



EUROPEAN ALLIANCE TO  
**SAVE ENERGY**

*Creating an Energy-Efficient Europe*

# **ENERGY EFFICIENCY: MULTIPLE AND COLLECTIVE BENEFITS FOR EUROPE AND WHY ENERGY EFFICIENCY SHOULD HAVE A CENTRAL ROLE IN DG ENTR STRATEGY FOR A NEW EU INDUSTRIAL POLICY**

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A NON PAPER BY THE EUROPEAN ALLIANCE TO SAVE ENERGY (EU-ASE)

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## Introduction

This document provides an overview of the multiple benefits of an energy efficient Europe.

The objective is to draw attention to:

- the economic, environmental and social potential of a European energy efficiency market

and to provide a multi-stakeholder contribution of vision and ideas for:

- the ongoing development of DG ENTR Communication on a new industrial policy for Europe

The non-paper is presented in four sections aimed at answering the following questions:

1. What are the multiple and collective benefits that would result from a boost to the European energy efficiency market?
2. What are the main barriers to the development of a European energy efficiency market?
3. What are the tools which would solve these problems?
4. What are the financial resources available for ambitious energy efficiency projects in the EU?

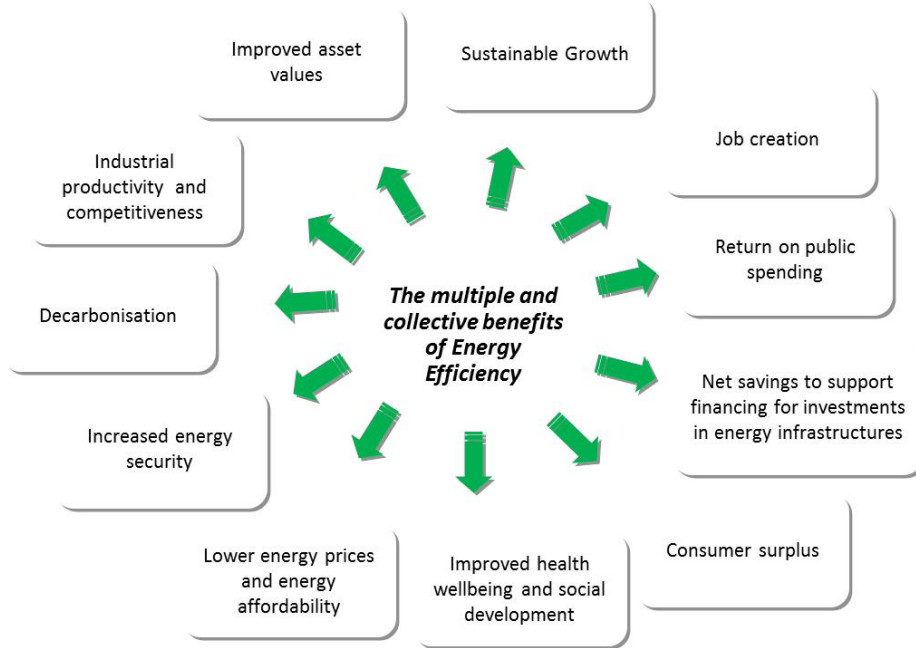
This non paper has been drafted by the European Alliance to Save Energy (EU-ASE) with the support of NGOs and other European stakeholders.

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The European Alliance to Save Energy (EU-ASE) was established at the United Nations Climate Change Conference in December 2010 in response to the urgent need for stronger action on energy efficiency in Europe. Our members are some of Europe's leading multinational companies, a prominent cross-party group of European politicians and energy efficiency campaigners from across Europe. EU-ASE members include 1E, Danfoss, Knauf Insulation, Philips Lighting, Schneider Electric, Siemens, Kyoto Club, the European Climate Foundation and 6 Members of the European Parliament. Industrial members employ over 115.000 people across Europe and have operations in the 27 member states of the European Union.

# 1. What are the multiple and collective benefits that would result from a boost to the European energy efficiency market?

