



Brussels, 23.7.2014  
COM(2014) 520 final

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT AND THE COUNCIL**

**Energy Efficiency and its contribution to energy security and the 2030 Framework for  
climate and energy policy**

{SWD(2014) 255 final}  
{SWD(2014) 256 final}

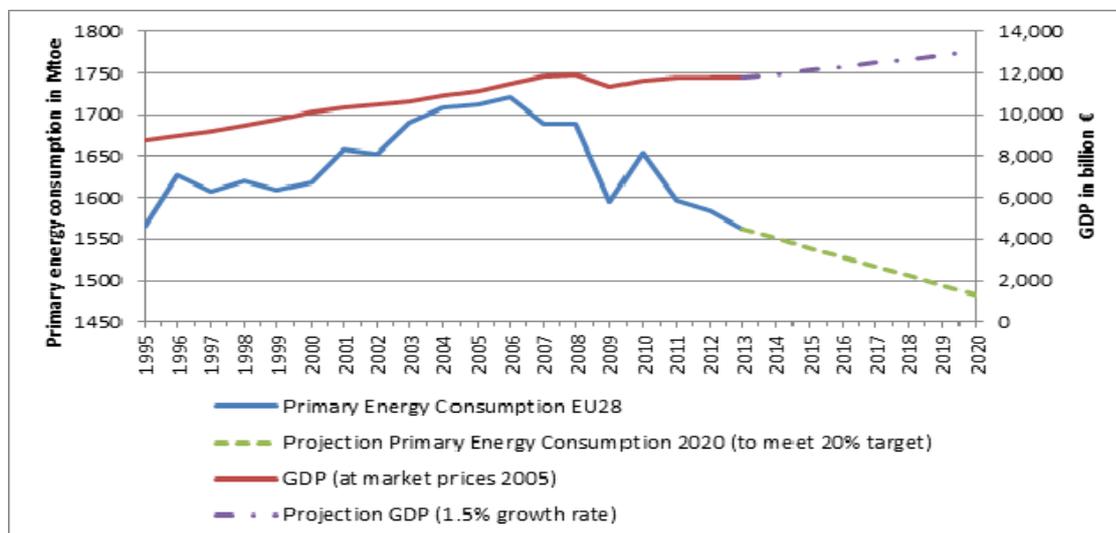
## 1. INTRODUCTION

The Commission recently presented a framework for climate and energy policies in the period 2020 to 2030<sup>1</sup>. This framework proposes ambitious targets for greenhouse gas emissions reduction and renewable energy as part of the Union's transition to a competitive low carbon economy. It also promotes reduced energy dependency and more affordable energy for business and consumers via a well-functioning internal market. The 2030 framework has since been complemented by a more detailed analysis of the Union's energy security, taking into account recent geopolitical events at the eastern border of the EU, together with a strategy that proposes concrete actions to reduce energy dependency in the immediate future and over the longer term<sup>2</sup>.

In line with the request of the European Council<sup>3</sup>, this Communication explains and quantifies the contribution that energy efficiency could make to reducing greenhouse gas emissions and to improving the Union's energy security which are both facets of an integrated framework for climate and energy policy. In line with the Energy Efficiency Directive, the Communication also reports on the outlook for attainment of the 20% target for energy efficiency in 2020.

Energy efficiency has a fundamental role to play in the transition towards a more competitive, secure and sustainable energy system with an internal energy market at its core. While energy powers our societies and economies, future growth must be driven with less energy and lower costs. The EU can deliver this new paradigm. As the figure shows, well before the crisis hit in 2008, the EU had started to decouple economic growth from energy consumption through increased energy efficiency. An increasing decoupling of economic growth and energy consumption has continued since then, driven by price signals and by a comprehensive set of energy efficiency policies (see figure).

**Figure 1. Evolution of energy consumption and GDP in the EU 1995-2013**



Source: Commission services based on EUROSTAT data

<sup>1</sup> COM(2014) 15

<sup>2</sup> COM(2014) 330

<sup>3</sup> Conclusions of the meeting of the European Council 26-27 June 2011, EUCO 79/14

## 2. PROSPECTS FOR MEETING THE 2020 TARGET

### *The current energy efficiency framework*

An indicative target of 20% energy savings by 2020 has been established as the headline target for energy efficiency<sup>4</sup>. Member States have set non-binding national energy efficiency targets. These targets are supported by:

- The Energy Efficiency Directive (EED)<sup>5</sup>;
- The Energy Performance of Buildings Directive (EPBD)<sup>6</sup>;
- Product regulations laying down minimum energy performance standards and putting energy performance information on labels<sup>7</sup>;
- CO<sub>2</sub> performance standards for cars and vans<sup>8</sup>;
- Increased financing through EU Structural and Investments (ESI) Funds, Horizon 2020, and dedicated facilities such as ELENA<sup>9</sup> and the European Energy Efficiency Fund;
- The roll-out of smart meters following the Internal Electricity Market Directive<sup>10</sup>;
- The EU Emissions Trading System (ETS)<sup>11</sup>.

