

# ENERGY EFFICIENT BUILDINGS: POWERING EUROPE

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## Contents

Crisis puts off investors from big energy-saving spend .....	p.1	Efficiency law could 'triple' energy services market .....	p.5
German workers lead EU 'green jobs' revolution .....	p.2	Europe's factories braced for power price squeeze.....	p.6
Europe takes 'baby steps' to revamp public buildings.....	p.3	Building renovation can cut energy use and boost jobs.....	p.7
Industry: EU's energy efficiency bill unfair to big manufacturers .....	p.3	The need for demand-response in the energy efficiency directive .....	p.7

## Crisis puts off investors from big energy-saving spend



The financial crisis has made owners of large commercial and public buildings more cautious about spending on energy efficiency improvements. But experts argue that upfront investments are recovered fast and go beyond merely saving energy and reducing electricity bills.

Commercial and public buildings make up 25% of the existing building stock in Europe – a minority compared to residential houses.

But energy efficiency improvements there pay back faster than in residential houses because the reduction in electricity bills is more substantial, making the return on the initial investment visible more rapidly.

Surely, this should be enough to persuade public and commercial building owners to make the investment. However, the financial crisis has made them more cautious about making large investments in energy efficiency refurbishments.

"Every single investment cost is scrutinised very closely," says Adrian Joyce, secretary-general of EuroAce, a trade group representing leading companies involved in the energy saving goods and services industry.

"In growth times, companies

are more likely to invest, but during an austerity period, they go back to their core expertise, and energy efficiency is not their core," says Joyce, who speaks on behalf of companies like Johnson Controls, Saint Gobain, BASF and United Technologies. "There are not enough projects in the pipeline, they still haven't bought into it".

Working on public buildings, for example, can indeed be very costly, since most have a historical value that make it harder to carry out traditional energy efficiency improvements. "Public authorities still see expenditure on energy efficiency as public spending," Joyce said.

"But from our point of view, that is wrong because you get a return very fast."

### Funding schemes

One of the reasons for reluctance towards energy-efficiency improvements is the often heavy upfront investment cost and the need to see immediate results.

However, the burden of the initial capital investment can be spread through specialised energy services companies (ESCOs), like Germany's Kreditanstalt für Wiederaufbau (KfW), a gov-

ernment-owned development bank based in Frankfurt. KfW provides, through regular banks, long-term loans for residential houses, but also public authorities and enterprises that want to refurbish their old buildings or make their production more energy-efficient.

What makes the KfW scheme attractive for investors is that it also takes part of the investment risk, making it a leader in the field of energy efficiency. For every euro spent, investors saw a return of €5, calculated on the basis of the number of jobs created or the benefits brought to society and business. The same returns were experienced in Ireland, which also had an energy-efficiency state-funding scheme.

Still, the most frequent obstacle for investing in energy efficiency remains the long investment return period.

PlasticsEurope, a trade which represents companies in the sector, cites a "lack of funds" and the "inability to secure them on acceptable terms" as the biggest obstacles. "This is true especially for the initial investment costs, and this is where the industry needs concrete measures from national and European authorities," it said.

But commercial building owners need not worry about that, Joyce argued. "They can take investment in their assets – their buildings – and this way the investment doesn't show in their books, because as a lump sum it is spread throughout years, so they save not only on the energy bill, but also on taxes," Joyce explained.

By experience, Joyce says customers usually change their mind about the cost-benefit analysis after an initial energy-efficiency audit, even in times of economic austerity.

"There are many customers who do not know how much they can save," said Michel van

Roozendaal, in charge of energy solutions for Trane, a global business specialised in energy-efficiency services for the commercial and public sector.

In some cases, the payback is only half a year, if the systems business used to operate in were wasting a lot of energy, van Roozendaal explained. Usually, he said, the return on investments is between two and five years.

### Social and health benefits

Despite the more cautious attitude towards spending, there are many businesses all over Europe currently undergoing energy-efficiency improvements in their buildings, Maureen Lally of energy service provider Trane said. Whilst most of their reasons are economical, such as saving money on their electricity bill, businesses opt for lower-energy buildings also for the productivity and wellbeing of their employees, Lally said.

Joyce agrees there is "a good market" for commercial buildings at the moment, but says "it is not enough". He complains that owners' attitude, but also the existing literature and policy debates are "short-sighted".

"Everyone seems to concentrate uniquely on the economic measure put in place, but that is short-sighted, benefits are economical and social. In properly renovated buildings, the productivity of the work is higher, the comfort is higher," Joyce said.

### Proud to be green

And when economical or social reasons are not enough to convince a business or a public body to turn their buildings green, then the public relations argument will often work, said Jon Slowe, director of Delta Institute for Energy. In the corporate sector, reputation plays

a central role. When they make energy-efficiency improvements, companies are able to adapt their corporate messages and showcase their responsibility in managing their carbon footprint.

Most, if not all big companies already have what they call sustainability management plans. And there are also plenty of success stories in each industry to compare oneself with.