The impact of energy efficiency is not solely limited to reduction in energy usage. Energy efficiency generates multiple benefits for various stakeholders in society, with relevant implications for long-term economic development. These benefits include:



- **SUSTAINABLE GROWTH**

The EU has a predominant market share in the segment of energy efficiency. An HSBC 2009 estimate for geographical segmentation is: EU (27%), China (23%) and US (20%).

With the right political, regulatory and financial framework, Europe could retain its leadership role and almost double its energy efficiency market to €300 billion by 2020<sup>1</sup>. This market would encompass building, industrial and transport high-skilled energy efficiency technology development and advice as well as blue-collar installation and renovation work, for which the EU market is almost completely covered by European SMEs<sup>2</sup>.

- **JOB CREATION**

Making Europe energy efficient will create employment opportunities for both white and blue collar workers and most of the jobs created will be impossible to offshore.

Across all sectors just over 1,000 fulltime direct jobs could be created for each million ton of oil equivalent (Mtoe) saved as a result of energy efficiency measures and/or investments.

In real terms this means that if the EU reaches its 20% by 2020 energy savings target, it could generate 728,000 direct, full time jobs<sup>3</sup> over the period to 2020.

Other studies suggest that market schemes, such as energy performance contracting, can ensure the creation of 14 jobs for every €1 million invested<sup>4</sup>.

<sup>1</sup> \$385billion (1 USD = 0.761171 EUR) - HSBC Sizing the Climate Economy, Sept 2010, p. 42, [www.research.hsbc.com/midas/Res/RDV?ao=20&key=wU4BbdyRmz&n=276049.PDF](http://www.research.hsbc.com/midas/Res/RDV?ao=20&key=wU4BbdyRmz&n=276049.PDF)

<sup>2</sup> Assessment of the growth effect of the Energy Efficiency Directive by the Danish Energy Association <http://www.danishenergyassociation.com/Theme/Directive.aspx>

<sup>3</sup> By 2020, the EU wants to cut energy consumption by 2%. In absolute terms – calculated in million tons of oil equivalent (Mtoe) – this are 368 Mtoe in 2020 compared to projected consumption in that year of 1842 Mtoe. This needs to be achieved by the EU as a whole.

- RETURN ON PUBLIC SPENDING

The German KfW Bankengruppe (a public German Bank) is a very good and recent example of the potential and substantial returns offered by public spending on energy efficiency.

A 2011 research by KfW shows that for every €1 of public funds spent on its Energy-Efficient Construction and Refurbishment programme in Germany in 2010, the Federal Government received €5 in tax revenue. In total, the programme produced €5.4 billion in direct tax revenue from companies and employees in 2010. Additionally, the 340,000 jobs created by the programme in the same year reduced government spending on unemployment welfare payments, saving €1.8 billion in 2010.

KfW Bankengruppe's Energy-Efficient Construction and Refurbishment programme offered €8.9 billion in promotional loans, which crowded-in further private sector investments worth €21.5 billion in 2010. The programme achieved returns of 12.5 percent on investment, which enabled KfW Bankengruppe to offer 1 percent subsidies on their loan interest rates.<sup>5</sup>

- NET SAVINGS TO SUPPORT FINANCING FOR INVESTMENTS IN ENERGY INFRASTRUCTURES

Reducing Europe's energy demand would free up billions of euros needed to reinvest back into modernising Europe's energy infrastructure<sup>6</sup>. The EU will struggle to meet its goals on renewable energy, greenhouse gas emission reductions and security of supply without significant investment in cross-border electricity interconnections and upgrades to national networks. A large part of these investments will have to come from government coffers at a time of budgetary pressure.

Through energy efficiency measures, using existing technologies, the EU could free up a significant part of the 100 billion euro in public action needed for investment in the energy infrastructures of European interest in the next 10 years<sup>7</sup>.

For example in Europe, the direct savings that could be reaped through a deep implementation of lighting technologies could reach 28 billion euro per year. In addition these energy efficiency improvements could reduce power generation requirements (equivalent to 141 fewer power plants). This means savings due to avoided investment of approximately 300 billion euro - an important relief for public budgets.<sup>8</sup>

- CONSUMERS SURPLUS

Less energy consumption means lower energy bills for individuals and firms. Meeting the EU's 20% energy saving target will reduce net energy costs by over €200 billion per year, or €1000 per household<sup>9</sup>. In turn, this means more disposable income for recycling back into the economy.

