



# GLASS FOR EUROPE

Europe's Manufacturers of Building, Automotive and Transport Glass

## The Future EU Energy Efficiency Plan Position paper – February 2011

Glass for Europe, the trade association for Europe's manufacturers of building, automotive and transport glass, urges the European Commission to rapidly equip Europe with a robust and ambitious Energy Efficiency Plan.

Glass products, particularly those in the buildings sector, are designed to significantly reduce energy consumption and associated CO<sub>2</sub> emissions and can make a major contribution to combating climate change. This is true for instance of energy efficient glazing solutions, which help reduce energy needs for heating and cooling buildings. Indeed, it is estimated that the EU could achieve around one third of the energy saving targets for buildings identified in the current Action Plan for Energy Efficiency, simply by introducing measures to ensure the widespread adoption of glazing equipped with both highly-insulating glass and solar-control glass<sup>1</sup>. State-of-the art glass also contributes greatly to renewable sources of energy with specific glass products designed to increase performances of both solar thermal and photovoltaic applications.

As an industry, glass manufacturers share the European Parliament's concerns about the lack of progress made towards Europe's energy saving target of 20% by 2020 and are keen to see the right framework conditions put in place to encourage more investment in and uptake of the energy efficient technologies. This paper outlines our views on how the forthcoming Energy Efficiency Plan (EEP) can be an opportunity for real change and what can be done to ensure that the EU's 2020 targets can be met.

### About Glass for Europe

Glass for Europe is the trade association for Europe's manufacturers of building, automotive, and transport glass, all derived from the basic material known as flat glass. Flat glass is the material that goes into end-products that we see (and see through) every day. It is used to make windscreens and windows for automobile and transports, and windows and façades for houses and buildings. It is also used for many other applications like solar energy equipment, interior fittings and decoration, furniture, "street furniture" like bus stops for example, appliances and electronics, and others.

Glass for Europe has four members – AGC Glass Europe, NSG-Pilkington, Saint-Gobain Glass and Siseecam-Trakya Cam – and works in association with the company Guardian. Altogether, these five companies represent more than 90% of Europe's flat glass production.

Glass for Europe firmly believes that state-of-the-art glass can play a vital role in achieving the EU's energy saving targets and promotes ambitious policy mechanisms to support the market uptake of energy-efficient glass technologies.

<sup>1</sup> Independent studies show that savings of more than 100 million tonnes of CO<sub>2</sub> could be achieved annually if all Europe's buildings were fitted with advanced energy saving glazing such as Low-Emissivity and Solar Control Glass - TNO Report 2008-DR1240/B by TNO Built Environment and Geosciences, Delft, The Netherlands. – More information on [www.glassforeurope.com](http://www.glassforeurope.com)



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## **Europe's disappointing record on energy efficiency**

Despite the recognition of the **important potential benefits of saving energy** in terms of facilitating energy security, cutting CO<sub>2</sub> emissions from energy use and alleviating uncertainty caused by fluctuating energy costs, the level of political commitment to energy efficiency in Europe has been disappointing. Of the 3 core targets of Europe's climate and energy strategy, only the 20% target for energy efficiency remains voluntary.

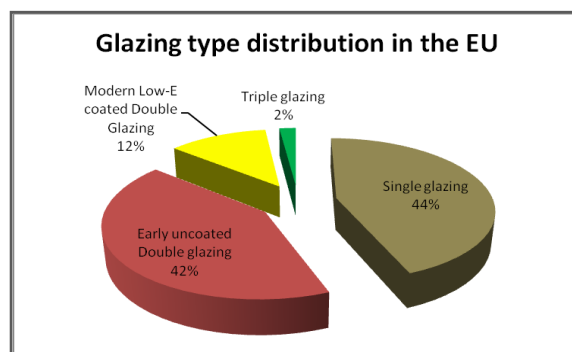
The voluntary 20% energy efficiency target has not provided sufficient impetus to generate real change and studies show that **Europe is off-track to reach this target**<sup>2</sup>. A large number of the actions identified in the 2006 Action Plan have still not been implemented and the commitment from the EU has been low. This is also true of the national action plans (NEEAPs) where level of ambition and follow up has varied considerably between Member States.

This represents an important missed opportunity to save both energy and emissions at the lowest cost, as unlike other emissions reduction tools, investments in energy saving measures actually pay for themselves within a short space of time. **Europe must take the lead to benefit its economy**, particularly now that countries like the USA or China are heavily investing in energy efficiency.

## **Need for a new approach with a focus on building renovation**

Today, buildings account for 40% of Europe's energy consumption. If buildings are likely to remain the primary source of CO<sub>2</sub> emissions in the EU, such a high proportion illustrates **the high degree of energy inefficiency of Europe's buildings**. When considering glazing only, a recent study by the independent institute TNO shows that **over 85% of glazed area in Europe's buildings are made of inefficient products**<sup>3</sup> whereas advanced double glazing and triple glazing six to eight times more energy-efficient exist<sup>4</sup>.