"At times of crisis, energy efficiency at production sites is already a prerequisite to reduce costs and is even increasingly becoming a marketing argument," says PlasticsEurope, a trade group representing the plastics sector. "Most businesses are already engaged in reducing energy consumption and such moves are likely to become more attractive in the future."

In the hotel industry for instance, higher energy efficiency standards mean better comfort and health for clients. For example, hotels rooms can turn on the air conditioning the moment the room card is put in its socket. Also, receptionists or building monitors can control the temperature in the room, verify the air quality and keep higher comfort standards in the most energy-efficient ways.

Such systems make hotels proud to be green, and they are not shy from flagging their actions to their clients. In the city of Brussels, 15 organisations, including luxury hotels and government buildings have been granted an eco-label set up by the Walloon government's environment federation (Federation Inter-Environment Wallonie) in 2011 after having proved they have efficient water, energy and waste management plans in place.

They are now effectively communicating to their clients and to the public the means through which they are encouraging an efficient, more sustainable living.

# German workers lead EU 'green jobs' revolution

Germany's building renovation programme has already mobilised €100 billion in investments, yielding around 300,000 direct jobs per year, according to a new report by the International Labour Organisation (ILO). However, much remains to be done to fulfil the promise of green jobs, experts warn.

According to the latest report from the International Labour Organisation (ILO), the drive for revamping Europe's building stock has already had a profound impact on employment.

The building renovation programme for energy efficiency in Germany has mobilised €100 billion in investments, reducing energy bills, avoiding carbon dioxide emissions and creating around 300,000 direct jobs per year along the way, the ILO said.

The OECD too has lauded Germany as a leader in environmental policy, saying it has become "a laboratory for green growth".

"The European economy is already generating a significant number of jobs in energy efficient constructions and will continue to do so in the coming decades," said the OECD's Deputy Secretary-General, Yves Leterme.

For industry sectors involved in the building insulation business, the drive for energy efficiency holds huge promises for employment.

"The renovation of public and commercial buildings could create up to two million jobs, kick start the economy and give Europe a competitive advantage in the world economy," says Thomas Bauwens of PlasticsEurope, an industry group.

## Need to adapt skills, training

However, the skills gap remains a major obstacle to green growth.

There is a "huge" need for education and training for the next generation of green jobs, Leterme warned as he presented the latest OECD report on 4 June - "The jobs potential of a shift towards a low carbon economy".

Speaking at the European Commission headquarters in Brussels, Leterme said the shift to green jobs will not happen without a related effort to adapt workers' skills and training.

"Green skills appear to be

hugely needed," he said. "But there is no need to reinvent the wheel," Leterme added. "Most of the green skills that new market entrants will require can be met through incremental enrichment of educational and training programmes."

Paul L. Swain, an OECD economist who drafted the report, also sounded a cautious note, saying the potential of "green-collar" jobs has yet to be fulfilled. "There is already a growth in jobs in the energy efficiency sector, but at this point it is well, well below the potential," he told EurActiv.

Experts in the property management sector confirmed that the jobs market for green skills was still largely underdeveloped. "There is a lack of professionalism in Europe," said Laura Lindberg, Public Relations Manager of RICS, a worldwide professional body for qualifications and standards in land, property and construction. "It is extremely important to have the right professionals with skills, experience and regularly trained. Today there is still a lack of skills and professional training in Europe that needs to be tackled," Lindberg added.

## Demand dampened by consumer ignorance

In fact, much remains to be done to fire up the jobs market for energy efficiency.

On the demand side, consumers are not yet fully aware about the benefits of building renovations. Lindberg, who represents professional property and land managers at RICS, believes this is partly due to incomplete scientific research. While energy efficiency revamps are generally regarded as beneficial from an economic point of view, other aspects are often ignored.

Energy efficiency "is about saving money", Lindber said "but also about the feeling it gives you, that you are doing something more for your wellbeing, such as that the quality of air is better for your health."

"It is about feeling better in an environment. If you work in a place that is extremely warm and not well insulated and noisy, the quality of life and work is reduced," Lindberg argues.

And then of course, there is always the financial cost of renovations, which weigh particularly heavily on investors



in times of economic hardship. In a global downturn, building owners might choose to compromise on the quality if they do not cancel renovation plans altogether. "People decide to invest in something cheaper, because it is not the best moment," Lindberg said.

According to the OECD's Paul L. Swain, countries like Australia also tried to move "too quickly" in promoting green jobs, putting in place large subsidies to retrofit houses and office buildings. When the recession hit in 2009, Australian authorities found that the work had not been properly checked and that much of the money had been wasted. "The problem they ran into was that they tried to spend that money rapidly but then it's hard to control quality," Swain said.

## Rush for green jobs leave thousands on the side of the road

On the supply side, the promise of a green jobs revolution has encouraged

thousands in the construction and building sector to apply for government accreditation to register their energy efficiency skills.

But they have run into a number of obstacles. In England, the economic crisis has derailed the government's plans, leaving around 8,000 professionals with accreditation but a lack of demand, said Martin Russel of RICS London.

This came on top of the high prices demanded to earn recognition as a "green expert". In the UK, for example, professionals pay government body UKAS around €7,000 to obtain accreditation for implementing specific energy efficiency measures in buildings, whilst it cost around €15,000 to earn recognition as an energy efficiency adviser.

