

# ENERGY EFFICIENCY'S ROLE IN ECONOMIC RECOVERY

## European Jobs and Energy Security through the Renovation of the Existing Building Stock



## Dialogue Summary

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## KEY MESSAGES

Against the backdrop of debate around the shape of the European Union's climate and energy targets to 2030, the second session of the Institute for Building Efficiency (IBE) Policy Roundtable series brought together renowned experts and policymakers to debate how investment in energy efficiency in buildings would contribute to Europe's sustainable economic recovery. Attendees agreed that the energy efficient renovation of Europe's existing buildings should be a policy priority (representing some 40% of our energy demand), would be a core driver of energy security and would create about 2 million local jobs in Member States. Of greater concern to participants was the positioning and ambition of energy efficiency in the context of the current policy debate. Specifically, experts highlight three critical areas:

1. The ambition for 2030 needs to be consistent with Europe's 2050 roadmaps and 80 percent decarbonization target, requiring binding energy conservation targets in buildings.
2. PRIMES modelling does not adequately capture the full benefits of energy efficiency, and therefore policymakers and Member States are unlikely to make optimal decisions on efficiency projects when relying only upon its outputs.
3. Energy savings cannot be left to chance as the bulk of academic literature concludes that policy support is still required to overcome the hurdles to achieving the full economic potential of building efficiency.

## ROUNDTABLE SUMMARY

On September 18, 2013, 35 renowned experts from NGOs, public- and private-sector entities met to debate the role energy efficiency investments in buildings can play in the sustainable economic recovery in Europe. The meeting was timed to coincide with relevant discussions around the shape of the European Union's climate and energy targets to 2030. This was the second in the IBE Roundtable series, and concluded that the group should produce and disseminate a timely, concise, and jointly crafted expert opinion statement to ensure that participants' voices are heard in policy proceedings.

The first half of the workshop was designed to set the scene and update participants on the latest views from the EU Commission and the markets. This took the form of four sets of remarks from two

Commission officials (Paul Hodson, Head of the Energy Efficiency Unit, and Antonio Paparella, representing the Directorate-General for Enterprise and Industry) and two experts (Adrian Joyce, Secretary General of EuroACE, and Clay Nesler, Vice President Energy and Sustainability for Johnson Controls).

### Getting up to date

Experts first heard where energy efficiency presently stood in the 2030 discussions and what the relevant Commission milestones are for energy efficiency in the coming 12 to 18 months. There seems to be increasing evidence that policymakers from all sides of the political spectrum see energy efficiency as a win-win. A positive consensus on efficiency is forming, especially as the European economy is now operating substantially below full capacity. For simple economic reasons, the choice between increased foreign oil and gas imports and new local jobs and savings delivered by the energy efficient renovation of Europe's buildings is an obvious one.

The Commission's immediate priority is to ensure the adequate transposition and high-quality implementation of existing legislation including the Energy Performance of Buildings Directive (EPBD), the Energy Efficiency Directive, and the Eco-Design and Energy Labelling Directives. It was noted that the Member States' indicative energy efficiency targets for 2020 now sum to about 17 percent, still short of the EU-wide target of 20 percent. However this represents a significant improvement on the 9 percent trajectory projected before enactment of the binding measures in the Energy Efficiency Directive. These measures included such actions as end use energy savings obligations for utilities, measures to remove the barriers to energy performance contracting, and a 3% annual renovation rate for central government buildings.

With some signs that energy use and economic growth are starting to "decouple," policies focusing on investments in efficiency can build a more productive economy. Efficiently blending Horizon 2020, €17 billion of Cohesion and Structural Funds (earmarked for the Low Carbon Economy from 2014-2020) with Member State contributions and private sector finance is critical to delivering the 2020 energy efficiency targets. There are some encouraging signs that highly energy efficient buildings are worth more in the market than the more wasteful ones, but bolstering broad consumer acceptance and confidence will require a greater body of evidence around the costs of retrofit and the building's subsequent energy performance.

In the context of 2030, a communication from the EU on climate and energy targets is expected in December 2013. However, equally important for the energy efficiency industry are the Member State milestones in 1H2014 under the Energy Efficiency Directive and the June 2014 progress review to see whether Member States are on track to meet their targets. Depending upon performance, a number of options will open up to the Commission to react to the June 2014 review. These include the launch of a formal review of existing Directives and the required review of the EPBD by January 2017.