A description of the implementation of the current legislation is given in Box 1.

#### ***Box 1: Implementation of key energy efficiency legislation – state of play***

- The deadline for transposition into national law of the Energy Efficiency Directive has only recently passed. Member States' 2014 Energy Efficiency Action Plans indicate strengthening of national energy efficiency policies (see overview in Annex I).
- The EED is incentivising changes in the business model of energy service companies. It requires Member States to promote financing facilities for energy efficiency. In Germany, the publicly-owned bank KfW provides preferential loans for energy efficiency retrofits of existing buildings and the construction of new ones. Between 2006 and 2013, 2.8 million homes were retrofitted and 540,000 highly-efficient new homes were built.
- In France, the new draft national law provides for numerous concrete actions, in particular for buildings. Among the measures is a fiscal reduction of up to 30% of the cost of energy efficiency renovations, from September 2014 onwards.
- Financing mechanisms under the European Structural and Investment Funds are being diversified, with greater use of financial instruments.

<sup>4</sup> This equates to 1483 million tonnes of oil equivalent (Mtoe) in primary energy consumption in 2020

<sup>5</sup> And its predecessors the CHP Directive (2004/8) and the Energy Services Directive (2006/32)

<sup>6</sup> The Energy Performance of Buildings Directive 2010/31/EU

<sup>7</sup> Notably the Ecodesign Directive 2009/125/EC and its implementing measures; the Energy Labelling Directive 2010/30/EU and its implementing measures.

<sup>8</sup> Regulation (EU) No 333/2014 and Regulation (EC) No 443/2009

<sup>9</sup> European Local Energy Assistance programme managed by the European Investment Bank; <http://www.eib.org/products/elena/index>

<sup>10</sup> Directive 2009/72/EC concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC

<sup>11</sup> Directive 2003/87/EC as amended by Directive 2009/29/EC and Decision No 1359/2013/EU

- The number of Member States applying energy efficiency obligation schemes for utilities is expected to rise from five to sixteen. In Poland, the relevant provisions of the EED will be entirely implemented through such a system.
- The EED promotes programmes to raise awareness among households about the benefits of energy audits through appropriate advice services. In the UK a specialised department helps in designing policies on the basis of research on how consumer decisions about energy efficiency can be stimulated ("behavioural economics").
- Despite this good progress, only five Member States have so far notified full transposition of the EED. The Commission has sent letters of formal notice to the others.
- Implementation of the Energy Performance of Buildings Directive is also lagging behind despite the transposition deadline of July 2012. At the moment, there are nine Member States that still have not completed the transposition process. In four cases the Commission has initiated court proceedings.

### *Energy efficiency policies are delivering tangible results*

As a result of energy efficiency measures, buildings are consuming less energy, inefficient equipment is being phased out from the market and labels applied to household appliances such as televisions and boilers have enabled consumers to make informed purchasing choices. Public authorities, industry, SMEs and households are becoming more aware of energy-saving possibilities. In transport CO<sub>2</sub> performance requirements will reduce fleet average emissions of new passenger cars by 40% by 2021 compared to 2007.

Placing these elements within a common EU framework has benefited from the scale of the internal market and allowed national policy-makers to learn from each other. This European framework complements national measures such as voluntary agreements, energy efficiency obligations, financing schemes and information campaigns. Member States' progress in energy efficiency is reviewed annually as part of the European semester.

The picture, both nationally and at EU level, therefore shows a growing momentum behind energy efficiency policies and measures.

### *Further efforts are needed to reach the EU's energy saving target by 2020*

Based on an analysis of Member State actions and additional forecasts, the Commission now estimates that **the EU will achieve energy savings of around 18-19% in 2020.**<sup>12</sup> It should be noted that about one third of the progress towards the 2020 target will be due to the lower than expected growth during the financial crisis. It is therefore important to avoid complacency about reaching the 20% target and avoid underestimating the efforts that will be required in respect of any new target for the period after 2020.

Given the wide benefits of energy efficiency, and the accumulating evidence that energy efficiency policy works, it is essential to make the extra effort needed to ensure that the target is met in full. Implementation of the EU legislative framework is still lagging behind (see Annexes II and III). **If all Member States now work equally hard to implement fully the agreed legislation then the 20% target can be achieved without the need for additional measures.**

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<sup>12</sup> This means falling short of the 20% savings target by 20-40 Mtoe.

Efforts should be concentrated on the following elements:

- Reassuring consumers of the quality of their buildings by strengthening local and regional verification of national building codes and accurately informing consumers of the energy performance of buildings for sale or rent<sup>13</sup>;
- Fully implicating utilities in working with their customers to obtain energy savings<sup>14</sup>;
- Strengthening market surveillance of the energy efficiency of products that needs to be resourced in all Member States and that will ensure a level playing field for industry and provide consumers with the information they need to make informed choices<sup>15</sup>.

