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

Financial support for energy efficiency in buildings

(Text with EEA relevance)

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1. WHY THIS REPORT?

Buildings are central to EU energy efficiency policy, as nearly 40% of final energy consumption (and 36% of greenhouse gas emissions) is in houses, offices, shops and other buildings. Moreover, the sector provides the second largest untapped and cost-effective potential for energy savings after the energy sector itself. There are also important co-benefits from making buildings more energy efficient, including job creation, fuel poverty alleviation, health improvements, and better energy security and industrial competitiveness.

The objectives of this Report are twofold. First, under Article 10(5) of the Energy Performance of Buildings Directive recast (2010/31/EU¹; hereafter the 'EPBD') the Commission is required to present an analysis on the effectiveness of EU funding, funds from the EIB and other public finance institutions, and the coordination of Union and national funding. This Report presents the main results of this analysis.

Second, the new Energy Efficiency Directive (2012/27/EU²; hereafter the 'EED') requires Member States to establish, by April 2014, a long-term strategy for mobilising investment in the renovation of the national building stock. The EED also stipulates that the Commission is to assist Member States in setting up financing facilities with the aim of increasing energy efficiency. Therefore, this Report also aims to indicate how financial support for energy efficiency in buildings can be improved.

This Report is accompanied by a Staff Working Document providing more detail on the European building stock and the financial support instruments in place at EU and national level.

2. BUILDINGS IN EUROPE

An analysis of the European building stock shows that its characteristics differ significantly between Member States in terms of age, type, ownership, renovation rates and energy performance. Therefore, while national policies and regulatory frameworks share common themes, measures to improve the building stock will have to take into account these differences. A 'one-size-fits-all' approach is not appropriate.

3. EU FINANCIAL SUPPORT FOR ENERGY EFFICIENCY IN BUILDINGS

The European Union has been supporting the improvement of the energy performance of buildings for many years with a range of financial support programmes. The table below gives an overview of the main instruments and available funding:

¹ OJ L 153, 18.6.2010, p.13

² OJ L315 of 14.11.2012, p.1

Funding Source	Instruments/mechanisms	Total funding available	Funding for EE
Cohesion Policy Funding	Operational Programmes incl. financial instruments (e.g. JESSICA)	€10.1 billion planned for sustainable energy (RES & EE)	€5.5 billion planned for EE, co-generation and energy management
Research Funding	FP 7 (e.g. Concerto, E2B PPP, Smart Cities)	€2.35 billion for Energy research	€290 million for energy efficiency
Enlargement Policy Funding	IFI facilities (SMEFF, MFF, EEFF)	€552,3 million (381,5 +117,8 +53 respectively)	About one third of total funding for projects in industry and buildings
Programme for European Energy Recovery (EEPR)	European Energy Efficiency Fund (EEE F)	€265 million	70% of funding to be dedicated to energy efficiency
Competitiveness and Innovation Funding (CIP)	Intelligent Energy Europe Programme (including ELENA) Information and Communication Technologies Policy Support Programme (ICT PSP)	Approximately €730 million for each programme	About 50% of the funding was dedicated to energy efficiency in all sectors

Table 1: Funding for energy efficiency under the current Multiannual Financial Framework (2007-2013)³

The following sections give further details about these instruments.

3.1. Cohesion policy funding

In the current 2007-2013 programming period about € 10.1 billion has been planned for sustainable energy investments across the EU, of which approximately €5.5 billion for energy efficiency. Relative shares allocated to energy efficiency differ between Member States, depending on the total volume of funds available, national needs and priorities set by each Member State. Up to the end of 2011, almost €3.8 billion had been allocated to specific energy efficiency projects, including revolving funds, representing an implementation rate of 68%.

Experience over the last few years shows that Member States are making increasing use of cohesion policy funding for energy efficiency, especially in buildings, and that the use of financial instruments is growing. However, there is no comprehensive data on the impact of this funding in terms of energy savings in the building sector.

3.2. Research funding

Under the current EU Research & Development Framework Programme 2007-2013, €290 million has been allocated to energy efficiency. Two research projects have specifically focused on the building sector:

- The 'Energy-efficient Buildings' Public-Private Partnership was provided with €1 billion to promote green technologies and the development of energy efficient systems and materials in new and renovated buildings (including historic buildings) to radically reduce their energy consumption and CO₂ emissions.
- The CONCERTO initiative aimed at demonstrating that the optimisation of the building sector of whole communities is more efficient and cheaper than optimisation of each building individually. Since 2005 the initiative has co-funded, with around €180 million, projects in 58 communities, resulting in savings of around 310,000 tonnes of CO₂ per year in their building sectors and the reduction of total electricity consumption by 20%.