- IMPROVED HEALTH, WELLBEING AND SOCIAL DEVELOPMENT

Making Europe energy efficient will involve transforming for the better the places that we live and work (e.g. as a result of improved heating and cooling and air quality in buildings and of energy efficient lighting solutions applied in offices, schools, homes and hospitals), and the ways we get around (e.g. as a result of more efficient transport systems).

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<sup>4</sup> Estimates by the Danish Construction Industry

<sup>5</sup> Impacts on public budgets of KfW promotional programmes in the field of "energy-efficient building and rehabilitation", Juelich Research Centre, October 2010 [http://www.kfw.de/kfw/en/KfW\\_Group/Research/PDF-Files/STE\\_Research\\_Report.pdf](http://www.kfw.de/kfw/en/KfW_Group/Research/PDF-Files/STE_Research_Report.pdf)

<sup>6</sup> Investments in the power sector infrastructure needed whether or not decarbonisation will take place because the most of the current (fossil fuel) generation is nearing the end of the 40 year lifetime.

<sup>7</sup> EC MEMO 10/582, 17 November 2010  
<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/582&format=HTML&aged=0&language=en&guiLanguage=en>

<sup>8</sup> Estimates by Philips Lighting

<sup>9</sup> ECOFYS, 'Saving Energy: Bringing Down Europe's Energy Prices', June 2012, [http://www.ecofys.com/en/publications\\_news/saving-energy/](http://www.ecofys.com/en/publications_news/saving-energy/)

Energy efficiency reduces the operation of fossil fuel-based power plants and therefore lowers SO<sub>2</sub>, NO<sub>x</sub>, particulates, HG, and CO<sub>2</sub> emissions and, according to the European Commission, for every €1 invested on energy efficiency, €0.42 are saved in health expenses<sup>10</sup>.

- **LOWER ENERGY PRICES AND ENERGY AFFORDABILITY**

Lower energy demand means a lower energy price for businesses and consumers: the price of electricity is determined by the most expensive power plants on the grid: reduced demand means these most expensive plants are taken off and electricity prices fall (known as the 'merit order effect').

With the right regulatory policies, this will contribute to fight fuel poverty that affects all EU Member States. Indeed, nearly 1 in 10 Europeans is unable to keep its home adequately warm<sup>11</sup>.

- **INCREASED ENERGY SECURITY**

The EU spent €573 billion on energy imports in 2011<sup>12</sup>. Due to rising energy prices and an over-reliance on imports, the EU-Russia trade deficit has increased by €20 billion in 2011 to a total of €77bn and is bound to further increase if consumption does not significantly decrease. Lower energy use and resultant greater self-sufficiency in this regard will also help shelter European citizens and businesses from fluctuating and generally increasing global energy prices.

In addition by reducing our energy imports, we would have the potential to save billions of euros which could be channelled out of unnecessary investments in external supplies of energy and back into our economies.

- **DECARBONISATION**

Reducing energy use is the backbone of any effective climate strategy. Reaching the 20% EU energy savings target has the potential to cut emissions by almost 800 million tons a year<sup>13</sup>, around 1/5 of current emissions<sup>14</sup>. Analysis from the Commission<sup>15</sup> shows that meeting the 20% energy savings target is crucial if the EU is to increase its 2020 emissions reduction target, which is currently too low to put the EU on course to keep global warming below 2 degrees compared to the pre-industrial period.

- **INDUSTRIAL PRODUCTIVITY AND COMPETITIVENESS**

Energy efficiency measures reduce resource use and pollution, improve production and capacity utilisation and reduce maintenance.

The excessive use of energy brings additional costs to the price of the products and energy bills. Some industry sectors, with the right technology and support, could make energy savings of around 20%. By changing certain production processes, energy savings of 30% and even up to 65% can be obtained<sup>16</sup>.

Lower energy prices will also benefit industrial consumers.