**The potential for energy savings in buildings is greater than in any other sector** and there are room for concrete policy interventions. By putting in place a robust framework to promote energy efficiency in buildings, the EU can not only make an important contribution to addressing climate change but also provide a boost for European manufacturing and local jobs, **all at negative overall cost**.



In this area, Glass for Europe acknowledges that the European Union has recently adopted ambitious legislations, such as the welcome recast directive on the Energy Performance of Buildings or the reviewed directive on energy labelling with an extended scope to cover some construction products such as windows. It is critical to energy efficiency that **this legislation is implemented rapidly and consistently** across member States, unlike the original EPBD, but new areas of intervention must also be explored **to boost the renovation rate of Europe's buildings**.

<sup>2</sup> Fraunhofer ISI and Ecofys: 'Energy Saving 2020 – How to Triple the Impact of Energy Savings Policies in Europe'.

<sup>3</sup> Glazing type distribution in the EU building stock – TNO-60-DTM-2011-00338 by TNO Built Environment and Geosciences, Delft, The Netherlands, 2011.

<sup>4</sup> Comparison between the U values of single glazing (average U value of 5.8) and that of Low-E double glazing today on the market (U value of 1.1). Further savings can be achieved by way of Low-E triple glazing, which reach U values of 0.7.

## GLASS FOR EUROPE'S KEY RECOMMENDATIONS

The forthcoming EEP must seek to send a clear signal to Europe's citizens so as to bring about a real step change. To achieve this objective, it is Glass for Europe's view that the new Energy Efficiency Plan should be based on the following four areas for action.

### ***Area for action 1: Setting ambitious objectives - tripling the renovation rate***

Existing buildings make up the overwhelming majority of all buildings but the rate at which they are refurbished is 1.2% only. In the case of inefficient residential buildings and social housing, their inhabitants are penalised with high energy bills whereas they are the most vulnerable to fluctuating energy prices. **Encouraging energy efficiency upgrades in existing buildings can deliver huge savings at negative lifetime cost of investment.**

**Building renovation rates need to triple**, if the entire existing building stock is to undergo deep renovation by 2050 and the EU overall CO<sub>2</sub> emission reduction targets are to be achieved. The depth of renovation is of particular importance so that full energy saving potentials are exploited at time of renovation. Unless major renovations by a factor of six are undertaken, dangers exist to lock further saving potentials for at least 30 to 40 years due to buildings life cycles. Nearly zero-energy buildings must be the ultimate objective of any renovation.

Creating the right framework for this will require **strong leadership at the highest political level**. As part of the new energy efficiency plan, the EU should as a priority, make the commitment to reach the 20% by 2020 target. Beyond, as part of the 2050 Road map for a low carbon economy, an unambiguous target on building renovation must be set to give a clear signal to local decision-makers and to industry as well as to rally citizens behind the objective.

In the interim, **sector specific targets**, which are more tangible and can easily be monitored, must be set in national energy efficiency action plans, NEEAPS to benchmark progress. In the building sector, mandatory targets on the number or percentage of buildings or surfaces to be renovated yearly or on total energy savings to be achieved yearly should be introduced. To ensure targets are met, the European Commission should play a monitoring role to encourage further actions by Member States.

### ***Area for action 2: Designing the right financial instruments and incentives***

In the building sector, the main barrier to overcome is the high-upfront costs<sup>5</sup>. **An EU strategy must therefore investigate possible financial instruments** to support individuals, business and public authorities to make the necessary investments in large-scale deep renovation programmes.

A higher proportion of **EU funds should be directed to supporting energy efficiency**, for example via the EU recovery plan, research and innovation spending, ETS revenue, and the Structural Funds. The use of revolving funds rather than pure subsidies should also be encouraged (low-interest loans, pay-as-you-save schemes etc.) The recent announcement to create a specific fund for local public authorities support to energy-efficiency investments is a

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<sup>5</sup> Based on national experiences and plans, it is estimated that major renovation programmes of buildings cost between 200 and 250 per m<sup>2</sup>. Although this cost quickly leads to high numbers when all Europe's buildings are accounted for, costs remain manageable at project level, investments can be spread over a number of years and pay back periods are relatively rapid.

positive sign but its current budget of 140 million Euros must be drastically raised to reach a critical level likely to bring about changes. Beyond solely public buildings, any construction awarded EU support funds should reach 'nearly zero-energy standards'. It should also be made easier for intermediaries to allocate EIB minimum lending amounts for local projects.

**Energy Performance Certificates**, as required under the EPBD, have a huge potential to be a market transformation mechanism if they are linked to fiscal incentives (e.g. property transaction taxes or local property-related taxes linked to the energy performance rating) or if there was to be a requirement for a minimum rating to be achieved for a building to be placed on the market. This should be feasible provided that the European Commission ensures a proper and consistent implementation of the existing rules regarding EPCs across the Member States.

