2] the Commission's jobs and growth priorities, the better regulation agenda, preparations ahead of COP21 and the legislative packages in the making for 2016 (e.g. Effort Sharing Decision, EPBD and the EED) – finding the lynchpin is key, Buildings have been recognised as the sector with the highest potential for savings[3], thus it is essential that the European vision of an efficient building stock (e.g. nZEB building stock by 2050), for which a reduced energy consumption is a prerequisite and the different steps to get there, are addressed coherently in upcoming legislation.

When reviewing any piece of the Energy Union Strategy, namely the EPBD careful consideration should be given to the intended objective/scope of the Directive, bearing in mind that energy for space heating and cooling is primarily needed to compensate for the losses of poorly performing building envelopes. Europe is lacking a comprehensive policy framework for renovation and the technological supply choices have not yet been fully developed. It would be unwise to move forward with decisive measure(s) aimed at the supply to buildings without *a priori* harnessing the full synergy of energy efficiency improvements of the building; in particular the building envelope.

The reduction of energy consumption in buildings should be addressed by harnessing the full synergy of energy efficiency improvements of the building, in particular the envelope.

#2 Turning buildings from energy wasters into energy savers

It is stated in the Energy Union Strategy that buildings have huge potential for energy efficiency gains. Retrofitting existing buildings to make them energy efficient and making full use of sustainable space heating and cooling will reduce the EU's energy import bills, reinforce energy security and cut energy costs for households and businesses as well as governments.

Energy efficient buildings consume less energy in all seasons. This translates into a reduction of the system peaks (in winter for heating, in summer for cooling). Demand reduction will also shift space heating and cooling demand in time (as highly efficiency building envelopes can keep the desired room temperature stable for a longer period when the energy supply is interrupted and) have the ability to significantly reduce necessary peak capacities (often using fossil fuel powered installations) and avoid distribution losses.

Furthermore, it leads to a reduction of the amount of energy that needs to be generated and transported, thus to a reduction of the system operational costs and of the related losses thus a reduction to the generation and grid infrastructure investments. Peaks also highly influence the cost / price of energy for consumers. Reducing or removing of the peaks through a significantly reduced energy demand for heating & cooling thanks to performing building envelops would greatly benefit EU households' budgets.

In addition delivering energy savings of up to 80% in space heating and 90% CO_2 emissions reductions by 2050[4] - a deep renovation of buildings will also safeguard against inevitable changes on the energy supply side, and help avoid lock-in of voluminous portions of savings. The issue paper appears to place a bigger weight on the decarbonisation of energy supply and not enough on the benefits and value in addressing intrinsic components of the building starting with its envelope.

Reducing energy consumption via an improved building envelope is the prerequisite to avoid locking-out potential savings and building in resilience against the uncertainties of future supply side evolutions.

2 Targets 40%GHG, 27% EE and 27% RES)
3 Also confirmed by the Fraunhofer study, European savings potential in buildings: which policy measures are needed to harvest these potentials, 2014
4 Eurima Renovation Tracks for Europe Up To 2050, 2012

#3 Energy Efficiency First and the Multiple Benefits

It is stated in the Energy Union Strategy that buildings have huge potential for energy efficiency gains. Retrofitting existing buildings to make them energy efficient and comfortable and making full use of sustainable space heating and cooling will reduce the EU's energy import bills, reinforce energy security and cut energy costs for households and businesses.

As underlined by the IEA there are multiple benefits to energy efficiency. With a deep renovation scenario we can, inter alia,

- Increase job creation (up to 2 million local jobs);
- Boost industrial productivity (additional GDP growth of up to 4.45% by 2030 if 40% energy savings could be achieved[5] ;
- Help facilitate an additional 17% of economic growth[6] ;
- Reudece energy dependance (on fossil fuels, gas, by 60% by 2030[7]) ;
- Create a positive impact on the trade balance ;
- Tackle energy poverty across europe (11% of europe is energy poor[8])
- Making indoor environments more comfortable and healthier[9].