- **IMPROVED ASSET VALUES**

Investors are willing to pay a sales premium and tenants a rental premium for property with better energy performance, particularly commercial.

Indeed, research shows that there is a premium associated with properties that demonstrate high levels of energy efficiency, with a 2.8 percent higher transaction price for properties with an A, B, or C certificate<sup>17</sup>.

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<sup>10</sup> Impact Assessment for the Energy Efficiency Plan 2011

<sup>11</sup> Council of Europe Development Banks

[http://www.coebank.org/Upload/pdf/en/ceb\\_elena\\_brochure.pdf](http://www.coebank.org/Upload/pdf/en/ceb_elena_brochure.pdf)

<sup>12</sup> An average of €400 billion every year

<sup>13</sup> COM (2008) 0030, p. 8

<sup>14</sup> Greenhouse gas emissions in the EU-27 stood at 4614.5 million tons of CO<sub>2</sub> equivalents in 2009.

[http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Climate\\_change\\_statistics](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Climate_change_statistics)

<sup>15</sup> European Commission: 'Roadmap for moving to a low-carbon economy in 2050', March 2011

<sup>16</sup> "Progetto delle Imprese per l'Italia", ABI, ANIA, Alleanza delle Cooperative Italiane, Confindustria, Rete Imprese Italia, Rome, 30 September 2011

<sup>17</sup> "RICS Research on the economics of EU energy labels in the housing market", RICS, Dirk Brounen and Nils Kok, June 2010

## **2. What are the main barriers to the development of a European energy efficiency market?**

The lack of a certain and long-term EU regulatory framework and binding targets for energy efficiency is hindering the development of a European energy efficient market – a market where EU businesses can invest, grow and retain their technological leadership.

In order to address the European energy efficiency market failures such as split (principal-agent) incentives, harmful subsidies, regulated prices, negative incentives and internal market distortions, we need a comprehensive and long term framework which allows existing technologies to improve the way energy is consumed in cities, buildings, manufactures and in the grid.

The private sector is poised to invest in energy efficiency and provide the necessary capital to leverage public sector finance, but many investors are waiting in the side-lines and until they see a strong political mandate to give them the long term stability and certainty they need, they will remain unwilling to take the risk - or worse they will choose to invest in other markets.

Political leadership for a comprehensive framework on energy efficiency will also facilitate access to capital to those actors ready to implement energy saving projects.

## **3. What are the tools which would solve these problems?**

The forthcoming Communication on a new industrial policy for Europe should send a strong political signal to Europe's energy efficiency industries by further recognizing the value and the multiple and collective benefits that a European energy efficient industry brings to:

- our economies (economic growth, job creation, enhanced industrial competitiveness, return on public spending, reduced investment in energy infrastructures)
- the environment (decarbonisation)
- and our societies (consumer surplus, energy security, low energy prices, net savings, energy affordability and eradication of energy poverty, improved health and wellbeing, improved energy security)

In parallel, the Communication needs to set precedence and show coherence and commitment to supporting the energy efficiency industry to deliver the EU's existing commitments and legislation on energy efficiency. This includes the new Energy Efficiency Directive and the Energy Performance of Buildings Directive.

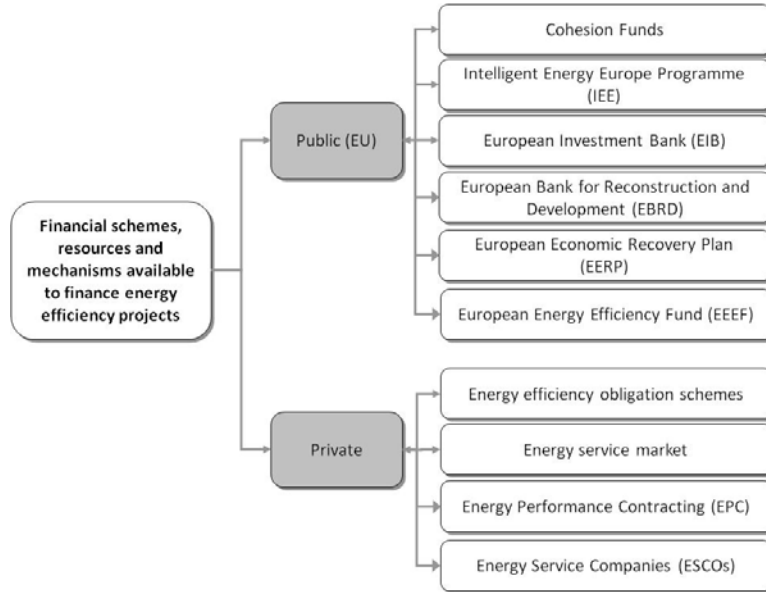
## **4. What are the financial resources available for ambitious energy efficiency projects in the EU?**