³ Note that it has typically not been possible to identify the specific share of this funding allocated to building-related measures.

3.3. Enlargement funding through IFI facilities

A number of EU financing programmes are implemented in co-operation with International Financial Institutions (IFIs). These intermediated financial facilities⁴ were established under the PHARE instrument and blend EU grants with IFI funding. Of the total EU allocation of approximately € 550 million, around one third has been earmarked for energy efficiency related projects in the industry and building sectors.

The energy efficiency programmes became fully established in 2010 and have made notable progress with investments of €518 million leveraged from €112 million of EU grant support. As the individual projects vary considerably, a comprehensive overview of the impact of these facilities is not available.

3.4. EEE-F

The European Energy Efficiency Fund (EEE-F) was established in 2011 with a volume of € 265 million, with funding coming from the European Union⁵, the European Investment Bank, the Italian Cassa dei Depositi e Prestiti and Deutsche Bank. The fund provides debt, equity and guarantee instruments, as well as technical assistance grants to support project development. Around 70% of the funding is intended for energy efficiency projects, with the remainder allocated to renewable energy and clean urban transport. The fund aims at bringing already well-proven technologies to the mainstream, and at strengthening the European ESCO market and the use of energy performance contracting. At present there is one project signed with 39 more projects in the pipeline. The effectiveness of the fund will be subject to evaluation in 2013.

3.5. Intelligent Energy Europe II (IEE II)

The IEE II programme aims at overcoming non-technological barriers to the innovation, uptake, implementation and dissemination of solutions that contribute to sustainable, secure and competitively priced energy for Europe. Of the total budget of €730 million, around 50% has been allocated to energy efficiency.

As regards its effectiveness, projects selected in 2009-2011 are estimated to have triggered cumulative investment in sustainable energy of more than € 1500 million. The estimated fossil fuel energy savings and emissions reductions for all those projects were at least 350 000 tonnes of oil equivalent per year and 1 200 000 tonnes of CO₂ equivalent per year.

The European Local Energy Assistance (ELENA) Facility, which is financed under IEE II, provides grants to local and regional public authorities for developing, structuring and launching investments in energy efficiency and renewable energy. The facility is implemented through IFIs and covers up to 90% of costs incurred for technical support. From its launch until the end of 2012 the facility had provided a total of €31 million in project development contributions.

An analysis of the performance of the ELENA - EIB facility shows that the leverage effect for current projects is 54, i.e. more than double the required level of 20, potentially leading to investments of over €1.5 billion. It is estimated that energy savings from signed and approved projects could reach 919 GWh per year, with total avoided CO₂ emissions reaching 588,357 tonnes per year.

⁴ The Energy Efficiency Finance Facility (EEFF), the Municipal Finance Facility (MFF) and the SME Finance Facility (SMEFF).

⁵ The EU budget conferred to the Fund the amount of € 125 million + € 20 million for Technical Assistance and €1.3 million for awareness raising activities.

3.6. Information and Communications Technologies Policy Support Programme

The Information and Communications Technologies Policy Support Programme (ICT PSP), with a budget of €730 million, aims at stimulating smart and inclusive growth by accelerating the wider uptake and best use of innovative digital technologies and content by citizens, governments and businesses.

Between 2007 and 2013 more than €74 million was allocated to actions in the area of energy efficiency and sustainability, resulting in 35 pilots and 5 thematic networks. Projects covering buildings have shown reductions in energy consumption and CO₂ emissions of up to 20%.

4. FUNDING FOR ENERGY EFFICIENCY IN BUILDINGS BY INTERNATIONAL FINANCIAL INSTITUTIONS (IFIs)

Besides their role in implementing EU funding programmes (see above), the European IFIs operate their own investment instruments for energy efficiency in buildings.

From 2008 until the end of 2011, the European Investment Bank (EIB) mainstreamed energy efficiency into its operations, resulting in a total funding volume of €4.8 billion in the EU, of which €1.7 billion in the building sector. As regards the effectiveness of these funds, it is estimated that the annual emission reductions a result of the energy efficiency projects are 3523 ktCO_{2e} (or 1005 ktCO_{2e} when prorated to EIB financing) in 2010 and 679 ktCO_{2e} (or 379 ktCO_{2e} when prorated to EIB financing) in 2011.