### **3. ENERGY EFFICIENCY: ASSESSING THE POTENTIAL FOR 2030**

A key objective of future climate and energy policy is to keep energy affordable for business, industry and consumers. It follows that the 2030 framework, and the targets it contains, is underpinned by the need to meet climate and energy objectives in the most cost-effective manner. Such an approach requires that the Member States have flexibility in how they meet their commitments, taking their national circumstances into account. On this basis, the Commission has proposed binding targets to reduce greenhouse gas emissions by 40% in 2030 (relative to emissions in 1990) and for energy consumed to comprise of at least 27% from renewable sources in 2030. These represent staging posts on the cost-effective pathway to a competitive low-carbon economy in 2050.

As regards energy efficiency, the 2030 framework also indicated that the cost-effective delivery of the greenhouse gas emissions reduction target for 2030 would require increased energy savings of the order of 25%<sup>16</sup>. This document rests upon this premise and further analyses the cost-effective potential for energy efficiency improvements and other benefits that energy efficiency creates.

#### **3.1. EU competitiveness: growth, jobs and industry**

Energy efficiency has an important role to play in augmenting jobs<sup>17</sup> and growth, especially by stimulating construction, the sector that is most capable of reacting quickly to underpin the re-launch of the economy and that is not exposed to delocalisation.

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<sup>13</sup> The Commission estimates that an additional 15 Mtoe of savings by 2020 can be secured by these actions. "Study evaluating the National Policy Measures and Methodologies to implement Article 7 of the Energy Efficiency Directive", CE Delft, draft study commissioned by Commission services.

<sup>13</sup> [http://ec.europa.eu/energy/efficiency/eed/guidance\\_notes\\_en.htm](http://ec.europa.eu/energy/efficiency/eed/guidance_notes_en.htm)

<sup>14</sup> The Commission estimates that an additional 20 Mtoe of savings by 2020 can be secured by these actions; see also [http://ec.europa.eu/energy/efficiency/eed/guidance\\_notes\\_en.htm](http://ec.europa.eu/energy/efficiency/eed/guidance_notes_en.htm).

<sup>15</sup> This should avoid the loss of at least 4 Mtoe of savings.

<sup>16</sup> Assuming the same method to measure progress as is used currently for the 20% energy efficiency target for 2020.

<sup>17</sup> Communication on Green Employment Initiative: Tapping into the job creation potential of the green economy COM(2014) 446 final.

In industry, energy efficiency policy aims at diminishing the amount of energy needed for the same process or product – it means doing the same or more with less without impeding growth prospects. European businesses, in particular manufacturing industry, have already contributed much to making Europe one of the most energy efficient regions in the world. In this sector in particular, improving energy efficiency has often been an autonomous response to price trends. For example, EU industry has historically used energy more efficiently than its US counterpart – and still improved its energy intensity by almost 19% between 2001 and 2011, compared with only 9% in the US<sup>18</sup>. Between 1990 and 2009 energy intensity in industry in the EU27 improved by 30%<sup>19</sup>.

The regulatory framework to support these trends is in place, with the EU Emissions Trading Scheme being the main tool to drive energy efficiency (and GHG reductions) in industry, providing the necessary regulatory predictability. This will be increased by the ETS market stability reserve which will make the system more robust against shocks.

The EU energy efficiency framework has proven to be a driver of innovation and economic growth for European businesses. Energy efficiency has become a business opportunity – especially in construction (a sector dominated by SMEs). Energy efficiency spurs competitiveness by creating markets for efficient, high value-added appliances and decentralised energy management technologies. Increasing reliance on ICT across many of the domains concerned is an opportunity for further efficiency gains providing that systems and platforms are equipped with open standard interfaces allowing easy upgrading and further innovation. As demand for energy efficient products increases globally, energy efficiency policy also creates advantages in global growth markets for European products and contributes to sustainable economic development.

New technologies in construction, manufacturing and transport have the potential to further improve energy efficiency if successfully deployed at a large scale.

### **3.2. Buildings - lower energy bills for consumers**

Energy efficiency improvements in buildings can save money for consumers. EU households spend on average 6.4% of their disposable income on home-related energy use, about two-thirds for heating and one-third for other purposes<sup>20</sup>. In 2012 almost 11% of the population of the EU were unable to keep their homes adequately warm<sup>21</sup>. This is driven by rising energy prices – whose effect has however been mitigated by increased competition in the internal energy market and by increased energy efficiency.

Following the introduction of efficiency requirements in building codes, new buildings today consume only half as much as typical buildings from the 1980s. However, 64% of space heaters, for example, are still inefficient, at best low-temperature models<sup>22</sup>, and 44% of

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<sup>18</sup> COM(2014) 21 *Energy prices and costs in Europe*, p. 12; SWD (2014) 19, *Energy Economic Developments in Europe*, pp. 36 and 41.

<sup>19</sup> European Environment Agency 2012, <http://www.eea.europa.eu/data-and-maps/indicators/energy-efficiency-and-energy-consumption>.

<sup>20</sup> "Energy prices and costs report", Commission staff working document, SWD(2014) 20 final/2.