Difficulty in finding financial resources is the issue that consistently hampers the uptake of energy efficient technologies and solutions in Europe. And a lack of upfront capital, heightened by the economic crisis and cuts in public spending, is the main argument used by national, regional and local governments for not doing more to promote energy efficiency. But this obstacle can be overcome.

A number of financial mechanisms already exist to help unlock public and private sector investments. However there is still a lack of understanding around their functioning and full potential and this is holding

back their deployment on the necessary scale. With the right public support and the regulatory structures in Europe, these schemes could flourish.

The following sections highlight some of the main public (A) and private (B) schemes, resources and mechanisms available to finance energy efficiency projects.



**A. PUBLIC FUNDING - FINANCIAL SUPPORT AT EU LEVEL<sup>18</sup>**

A certain amount of government intervention is needed to enable the market, whether it is setting targets and rules and identifying the party accountable for achieving the target (EEOS), removing barriers to participation in the market (EPCs) and public funding to reduce the real or perceived risks (loan loss guarantees or buy down of interest rates).

This section provides a summary of public funding available and new funding streams currently under negotiation. With the right public support and the regulatory structures in Europe, these schemes could flourish.

• CURRENTLY AVAILABLE (2007-2013)

At EU level, financial support for energy efficiency is available from the EU budget as well as European public banks.

Through **cohesion policy** (under the current Multiannual Financial Framework), the European Regional Development Fund (ERDF) (€201 bn) and the Cohesion Fund (€70 bn) are both used to support energy efficiency measures. Of these funds, some €9.5 bn, representing about 3.5% of cohesion policy funding, have been allocated to investments in sustainable energy including energy efficiency. In the past, cohesion policy financed energy efficiency investments only in public and commercial buildings. Following an amendment of the ERDF Regulation in 2009, up to 4% of national ERDF allocations may now be used for energy efficiency improvements and renewable energy investments (that support social cohesion) in existing housing. By the end of 2010, 52% of the budget appropriations for energy efficiency under cohesion policy had been translated into selected projects – although with significant variation between Member States. This confirms that absorption is largely on track and that there is wide scope for EU assistance in this field in the next years.

<sup>18</sup> The section about financing energy efficiency is based on the European Commission non-paper on energy efficiency financing in the context of the energy efficiency directive (May 2012).

The ERDF regulation also allows Member States to set up financial instruments with part of their allocation for SMEs (the JEREMIE initiative) and for energy efficiency, renewable energy and urban development (the JESSICA initiative):

- **JEREMIE**-type instruments have led to the establishment of 297 specific funds by Member States delivering equity, guarantee and loan funds for €7.4 bn of ERDF and national contributions (public and private).
- Under **JESSICA**, 11 Member states have moved part of their ERDF allocation into specific Urban Development Funds for a global amount of about €1.6 bn (of which 75% ERDF resources). So far, €106m has been committed to holding funds while a further €102m was directly committed to specific urban development funds implemented without a holding fund.

Financing for energy efficiency is also provided by the **Intelligent Energy Europe Programme (IEE)**. In the current programming period it will provide about €0.75 bn for actions tackling market barriers, building capacity, implementing legislation and stimulating investments in energy efficiency, renewable energy and sustainable urban transport.