Turning to a review of evidence for the jobs impact of existing energy efficiency policies on Europe's construction industry, experts walked through the results of an extensive 2012 assessment of 11 Member States' Recovery and Stimulus packages (2007-2011). Interestingly, while in eight of the 11 Member States a structural break (material and unexpected shift in macroeconomic pathway) could be identified as a result of the stimulus packages implemented (and the larger the package, the more significant the break) – Sustainable Construction was not identified as a central recovery theme, and energy efficiency was really not present in the data except for Austria, Germany and Denmark.

Digging deeper into energy efficiency in the context of past EU Recovery and Stimulus measures, three trends seemed to be emerging:

1. A divergence between measures planned and measures implemented.
2. Negative impact of fiscal constraints on energy efficiency investment among those Member States most affected.
3. Difficulties in monitoring, related to a huge variation of measurement approaches, assessments and target outcomes (jobs, energy savings or energy efficiency, and economic improvements).

However there are case studies that demonstrate positive links between employment and energy efficiency recovery policies in Denmark and Finland, positive links between energy savings delivered by recovery policies in Estonia, and positive energy and economic stimulus outcomes in Germany, Austria and Lithuania.

In assessing current activity, participants heard from the collected energy efficiency industry that existing policies had largely failed to stimulate the energy efficient renovation of Europe's building stock, and that significant changes to the regulatory framework would be required to achieve a decarbonization of -80 percent of buildings by 2050. Specifically, to have any chance of hitting the 2020 and 2050 targets in the buildings sector, Europe's rate of buildings renovation (1.2 percent) would have to more than double (to 3 percent), and all renovations would have to be energy efficient renovations.

In 2011, Europe's construction industry turned over €1.2 trillion, of which 40 percent related to building modernization and renovation. A doubling of the buildings renovation rate is projected to deliver 8 percent year-on-year growth in the construction industry and 0.7 percent GDP growth from now until 2021. By then, the construction industry could turn over €2.1 trillion and have added 2 million direct and local jobs. However, the economic benefits go well beyond the construction industry, as extensively illustrated by International Energy Agency Multiple Benefits of Energy Efficiency work and a 2012 Copenhagen Economics Study. The social benefits of improved health and productivity relating to building renovation could amount to €100-200 billion per annum, even when netted against the lost energy tax revenues from lower energy use.

To better understand the position of European decision-makers responsible for energy use in buildings, the Institute for Building Efficiency presented the results of its seventh annual (2013) Energy Efficiency Indicator survey. It shows that energy management's importance continues to rise among Europe's buildings managers, both in number of respondents and in grade of priority. Interestingly, while there was a highly significant 13 percent increase in energy efficiency investment among German buildings managers in 2013, the importance they gave it was much the same as in 2012. That is a very different picture from the UK and France, where investment levels slipped in both countries just slightly from 2012 to 2013, notwithstanding a marginal increase in attention in France and a drop in the UK.

The IBE survey also showed that in Germany and France new lighting, HVAC and control systems and building envelope improvements were each adopted with similar frequency – roughly half the time in projects in both countries over the last 12 months. Meanwhile, in the UK, building envelope measures had slipped to 25 percent of projects in the last year, versus lighting improvements appearing in 65 percent of projects. Buildings managers continued to see lack of funding as the largest barrier to building renovation, while uncertainty around energy savings performance ranked second place and insufficient returns on investment third. Respondents in all three countries valued more "carrot" policies (like tax credits, white

certificates or low-interest finance) over “stick” policies (like stricter buildings codes). All of those beat the carbon markets as a renovation incentive. Finally, the IBE survey ends with the startling revelation that a full 70 percent of European building managers intend to achieve nearly zero, net zero or energy-positive status on at least one of their facilities.

### Debating the issues

The expert debate that followed was focused and intense, revolving around a handful of key themes:

1. The practical difference between “mandatory” and “voluntary.”
2. 2030 levels of ambition for energy efficiency.
3. Whether PRIMES modelling is able to capture the full benefits of energy efficiency.
4. How to succinctly summarize and precisely articulate the participants’ recommendations as a group.

Participants felt that while voluntary targets had raised the profile of energy efficiency in Europe, things that are not mandatory simply do not receive the required priority attention from policymakers. In the case of energy efficiency, that means understanding and overcoming the multiple regulatory barriers faced by the emerging buildings renovation sector. Even with mandatory measures, like Article 7 in the Energy Efficiency Directive, experts felt that loopholes and variable compliance mechanisms were watering down their overall effect.