<sup>21</sup> Idem

<sup>22</sup> European Heating Industry, data for 2012, EU28 excluding Cyprus, Luxembourg and Malta.

windows are still single glazed<sup>23</sup>. New efficiency and labelling standards for space and water heaters will soon start to impact the market. For electricity, more efficient appliances are expected to save consumers €100 billion annually by 2020 on their energy bills, equivalent to €465 per household.

Rights to more informative, transparent and frequent bills, and to take part in demand response markets, give consumers the power to manage their energy consumption actively. Creating a market for innovative energy services where investments in efficient appliances and intelligent consumption and production pays off, should be the focus of Member States when preparing for or facilitating the implementation of intelligent metering systems.

Building energy efficiency has been increasing at 1.4% per year<sup>24</sup>. This relatively limited rate is due largely to low renovation rates. The Member States that had the most success in reducing wasteful energy consumption combined stringent efficiency requirements for new and renovated buildings with programmes aimed at renovating existing buildings<sup>25</sup>.

To reap the benefits of energy efficiency in buildings, the biggest challenge is to accelerate and finance upfront investments and speed up the renovation rate of the existing stock from 1.4% - today's average - to above 2% annually.

Part of the challenge is to implement this acceleration in a socially acceptable way. Side effects which are harmful for the weaker parts of the society will need to be minimised and ways of allowing all parts of society to benefit from investment in energy efficiency measures will need to be explored. This requires putting in place the right financial instruments which are accessible to all groups of consumers irrespective of their financial situation.

Reduced demand for fossil fuels will lead, in turn, to lower energy prices. According to one estimate, every additional 1% in energy savings will lead to gas prices being about 0.4% lower and oil prices about 0.1% lower in 2030<sup>26</sup>.

### **3.3. Energy efficient transport**

Energy consumption in transport grew by 35% during 1990-2007, but has since witnessed a decreasing trend. To date the most powerful tool to address it has been CO<sub>2</sub> standards which reduce greenhouse gas emissions and make cars and light vans more energy efficient<sup>27</sup>, although other factors like high oil prices and slower growth in mobility have also contributed to the 8% energy consumption drop between 2007 and 2012.

There are signs that the behaviour of transport users is changing. In some Member States, car ownership is reaching saturation point; at an urban scale, there are a number of success stories in encouraging a switch to more efficient forms of transport – electric vehicles, public transport, cycling and walking. The recently agreed Directive on the deployment of

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<sup>23</sup> Preparatory study under the Ecodesign Directive, VHK, draft results

<sup>24</sup> "Energy Efficiency Trends in the EU", Odysee-Mure, 2011

<sup>25</sup> For example, in Germany and Slovakia average energy consumption per dwelling fell by 50% since 1990.

<sup>26</sup> POLES, "Quick analysis of the impact of energy efficiency policies on the international fuel prices", Joint Research Centre, 2014

<sup>27</sup> Emissions from new cars sold in 2013 fell to an average of 127 grams per kilometre, the target of 130g/km set for 2015 being met two years early.

alternative fuels infrastructure<sup>28</sup> and the new "urban mobility package"<sup>29</sup> will further support this trend.

Other initiatives adopted by the Commission, following the 2011 White Paper on Transport<sup>30</sup>, aim at encouraging the use of more energy efficient transport modes, through better quality and more choice in railway services<sup>31</sup>, more investment in research and innovation in rail transport<sup>32</sup> and greater exploitation of inland waterways<sup>33</sup>.

To be fully effective, a gradual transformation of the entire transport system is required towards greater integration between modes, innovation and deployment of alternative fuels, and improved management of traffic flows through intelligent transport systems. These should be accompanied by more efficient urban and land use policies at EU and Member States level.

### **3.4. Finding the right balance between costs and benefits**

The European Council works towards agreeing targets for 2030 in October so that the Union can play an active part in the ongoing international climate negotiations. The appropriate contribution of energy efficiency to the 2030 framework must be based upon a thorough consideration of the additional costs and benefits of going beyond the 25% energy savings previously indicated by the Commission. Some key aspects of different options are shown in table 1.

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<sup>28</sup> COM(2013) 18 final

<sup>29</sup> COM(2013) 913 final

<sup>30</sup> COM(2011) 144 final

<sup>31</sup> Forth Railways Package, available at: [http://ec.europa.eu/transport/modes/rail/packages/2013\\_en.htm](http://ec.europa.eu/transport/modes/rail/packages/2013_en.htm)

<sup>32</sup> Shift2Rail, available at: [http://ec.europa.eu/transport/modes/rail/news/shift-to-rail\\_en.htm](http://ec.europa.eu/transport/modes/rail/news/shift-to-rail_en.htm)

<sup>33</sup> NAIADES II package, available at:  
[http://ec.europa.eu/transport/modes/inland/promotion/naiades2\\_en.htm](http://ec.europa.eu/transport/modes/inland/promotion/naiades2_en.htm)