Since 2002, the European Bank for Reconstruction and Development (EBRD) has provided loans and equity to 104 energy efficiency projects in the EU, amounting to €1.8 billion. The total funding mobilised on the market during this period amounts to €14.9 billion (i.e. a leverage of approximately 1:7). As regards their effectiveness, these investments are estimated to have delivered emission reductions of 5 million tonnes of CO₂ per year. Energy savings are estimated at 1.8 Mtoe per year.

Since 2002, the Council of Europe Development Bank (CEB) has approved a total of approximately €2.4 billion in favour of projects at least partially concerning energy efficiency, with more than €1.9 billion being devoted solely to energy efficiency. No data about the effectiveness of this funding are available.

5. FUNDING FOR ENERGY EFFICIENCY IN BUILDINGS BY NATIONAL PROGRAMMES

National governments also use their own budgets to support energy efficiency in buildings. Many of the existing measures have been reported to the Commission through the National Energy Efficiency Action Plans (NEEAPs)⁶ and under the EPBD. These reports show that building-related measures represent a very high share of the reported energy savings (e.g. 58% for Italy, 63% for Ireland, 71% for Slovenia and 77% for Austria). Over three quarters of the reported measures are grants and 'soft' loan schemes, followed by tax incentives. Instruments such as energy performance contracting, the use of assigned amount units under the Kyoto Protocol and energy suppliers' obligations are also used.

However, few Member States have provided details of the effectiveness of national support measures, making it difficult to obtain a good overview of their impact. This is largely due to the lack of *ex-ante* energy efficiency objectives, monitoring requirements and/or *ex-post* evaluation. Moreover, if *ex-ante* or *ex-post* evaluations do take place, they are difficult to

⁶ NEEAPs are a reporting obligation under Directive 2006/32/EC on energy end-use efficiency and energy services. All NEEAPs (and their translation in English) can be found on: http://ec.europa.eu/energy/efficiency/end-use_en.htm

compare due to the use of different indicators, measurement methodologies and scope of the instruments.

As regards the link with EU funding, many Member States reported the use of cohesion policy funding for energy efficiency investments in their NEEAPs and the existing good practice examples indicate that EU funds can trigger additional national public as well as private investments. However, experience has shown a need for further capacity building to design the investments in an optimal way.

An analysis of 25 financial support schemes for energy efficiency concluded that most successful programmes are based on preferential loans, often complemented with a grant and/or technical assistance package, but that their success depends on more factors than just the financial terms and conditions, including simple administrative procedures, information to citizens and flexibility in funding conditions.

6. PRIVATE SECTOR FUNDING FOR ENERGY EFFICIENCY IN BUILDINGS

The private sector provides the majority of financing for energy efficiency projects in buildings. Next to building owners and occupiers who invest in upgrading their properties and homes, commercial banks are also showing interest in this sector even though the level of commercial financing is still relatively low.

However, as a result of the large number of relatively small-scale and widely differing size of investments by private property owners, there is no comprehensive overview of the funds being allocated to energy efficiency improvements in buildings. Although investments tend to be larger in the non-residential sector, also here robust data about the scale of investments into energy efficiency are absent.

7. WHAT COULD BE DONE TO STIMULATE MORE AND MORE EFFECTIVE INVESTMENTS?

The following sections outline the actions and initiatives that are and could be undertaken to improve the situation as outlined above. This also integrates the views of stakeholders in response to a public consultation which ran between February and May 2012⁷.

7.1. Strengthening the regulatory framework

With the recently adopted Energy Efficiency Directive, the recast of the Energy Performance of Buildings Directive and the relevant measures under the Ecodesign and Energy Labelling Directives, a comprehensive regulatory framework for energy efficiency in buildings is now in place.

Many respondents to the public consultation consider that further EU regulation is not immediately necessary, while stressing the need for a long-term vision and commitment to energy efficiency, with some arguing for binding targets. Rather, an ambitious implementation and strict enforcement of the existing legislation by the Member States was seen by many stakeholders as key.

Other suggestions included allowing the use of VAT and the broader taxation regime to promote energy efficiency measures and services, changing the public procurement and state aid rules to promote energy efficiency, and adopting a single EU-wide calculation and certification scheme for energy efficiency in buildings.

⁷ The consultation questions, responses and overview of results can be found on: http://ec.europa.eu/energy/efficiency/consultations/20120518_eeb_financial_support_en.htm

The Commission will closely **monitor Member State implementation** and take all necessary steps to ensure full compliance with the relevant EU regulatory framework. The Commission will also continue to facilitate exchange of best practices between the Member States through **Concerted Actions for the implementation of the EPBD and the EED**.