The numerous ancillary benefits of energy efficiency appear to be overlooked in this paper.

The co-benefits of energy efficiency in buildings through deep renovation programmes must be given due consideration when considered against other option.

#4 Cost-effectiveness and Clarity on the data/modelling

When assessing the most cost-effective balance between energy savings in buildings and securing efficient sustainable supply the first question to be asked is – what are we calculating the cost effectiveness against: € per CO_2, GDP € per capita, € per job, € per efficiency (energy saving), etc. Without asking this question we are pre-conditioning policy choices. In short: what are the real objectives of this strategy in the framework of the EU's overall objectives?

In addition, in some cases it is not even possible to calculate the cost effectiveness of some supply side carriers due to the absence of existing infrastructure and indeed the inherent uncertainty of any inclusion of supply side carriers. While both heat savings and supply are important in the future EU energy system, the sequencing of these measures and full optimisation at their respective levels is needed.

The Paper refers to a figure for average annual energy consumption of residential buildings of 168 kWh/m2, the data set for this should be clarified. The 2012 Odyssee report shows different figures 185 kWh/m2 vs 168 kWh/m2 and that non-residential buildings are on average 55% more energy intensive than residential buildings (286 kWh/m2 compared to 185 kWh/m2). For residential building there exist significant disparities among EU countries from 60-90 kWh/m2 in southern countries with lower heating needs (Malta, Spain, Bulgaria, Greece and Croatia) to 175-235 kWh/m2 in colder countries such as Estonia, Latvia and Finland.

Before making any concrete policy recommendations, the correct measurement and harmonised statistics are critical. It is important to understand whether energy consumption is being calculated in primary or final energy and that both heating and cooling is being considered. Furthermore, given the differing climatic zones, status of building stock across Member States, rates of progress it is not easily possible to set an EU wide average. This also underlines the need for a differentiated approach when tackling residential and tertiary, and for taking some geographical glasses to understand how each country performs. Taking a capricious EU wide average, without considering the full potential of the envelope, could be detrimental to creating the commitment for the necessary renovation.

5 Commission Communication (2014) 520: "Energy Efficiency and its contribution to energy security and the 2030 Framework for climate and energy policy" (2014)
6 Kornelis Blok, Paul Hofheinz, and John Kerkhove, The 2015 Energy Productivity and Economic Prosperity Index: How Efficiency Will Drive Growth, Create Jobs and Spread Wellbeing Throughout Society, 2015, page 2014.
7 Ecofys, deep renovation of buldings An effective way to decrease Europe's energy import dependency
8 European Commission, INSIGHT_E report, May 2015
9 IEA, Capturing the Multiple Benefits of Energy Efficiency, 2014

Finally, the Issue paper only refers to one study, the EU Heat Roadmap studies[10] looking at the trade-offs between the cost of heat saving in buildings and deploying sustainable heating and cooling to buildings, it would be helpful to understand the precise assumptions of this study and/or compare with other reports. Particularly as our analysis shows that a savings in H&C demand (via the envelope) of up to 80% can be made. The % savings depends on how calculations are made and with which variables. Therefore more information should be given about the data/evidence/modelling used and a comprehensive mapping of heating and cooling needs should be carried out before making any recommendation.

Before making any recommendations the term 'cost effectiveness' should be clarified and the data/modelling substantiated.

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About Eurima

Eurima is the European Insulation Manufacturers Association, representing the interests of all major mineral wool insulation producers throughout Europe. Eurima members employ over 21,000 people across Europe with the installation of insulation products accounting for an estimated 300,000 man-years.

Eurima members manufacture mineral wool insulation products. These products are used in residential and commercial buildings as well as industrial facilities. Glass and stone wool insulation secure a high level of comfort, low energy costs and minimised CO_2 emissions. Mineral wool insulation prevents heat loss through roofs, walls, floors, pipes and boilers, reduces noise pollution and protects homes and industrial facilities from the risk of fire.

For further information on energy efficiency in buildings, please visit **www.eurima.org** or contact:

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[10] http://www.heatroadmap.eu/.