**Table 1. Costs and benefits of a range of different energy efficiency targets<sup>34</sup>**

	REF2013 Baseline	GHG40 (40% GHG, 27% RES, 25% EE)	More ambitious objective for energy efficiency (%)					
			EE27	EE28	EE29	EE30	EE35	EE40
Energy Savings in 2030 (evaluated against the 2007 Baseline projections for Primary Energy Consumption)	21.0%	25.1%	27.4%	28.3%	29.3%	30.7%	35.0%	39.8%
Primary Energy consumption in 2030 (Mtoe) [Gross Inland Energy Consumption excluding non-energy use]	1490	1413	1369	1352	1333	1307	1227	1135
Energy systems costs without effect of energy efficiency on non-financial costs <sup>35</sup> (average annual 2011-2030 in bn €10)	2067	2069	2069	2074	2082	2089	2124	2181
Investment Expenditures (average annual 2011-2030 in bn €10) <sup>36</sup>	816	854	851	868	886	905	992	1147
Net gas imports in 2030 (in	320	276	267	256	248	237	204	184

<sup>34</sup> Table 1 is based on the latest analysis available.

<sup>35</sup> The concept of energy system costs includes broadly two elements: capital costs and energy purchases. The capital costs can be split into three main elements: (i) the cash cost of investing in energy efficiency; (ii) the cost of obtaining finance for that purpose; and (iii) the non-financial costs attributed to the barriers that consumers face, such as the effort needed to obtain information about efficient buildings or products. Energy efficiency policies target these barriers and so bring down their cost.

<sup>36</sup> Although GHG40 is less costly than EE27 over 2011-2030 in terms of total energy system costs by 0.5 bn € (2068.5 vs 2069 bn €), it does present slightly higher investments expenditures. This is mainly due to the lower ambition of EE27 in terms of GHGs reductions (-40.6% vs -40.1%) and the introduction of some low-cost EE policies for dismantling non-market barriers (that do exist in GHG40) and reaping the relevant EE potential available in EU.

bcm) <sup>37</sup>								
Fossil fuel imports costs (average annual 2011-2030 in bn €'10)	461	452	447	446	444	441	436	434
Employment in 2030 (million Persons)	231.74	n.a. <sup>38</sup>	n.a.	232.39	n.a.	232.53	233.16	235.21
Average Price of Electricity in 2030 (€/MWh)	176	179	180	179	178	178	177	182

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<sup>37</sup> As PRIMES output is in Mtoe, a conversion factor of 0.90567 was used (ref: IEA).

<sup>38</sup> For employment fewer scenarios were modelled since preliminary analysis showed that the results – for instance for EE27 and EE 28 – were very similar. Only EE28, EE30, EE35 and EE40 were therefore modelled.

A 25% energy savings target is estimated to increase the annual average cost of the energy system from €2067 billion to €2069 billion per annum (2011-2030), i.e. by approximately €2 billion per annum, or 0.09%. The substantial energy system costs that Member States will incur are part of the ongoing renewal of an aging energy system<sup>39</sup>. With 25% energy savings, the 2030 framework would already deliver substantial improvements in the Union's energy dependency, representing a €9 billion saving per annum in fossil fuel imports (2% less) and a 13% reduction in gas imports (ca. 44 billion cubic metres) compared to current trends and policies.

A target of 40% energy savings called for by the European Parliament would have a valuable impact on energy dependency, reducing, in particular, gas imports. These benefits in terms of energy security would, however, come with a hefty increase in overall energy system costs increasing from €2069 to €2181bn per annum, i.e. by approximately €12 bn annually in the period 2011 to 2030.