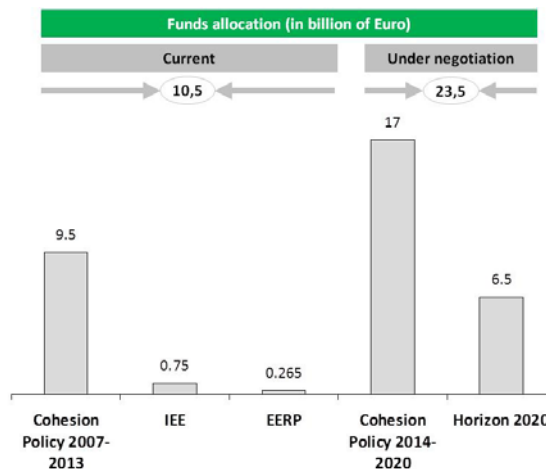
Public banks such as the **European Investment Bank (EIB)** and **European Bank for Reconstruction and Development (EBRD)** have been increasing their direct investment activity in the energy efficiency market in the last 5 years. To support local and regional authorities, technical assistance for the development of bankable projects (ELENA Facility) has been offered.

In addition, part of the **European Economic Recovery Plan (€125m)** has been invested (along with €140m from other investors) in a dedicated investment fund, the **European Energy Efficiency Fund**, which also makes technical assistance available. This fund is open to national, regional and local authorities as well as housing associations.

- **UNDER NEGOTIATION FOR 2014-2020**

The proposals for the **Multiannual Financial Framework (MFF) for 2014-2020** reflect the need to increase investment in energy efficiency and renewable energy. The Commission has proposed that 20% of the ERDF be earmarked for energy efficiency and renewable energy in more developed and transition regions and 6% in less-developed regions. This would result in an allocation of some €17 bn, almost doubling the current allocations. Moreover, contrary to the current period, no ceiling is proposed for energy-related investments in the housing sector.

Under the **Horizon 2020** programme the Commission proposes that €6.5 bn be allocated to energy research and innovation.





## **B. MOBILIZING PRIVATE SECTOR FUNDING**

In energy efficiency, there is a significant scope to create value for energy savings through market mechanisms - notably energy efficiency obligation schemes, energy performance contracting and financial instruments.

Existing **energy efficiency obligation schemes** create almost no extra costs for government. Indeed, the cost of investments is born by the obliged parties (usually energy distributors and/or retail energy sales companies). These pass on the costs to consumers through prices or tariffs depending on the structure of the market. Despite this pass-through, consumers benefit in financial terms, because in all existing schemes the total cost of saving a unit of electricity or gas is lower than electricity and gas residential prices by a factor varying between 2 and 6.

The existing obligations in five Member States (UK, France, Italy, Denmark, Belgium/Flanders) currently mobilise around €2 bn per year for energy savings.

As either a complement to energy efficiency obligations or separately, the **energy services market** offers an ideal opportunity for private-public co-operation. The energy service market in the EU currently accounts for about €6 bn compared to €30 bn in the USA, indicating that there is significant room for growth. Market growth in the US has been driven by demand for energy efficiency measures in the public sector.

A key instrument in this context is **energy performance contracting** (EPC), including through **energy services companies** (ESCOs). Under these contracts (awarded following procurement procedures) ESCOs finance up to 100% of upfront investment costs with a pay back over a period of say 10 to 15 years, funded through the financial savings achieved as a result of introducing energy improvement measures. In this way the investment 'risk' is carried by the ESCO and therefore not included in public debt, whereas the 'pay back' charges are considered as equivalent to a charge under a service contract.

The **financing facilities** foreseen in the Energy Efficiency Directive could also play an important role in leveraging private sector finance by providing guarantees for loans for energy efficiency investments.

Europe has a strong engineering base in energy efficiency innovative technologies and stimulating these markets strengthens these industries. **Public procurement** of innovative solutions can spur innovation and sustainability at the same time. Public investment in energy efficiency can also attract a high private investment multiplier. Public authorities should lead by example when renting or buying products, buildings and services with the highest rating on energy efficiency performance.

Finally, a tightening of the ETS cap will lead to higher carbon prices and more government revenue that can be channelled towards low carbon investments.