The Commission is **reviewing** whether **the rules for state aid** as applying to energy efficiency need to be adapted in light of the provisions of the EED to maintain a clear framework for allowing financial support for energy efficiency measures.

As regards public procurement, the EED already requires Member States **to ensure that central governments purchase** (under certain conditions) **only products, services and buildings with a high energy-efficiency performance**, as applicable to contracts above the thresholds laid down in Article 7 of Directive 2004/18/EC⁸. Moreover, public bodies at regional and local levels are to be encouraged to do the same.

The Commission is developing **a common EU-wide certification scheme for the energy performance of non-residential buildings**, with the aim to define a common EU methodology to express the energy performance of non-residential buildings. This will be based on a revised set of EPBD-related CEN standards, which represents a unique opportunity to harmonise the energy performance certification of buildings across Europe on a voluntary basis.

7.2. Improving access to financing

Despite many positive experiences, there is still significant scope to improve the uptake and effectiveness of EU financial support. This was confirmed by the responses to the public consultation which were overwhelmingly positive about the available instruments at EU level, while decrying the complexity and bureaucracy of the application procedures, and pointing to a lack of awareness about funding opportunities, especially at local level.

Improvement suggestions included more flexibility in the use of cohesion funding (e.g. by blending loans with grants), greater bundling opportunities for smaller projects and more guidance for (especially local) policymakers on how to make better use of ERDF funding.

Stakeholders also advocated the use of public funds to provide technical assistance, to ensure the provision of loans on attractive terms, and to stimulate the ESCO/EPC market, for example by providing a source of finance for measures installed in public sector buildings.

Moreover, the need to provide investors with more objective, reliable and standardised information on loan performance (e.g. payback periods, Return on Investment, default rates) was cited as being key to scaling up private sector interest in this area.

In its proposals for the next Multi-Annual Financial Framework (MFF), the Commission has proposed to **increase cohesion policy funding for low carbon economy measures** (mainly through the ring-fencing of 20% of the ERDF for energy efficiency and renewable energy in more developed and transition regions and 6% in less developed regions), to **expand the use of financial instruments** and to **remove the 4% limit on support for sustainable energy investments in housing**.

Furthermore, the Commission will develop **technical guidelines on the use of innovative financial instruments** during the first half of 2013 to facilitate a wider uptake, and a better coordination and implementation of such instruments.

⁸ OJ L134 of 30.4.2004, p. 114

Member States now have to **ensure that the operational programmes elaborated under the new MFF are designed to make optimal use of cohesion policy funding for investments in energy efficiency**, in combination with national (and possibly IFI) funding.

To assist the Member States, the Commission will, during 2013, develop **guidelines for the selection and evaluation of energy efficiency projects in the context of cohesion policy funding**, also to establish a more standardised approach.

The EED creates an opportunity for Member States to introduce a step-change in the levels of investment into energy efficient buildings, as it requires the Member States to establish by April 2014 **a long-term strategy for mobilising investment in the renovation of the national stock of residential and commercial buildings**, and to **facilitate the establishment of financing facilities for energy efficiency improvement measures** to maximise the benefits of multiple streams of financing.

Moreover, the Commission intends to continue its **support for project development assistance** through the continuation of the ELENA Facility under Horizon 2020. The next edition of this assistance will be open to **a wider range of beneficiaries**, both from public and private sectors, to support the development and launch of innovative sustainable energy financing schemes. In parallel, the Commission will **establish a monitoring and evaluation framework** to facilitate the standardisation of energy efficiency investments thus enabling benchmarking of supported investment projects.

The Commission aims to incentivise industry to invest in new research and innovation for solutions fitting public service needs by **providing support for pre-commercial and first-commercial public procurement of innovation** under Horizon 2020.

7.3. Addressing market failures

There are many market failures preventing improvements to the energy performance of buildings, ranging from technical and financial barriers to informational and behavioural hurdles. A large majority of the respondents to the public consultation considered that financial barriers are the most urgent to address, in particular regarding high upfront investment costs and limited access to credit, too long payback times and credit risks, and split incentives between owners and tenant and problems in multi-apartment buildings.

Nevertheless, several responses stressed that the relative importance of the various barriers differs per Member States and per sector (e.g. residential, commercial, public).

Furthermore, the lack of appropriate and trustworthy information about energy savings, efficiency measures and financial support instruments (for building owners, building professionals and the financial sector) was seen by many respondents as the most urgent other barrier to address, next to the need for education and training, and standardised monitoring of energy savings.