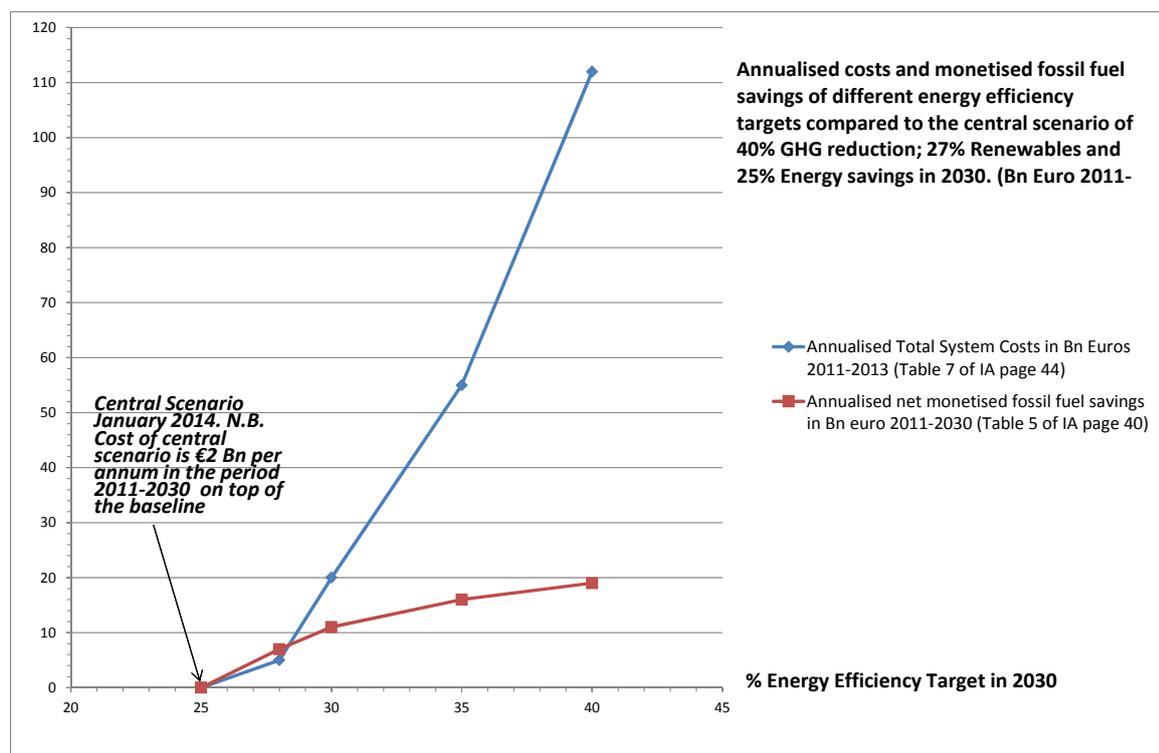
The Commission has assessed a range of ambition levels between 25% and 40% energy savings. This analysis showed that benefits increase with increased energy efficiency ambition and that gas imports would be reduced by 2.6% for every additional 1% in energy savings. This has a direct impact on increasing the security of supply of the EU - although above 35% energy savings, the rate of reduction of gas imports from additional energy savings falls off sharply.

More generally, it is clear from Table 1 and Figure 2 below that a more ambitious target for energy efficiency delivers greater benefits particularly in terms of fossil fuel imports. Additional benefits include those from reduced GHG emissions, reduced air, noise, water and soil pollution, reduced resource use for energy extraction, transformation, transportation and use, together with co-benefits on human health and the state of the ecosystems. This is complemented by benefits in terms of potentially higher employment levels. However, there are also additional costs beyond what is needed to deliver the 40% greenhouse gas target. For example, a 28% target for energy efficiency would raise the total energy system costs from €2069 billion per annum with 25% savings to the order of magnitude of €2074 billion, i.e. an increase of about €5 billion per annum, or 0.24% per annum, in the period 2011 to 2030. Figure 2 also shows that energy efficiency costs increase faster than fossil fuel import savings.

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<sup>39</sup> It is estimated that around €1 trillion is needed over the next 10 years for investment in generation and transportation and €600 billion for transmission and distribution.

**Figure 2. Additional annual average energy system costs and fossil fuel savings compared to the central scenario of 40% greenhouse gas target, 27% renewable energy target and 25% energy savings target.**



*Note. Table 1 above summarises key costs and benefits of different levels of energy saving in 2030*

The distribution of impacts is also an important consideration. Additional measures to improve energy efficiency would need to tackle mainly the energy efficiency of buildings and products and hence fall to a significant extent on the non-ETS sectors. As for the construction sector, which represents about 10% of the EU GDP, energy efficiency improvements in buildings are the most promising driver for regaining growth after the recession.

#### 4. FINANCING ENERGY EFFICIENCY AND MAKING THE BRIDGE TO 2030

The energy efficiency opportunities identified in this review can be financed provided that an effective financing framework is put in place to meet the significant up-front costs.

*Union funds should leverage private financing*

Substantial Union funds would be available to implement energy efficiency measures in the period before 2020 within the current multiannual financial framework. The use of these is already a key discussion point with the Member States in relation to the overall agreement on the 2030 Framework and the achievement of fair and equitable distribution of efforts.

If spent wisely, investments made in the period before 2020 continue to deliver the energy savings needed after 2020 as well. The majority of the energy-saving potential is in the building sector with 40% of the EU's energy consumption coming from buildings, and almost 90% of EU building floorspace being privately owned and more than 40% of residential buildings dating from before 1960. This points to the need for significant private financing. It

is essential, therefore, that a market for energy efficiency improvements emerges and public funds act to leverage private capital.

For illustration, institutional investors in the EU (adherents of the Principles of Responsible Investments initiative) currently manage over €2 trillion of funds, and the amount they have invested in private real estate is estimated at over €1.5 trillion in 2012. These are available resources that need to be unlocked by smart use of public funds accompanied by a long-term, transparent and stable regulatory framework. The Impact Assessment identified that an extra €8 billion/year of investment would be needed to deliver the 2030 framework. Against this background, the Commission considers that Member States should allocate significant shares of Cohesion Policy funding and/or national funds to support the shift towards a low-carbon economy with view to using these resources to leverage private capital. In the EU budget for 2014-2020, the commitment to energy efficiency has significantly increased. A minimum of €8 billion will be available for low carbon economy investments under the European Structural and Investment Funds 2014-2020 – and this sum will be multiplied by national and regional co-funding and by attracting private capital.