Experts debated the commensurate 2030 target levels for energy efficiency in the context of a target – 40 percent reduction (vs. 1990) in CO<sub>2e</sub>. One expert felt that a 35 to 41 percent improvement in energy efficiency (vs. 2005) was possible just through Article 7 and the continued savings from improved end-use appliance efficiency standards. Experts thought that business as usual, based on current policies, might deliver 20 to 25 percent energy savings (vs. 2005), and yet Fraunhofer research suggested that cost-effective energy efficiency measures could easily deliver double this by 2030 (i.e. 40 to 50 percent energy savings vs. 2005). The group as a whole called for ambitious, realistic, cost-efficient and legally binding targets based upon high-quality research, modelling and data.

Interestingly, a good number of those present with relevant experience expressed concern that the PRIMES model was unable to capture the full benefits of energy efficiency, notably because it focuses on just the costs of investing in energy efficiency, without recognizing the corresponding benefits from increased employment and the economic impacts delivered through reduced external energy expenditures. They felt this would severely hamper the ability of energy efficiency industry stakeholders to prove their economic case in the coming weeks. As a practical matter, participants realized that PRIMES could not be overhauled in the time frames required by the debate, and so they suggested that other robust and carefully selected models and economic projections be admitted alongside PRIMES to complement the numeric assessment of the impacts of more ambitious energy efficiency policies.

In the context of accuracy and clarity, experts also felt that the energy efficiency industry faces an issue of nomenclature, as policymakers and stakeholders alike tend to use “energy efficiency,” “energy savings” and “energy conservation” interchangeably. The group believed that “energy savings” were more important and easier to measure concretely than “energy efficiency,” which is in itself a derivative of an

uncertain future energy use. European “energy efficiency” targets are expressed as “energy savings” below a business-as-usual baseline and are most productively the result of “energy conservation” measures, leading to a less “energy intense” economy. “Energy conservation” was seen as the appropriate high-level objective for EU Member States, being the result of a drive toward greater “energy efficiency” and energy sufficiency. Specifically, experts believed that “energy intensity” at the level of a whole economy (e.g. terawatt-hours per unit of GDP) was a largely meaningless measure as it was too high-level, but that the “energy intensity” of buildings (kWh/square meter, for example) was very useful as a way to benchmark progress in the buildings sector.

Participants briefly debated the overall lack of reliable data for building renovation projects in Europe. Clearly, this was a barrier for the provision of the kind of long-term, low-cost finance that would match the expected life and risk profile of building renovations. While the absence of clear data was a problem common to many markets (e.g., energy efficiency in buildings was not alone in this gap – the full cost of nuclear energy was used as example), participants believed that giving the renovation sector access to energy data was a key ex-ante requirement, and that all EU-funded projects from 2014-2020 should establish clear and transparent metrics to fill the current data gap across all Member States. Participants saw adequate financing for the long-term transformation of Europe’s buildings according to its 2050 roadmaps as critical (having been highlighted in the IBE work). They also believed that much more could be done to engage utilities and banks in this area, in the context of the 2014-2020 multinational financial framework period.

Also, given the success of Corporate Average Fuel Economy (CAFÉ) standards in the automotive sector and end-use appliance standards, some members felt that 2050 building energy intensity reduction roadmaps for each Member State could drive energy efficiency effectively in the built environment – potentially forming the basis for new fiscal policies.

## CONCLUSION

To close, experts discussed how to summarize the workshop’s conclusions in a short and pithy “elevator pitch,” should such opportunity arise. Participants felt that:

***“To meet EU economy-wide energy and decarbonization goals, binding Building Energy Reduction Targets for 2030 are required – potentially structured like CAFÉ standards for Buildings’ energy intensity. Building efficiency targets would produce net economic and environmental benefits across Europe by creating jobs in the building sector, bolstering energy security, improving health & air quality and reducing pressure on energy supply systems.”***

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The Institute for Building Efficiency is an initiative of Johnson Controls providing information and analysis of technologies, policies, and practices for efficient, high performance buildings and smart energy systems around the world. The Institute leverages the company's 125 years of global experience providing energy efficient solutions for buildings to support and complement the efforts of nonprofit organizations and industry associations. The Institute focuses on practical solutions that are innovative, cost-effective and scalable.

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