With respect to market barriers, the EED requires Member States to evaluate and take appropriate measures to remove regulatory and non-regulatory barriers to energy efficiency, in particular as regards **the split of incentives between the owner and the tenant** of a building, or among owners, and the **use of energy performance contracting and other third-party financing mechanisms on a long-term contractual basis**.

While the provision of tailored advice regarding financial support instruments and technical solutions for energy efficiency in buildings (especially towards home-owners and SMEs) should preferably be organised at national, regional and/or local level, the Commission will investigate whether the information provided at EU level could be improved (mainly through the **Build UP web portal**: www.buildup.eu).

The Commission will launch a study in 2013 to obtain a **comprehensive overview of the financial support for energy efficiency in the Member States**, *inter alia* addressing the lack of information on the impact of financial measures on the energy performance of buildings.

Within the next Multi-annual Financial Framework, the Commission has proposed to continue its **support for tackling non-technological barriers** through the Horizon 2020 programme, under which €6.1 billion would be allocated to research and innovation under "Secure, clean and efficient energy" in 2014-2020. A significant share of this budget would focus on non-technology aspects and removal of existing regulatory, financial, market and behavioural barriers, under the 'Market uptake of energy innovation' priority, continuing the positive experience with the Intelligent Energy Europe Programme.

7.4. Strengthening the energy services market

The further development of the energy services market is often seen as one of the most effective ways of triggering energy efficiency measures, particularly in public buildings and industry. The business model in this market is based on the delivery of energy services (i.e. the rational use of energy rather than the delivery of energy per se), often through so-called Energy Performance Contracting (EPC). Under an EPC the service provider (i.e. an energy service company or ESCO) delivers energy efficiency improvements by financing the upfront investment costs and refinancing this through the savings achieved. Energy performance contracting can thus be seen as a financial instrument for improving energy efficiency without up-front capital cost to be invested by the client.

Several stakeholders identified the need for stronger support for the ESCO/EPC market e.g. by setting up more loan guarantee systems, by establishing a more robust certification framework and by improving the trust in the EPC concept.

In the public sector, the potential for off-balance sheet financing has been identified as driver for investment in public buildings, particularly in light of obligations to renovate 3% of central government buildings per annum.

To facilitate the further development of the ESCO/EPC market, the Commission will progressively implement its **campaign to promote and build capacity for energy performance contracting and ESCOs throughout Europe**. The campaign is being implemented mainly through capacity building workshops, organised by three partners including the EIB's European Public-Private Partnership Expertise Centre (EPEC) targeting central governments, the ManagEnergy initiative targeting regional actors, and the Covenant of Mayors initiative targeting local actors.

8. CONCLUSIONS

The picture that is emerging from the examination of the European building stock, the existing financial support measures for energy efficiency in buildings and the different market barriers, shows that:

- The situation differs significantly between Member States in terms of their building stock, the financial support measures in place and the relevant market barriers;
- Although the investments in building energy efficiency are increasing and there are many best-practice examples of instruments that are delivering cost-effective energy savings, there is only limited information on the effectiveness of the different financial support measures, both at EU and national levels;

- Important barriers that hamper further uptake of energy efficiency investments in buildings continue to be in place, including a lack of awareness and expertise regarding energy efficiency financing on the part of all actors; high initial costs, relatively long pay-back periods and (perceived) credit risk associated with energy efficiency investments; and competing priorities for final beneficiaries.

If the EU is to meet its 2020 energy efficiency target and its ambitions for further savings towards 2050, it is imperative to improve the financial support for energy efficiency in buildings. For this to happen it is necessary to ensure that the regulatory framework is properly implemented, more financing is made available and key barriers are addressed.

As outlined above, the Commission is engaged in many initiatives and activities to support these objectives. However, given the nature of the building stock and sector, and their responsibility for implementing the relevant legislation and addressing national market barriers, the Member States are in the driving seat to ensure that more cost-effective investments take place.

Moreover, the importance of a tailor-made approach to energy efficiency financing means that close cooperation between public authorities, finance providers and the building sector is essential.

Last but not least, building owners will have to be convinced of the benefits of making their properties more energy efficient, not only in terms of a lower energy bill but also as regards improved comfort and increased property value. This may well be one of the most important hurdles to overcome in making Europe's buildings more energy efficient. However, the macroeconomic case for doing this is strong and targeted incentives and awareness raising efforts to change attitudes will be necessary. The building renovation roadmaps that Member States have to establish under the new energy efficiency Directive is a key tool in this context and should explicitly address these issues.

Going forward the Commission will continue to engage with Member States and relevant stakeholders on how barriers to energy efficiency investments in buildings can be overcome and how financial support for energy efficiency in buildings could be further improved.