In addition, further support of Horizon 2020 and the ESI Funds will be invested in innovation for energy efficiency. In the period 2014-2020 some 2000 million Euro is foreseen, particularly through the Energy Efficiency focus of the H2020 Societal Challenge on Secure, Clean and Efficient Energy as well as the public-private partnerships on "Energy Efficient Buildings", on "Factories of the Future" and for a "Sustainable Process Industry through Resource and Energy Efficiency (SPIRE)".

In recent years, the EU has been developing pilot schemes of innovative financing instruments, such as the European Energy Efficiency Fund ("EEE F"), Global Energy Efficiency and Renewable Energy Fund ("GEEREF"), and Private Finance for Energy Efficiency ("PF4EE") under the Life Programme, which can be used directly or as examples for replication at the Member State level. Moreover, building on first successful experiences in the 2007-13 period such as with the JESSICA instrument<sup>40</sup>, the use of financial instruments in the ESI Funds for 2014-2020 is strongly encouraged, for instance through the "Renovation loan". They will provide enhanced opportunities for Member States to ensure high leverage of ESI funds. There is growing evidence of important benefits of public funds used as a trigger for private capital involvement: more cost-effective use of scarce public resources, important leverage effects in terms of private sector investments, better aligning public support with the business investment cycle, engaging the financial sector, more transparency and lower administrative burden.

*Factors affecting the supply and demand for investment finance need to be addressed*

On the demand side, energy consumers need to be better informed of the full benefits of energy efficiency that go beyond simple payback of investment or kilowatt-hours saved, such as improved quality of life or enhanced competitiveness of their businesses. Additional demand can be promoted by a more effective implementation of the existing regulatory

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<sup>40</sup> Joint European Support for Sustainable Investment in City Areas (JESSICA)

framework, assistance in the development and demonstration of a robust and scalable pipeline of investment projects, and the sharing of knowledge and experience.

The availability of finance can be increased using public funds to structure and replicate existing tailored financing schemes, offering attractive, easy to access (close to market place) and simple financing products such as low-interest loans for various types of consumers.

In addition, in order to motivate energy consumers to seek financing for energy efficiency improvements, more finance-oriented socio-economic research is needed to understand better the behaviour of consumers – including tenants and low-income households – when deciding about energy efficiency measures. Particular attention should be given to the emerging market for energy services (including Energy Performance Contracting and Energy Service Agreements). The provision of new (e.g. energy saving) services stemming from demand response-related business models will certainly influence the demand for investment and finance.

In order to stimulate the supply of energy efficiency investments, work has to be done to clearly demonstrate the business case for investors and financiers. Transparency, scalability and standardisation are required to create a secondary market for energy efficiency financial products and unlock the potential for the refinancing of energy efficiency investments via capital market products and structures.

Mobilising supply and demand for investment finance therefore entails:

- The identification, measurement, accounting for and valuation of the full benefits of energy efficiency investments through robust data and evidence that can be used by private and business investment decision makers as well as the financial sector notably through the use of Energy Performance Certificates in the buildings sector;
- The development of standards for each element in the energy efficiency investment process, including legal contracts, underwriting processes, procurement procedures, adjudication, measurement, verification, reporting, energy performance (contracts and certificates) and insurance;
- Providing the tools and services to consumers to control energy consumption that allow them to compare the (capital) costs of investments in energy efficiency with the (operational) costs for energy consumption;
- A target-oriented use of EU Funds (in particular ESIF) through public-private financial instruments to boost investment volumes and help accelerate the engagement of private sector finance through scaled risk-sharing, also ETS revenues could be targeted towards energy efficiency investments;
- Member States to move away from traditional grant funding and look to identifying the working models which best address the energy efficiency refurbishment investment needs in their building stocks (as articulated in their National Building Refurbishment Strategies) .
- A stronger dialogue between the finance industry, public sector decision makers and other related professionals, enabling them to structure and demonstrate the most effective financial mechanisms and investment schemes - both adjusted to the local level or specific market segments and replicable across the EU.

### *The role of the Commission*

The Commission will strengthen cooperation with Member States, public sector decision makers, investors and financial institutions, including the European Investment Bank ("EIB"), to increase the level of knowledge about existing financing mechanisms for energy efficiency beyond pure grant funding, their performance and impact, including issues related to risk-assessment, valuation and standardisation. The Commission will also continue its co-operation with financial institutions and Member States on further development or roll-out of appropriate Financial Instruments and Initiatives, reinforcing the availability of liquidity for energy efficiency measures.

Specific attention will be given to cooperation with Member States as regards the use of the European Structural and Investment Funds, to reflect the diverse needs, barriers and opportunities across the EU. The Commission has already published comprehensive guidance on how to finance renovation of buildings with funding from Cohesion Policy which aims to help Managing Authorities plan and deploy investments in buildings within Operational Programmes. It provides a list of good practice approaches and case studies. It also explores the different financing mechanisms that authorities can use with the objective of launching large scale investments in the energy renovation of buildings and attracting greater levels of private sector investment.