It should be noted that while the EPBD requires **Member States to list the financial incentives** available, it does not require new measures to be put in place. A new energy efficiency plan should therefore give clearer direction to Member States to encourage them to mobilise resources and remove barriers to funding for energy efficiency in buildings. Reduced VAT rates for energy efficiency products and services should be considered.

### ***Area for action 3: Mobilising all actors around the energy-efficiency project***

Achieving ambitious objectives for the renovation of the building stock requires mobilising all actors of society at large.

More needs to be done at EU and at local level **to raise awareness about the simple and low cost solutions available** to citizens and businesses to improve the energy performance of their buildings. The EU should therefore put in place a communication strategy for the promotion of energy efficiency, including the provision of materials and guidance to the Member States and regions to encourage them to provide information on energy efficiency and building measures to their citizens.

**Europe's building material industry is ready to invest to deliver the quantity of energy-efficient products** needed to triple the renovation rate and to further invest in R&D. However, these are extremely heavy investments with long pay-back periods as these sectors tend to be capital intensive with continuous production processes. For instance, an average float glass plant produces 650 tonnes of glass per day, 365 days a year for uninterrupted periods of 15 to 16 years. Visibility and confidence that sufficient and continuous demand for products will exist are a pre-requisite to any investment. Concrete actions need to be detailed in robust national energy-efficiency action plans for industry to plan investments sufficiently ahead of time.

Constructions professionals are well aware of the growing demand for energy-efficient constructions and renovations however particular actions are needed in the area of **training to ensure that a competent workforce is available**. Although training activities are mostly a national competence, the European Commission could play a leadership role in spreading best practice across the Member States. It must accompany the construction market's (r)evolution also in terms of life-cycle thinking, recruitment, etc.

Last but not least, **energy utilities should be given more responsibility** in incentivising their customers to save energy. The existing directive on Energy Services does only contain loose incitements to energy utilities in this area and very little is happening on the ground. Momentum and injunction, eventually by way of energy saving obligations or funds, are needed

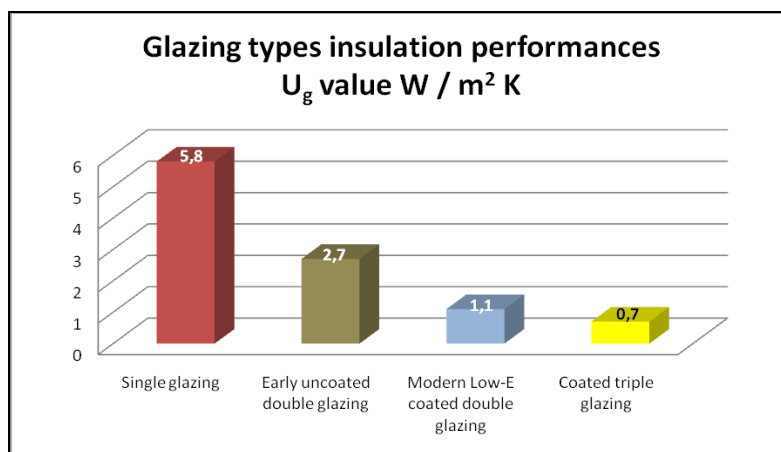
so that dedicated and successful programmes, such as the UK's CERT scheme, are generalised across Europe. Any obligation on energy utility should be complemented with detailed guidelines so that the right investments are made and not only short-term savings.

### **Area for action 4: New windows for Europe's buildings**

Different types of glass developed over the years, especially low-e coated double glazing and coated solar control glazing, can significantly reduce the need for heating and cooling in buildings, thereby reducing energy consumption. Independent studies<sup>6</sup> show that **more than 100 million tonnes of CO<sub>2</sub> could be saved annually if all Europe's buildings were fitted with advanced energy saving glass.** The future EEP should therefore include specific actions to encourage the uptake of energy efficient technologies beyond those already enacted in the recast EPBD.

For instance, Glass for Europe suggests:

- ✓ that energy labelling schemes for windows should be developed as a priority.
- ✓ to make it mandatory to include recommendations in Energy Performance Certificates (EPCs).
- ✓ that minimum performance requirements for windows in new buildings and for replacement, even when not taking part of a major renovation, are included in all national building codes.
- ✓ To maintain and increase fiscal incentives to replace old windows, to help unlock the barrier resulting from high-upfront costs and to encourage upgrades going beyond the minimum legal requirements
- ✓ Each (partial) renovation should be used to upgrade the building to maximum cost-effective performance levels. This is particularly important in the case of windows which stay on average between 25 to 30 years on a building. The most performing and cost-effective technologies must be chosen to offer long-lasting energy savings.



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<sup>6</sup> TNO Report 2008-DR1240/B by TNO Built Environment and Geosciences, Delft, The Netherlands