In addition, the Commission will continue to work closely with Member States, providing further guidance if necessary to complement existing guidance to support implementation of the EED<sup>41</sup>) and supporting the exchange of good practice. In addition, the Commission will continue to make sure that EU law is properly transposed and applied, ensuring a level playing field among Member States and maximising energy savings.

## **5. THE WAY FORWARD**

After a hesitant start, Europe's energy efficiency policy is now delivering. Framed by the 20% savings target for 2020, there is steady momentum at European and at national level. With full implementation and monitoring of already-adopted legislation, the EU can put itself on track to achieve this target, saving 170 Mtoe in energy consumption between 2010 and 2020.

Recent developments, most notably the Ukraine crisis, are a stark reminder of the vulnerable situation of the EU in relation to energy security and gas imports in particular. The recent European Energy Security Strategy points to the role of energy efficiency as means to improve the Union's security of supply - every additional 1% in energy savings cuts gas imports by 2.6%.

As such the Commission considers that it is appropriate to maintain the existing momentum of energy savings and propose an ambitious energy efficiency target of 30%. This will deliver substantial additional benefits and the additional cost represents a reasonable balance given the increased prominence of energy security risks whilst preserving the affordability of the Union's 2030 climate and energy strategy.

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<sup>41</sup> Communication "Implementing the Energy Efficiency Directive – Commission Guidance" [COM(2013) 762].

The current framework based on an indicative EU-level target and a mix of binding EU measures and national action has proved to be effective in driving strong progress by the Member States. This approach should continue, therefore, to apply until 2030 and energy efficiency should become an integral part of the governance framework proposed in the “2030” communication which would streamline current monitoring and reporting requirements. Energy efficiency would, therefore, be a key component of Member States' national plans for competitive, secure, and sustainable energy that would bring greater coherence to national and regional climate and energy policies and measures.

On the basis of the national plans it receives and using its own pan-EU energy and climate analyses, the Commission will monitor the national plans and assess the prospects for attainment of national/EU climate and energy targets (including that for energy efficiency), the outlook for the EU's energy dependence and the effective functioning of the internal energy market, on the basis of appropriate key energy indicators. In this context, the Commission will explore the use of additional indicators, to express and monitor progress towards the energy efficiency target, such as energy intensity, which better take account of underlying **changes in and projections for GDP and population growth**. Furthermore, the Commission will **review progress on energy efficiency in 2017 taking these elements into account**. Ultimately, the governance process will provide the framework within which to evaluate the effectiveness of national and EU policies linked to the 2030 climate and energy objectives.

The Commission will also continue its efforts to further increase the sophistication of the energy and economic modelling used to assess the costs and benefits of energy efficiency measures.

The Commission will continue to support Member States in their national efforts through policy measures at European level as a contribution to achieving the proposed savings. In this context the following elements will be used:

- The upcoming evaluation and review of the Energy Labelling and certain aspects of the Ecodesign Directives, due for the end of 2014, will provide an opportunity to update the product-related policy framework;
- Further development of financial instruments and project development assistance to leverage private sector investment in energy efficient equipment and technology.
- Evaluation and reviews of the Energy Efficiency and Energy Performance of Buildings directives, Article 7 of the EED, and the next NEEAPs in 2017, will provide the opportunity to consider what policy elements would be necessary to drive sustained investments in energy efficiency, especially in light of the currently planned phasing out of some key elements of the EED in 2020.
- The Commission's upcoming retail market Communication will focus on creating a market where innovative services based on dynamic pricing ensure that the market offers products that promote efficient use of energy, based on a dialogue with Member States and regulators and within the framework of the EED and Internal Energy Market legislation.
- Implementation of the market stability reserve of the Emissions Trading system which will drive energy efficiency improvements in the industrial sector and will ensure that synergies between energy efficiency and climate policies are reaped.

- Progressive implementation of the programme put forward in the 2011 White Paper on Transport<sup>42</sup>;
- Use of the H2020 Research and Innovation programme and close co-operation with Member States to leverage the delivery of affordable, innovative energy efficient products as well a new business models for such delivery.

## 6. CONCLUSIONS

Current forecasts imply that the current 2020 target for energy efficiency is on the way to being achieved. The Commission does not intend to propose new measures but calls on the Member States to step up their current efforts to ensure collective delivery of the 2020 target. The Commission will complement these efforts with appropriate guidance and dissemination of best practice to ensure full exploitation of the available Union funds.

The Commission's Communication on a 2030 policy framework for climate and energy identified a level of energy savings of 25% as part of a strategy to deliver the 40% greenhouse gas emission reduction target in the most cost-effective manner. However, given the increased relevance of bolstering EU energy security and reducing the Union's import dependency, the Commission considers it appropriate to propose a higher target of 30%. This would increase the costs of the 2030 Framework by €20 billion per annum but would still deliver tangible economic and energy security benefits.

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<sup>42</sup> COM(2011) 144 final