The oversupply of energy efficiency professionals and the discontent at the initial lack of business was also a problem in Ireland, according to the International Energy Agency (IEA). The intensive promotion of courses by

commercial training providers has encouraged thousands to enroll in training programmes, more than the market required.

In Ireland, demand did eventually pick up, the IEA notes, leading it to conclude that a certain degree of oversupply of assessors was needed to ensure healthy competition in the market.

But problems arising from oversupply have persisted and generated a lack of trust between professional organisations and government authorities when it comes to applying for professional accreditations, Russel argued.

"There is interest out there, but I don't think people are rushing for it, they are being cautious at this time. There is a trust issue," Russel said.

He added, however, that on balance, the market in Europe for energy efficiency accreditation has been picking up and as long as there is enough demand there will also be an economic rationale for professionals to regain their appetite.

# Europe takes 'baby steps' to revamp public buildings



A year-long fight over renovation rates for public buildings in Europe has resulted in "a brilliant architecture" for revamping the existing stock, the European Parliament's chief negotiator has announced. But only central government "owned and occupied" buildings will be concerned, leaving whole sections unaddressed.

The draft Energy Efficiency Directive, which introduces a 3% renovation rate for all central government "owned and occupied" buildings in Europe, has entered the final straight.

Next Wednesday (13 June), negotiators from the European Commission, the European Parliament and the EU member states will try to hammer down a compromise on the proposed text. If they fail, negotiations will have to be postponed until 2013, when Ireland takes over the EU's rotating presidency.

But regardless of the

negotiation's final outcome, governments have already won a solid EU legal base for renovating public buildings, said Claude Turmes, the Green MEP from Luxembourg who is the chief Parliament negotiator on the draft efficiency bill.

"We have won a brilliant architecture for countries to achieve energy efficiency," Turmes told reporters yesterday (7 June).

Defining the steps needed to implement energy-efficiency refurbishments at national level, introducing targets and measures as well as the notion of "deep renovation" are some of the strongest achievements in the latest round of talks, Turmes said.

"Energy efficiency and building renovations will be an important part of the growth [initiative]" due to be launched at the next EU summit on 28 June, Turmes added, referring

to the European growth agenda championed by the new French President François Hollande.

## Setting the example

Public buildings – including those at regional and local levels – represent only 12% of the EU's building stock but the Commission believes governments should set the example for private owners. As public spending represents around 19% of the Union's gross domestic product, this would make it a potential key driver for the nascent energy-efficiency services and products market, which targets buildings as a priority.

An obligation for central governments to refurbish their buildings would also make sense economically, according to supporters of the directive. By decreasing their energy bills, public authorities could free up limited budgets for other purposes, argued British MEP Fiona Hall (Liberals and Democrats).

Claude Turmes, the chief Parliament negotiator, is hoping that "renovation roadmaps" will appear in the final text of the directive, a measure which he says would see 80% of the existing building stock revamped by 2050 in comparison with 2010 levels.

The United Kingdom, Turmes said, is ready to support roadmaps in exchange for keeping the scope of public building renovations as low as possible. He believes it will be easier to get a deal on the

roadmaps rather than waste efforts in trying to extend the scope of the directive to cover more public buildings.

## Ambitions watered down

In fact, the renovation of public buildings has been one of the most controversial issues in the directive since negotiations began.

In 2011, the European Commission proposed a 3% renovation rate that would target public buildings with a total useful floor area of over 250 square meters, an objective which activists already criticised for being too weak.

But member states later restricted this requirement further to include only "central government-owned" and "occupied" buildings, "with a useful floor area of over 500 m<sup>2</sup>". As of 9 July 2015, this would need to be lowered down to 250 m<sup>2</sup>.

The rewording resulted in significant reductions in scope for many countries. Whilst in Sweden, France and the Netherlands many buildings are owned by the central government, this is not the case in Germany, where regional authorities own most public buildings.

As a result, Germany will have to refurbish only around 37 public buildings. Similarly, in the UK, many buildings owned by the central government are historic and would be exempt from this requirement.

## 'Baby step'

Public authorities see building renovation as an expenditure, said Adrian Joyce, secretary-general of EuroAce, a trade group representing companies involved in the energy savings goods and services industry.

"The main challenges are financial and working on public buildings is costly," Joyce said. "But treating energy efficiency expenditure as public spending is wrong, because you get a return on money very fast," he contended.

The objective of the EU's energy efficiency bill is so low on public buildings at the moment, that the central governments will not be seen as leaders in this field, Joyce added. "It's a baby step".

By making sure the obligation covers only "central government owned and occupied" buildings, EU member states narrowed down the potential energy savings from 4.2 to 0.4 million tonnes of oil equivalent, which translates into a higher dependency on energy imports.

This is despite the fact that member states' energy import costs soared to over €400 billion in 2011 alone. "It is very brutal how the input of energy drags down the economy," Turmes said.

Philip Lowe, the European Commission's director general for Energy Efficiency, warned this shortfall in energy savings will also mean the continuation of avoidable capital outflow from the EU economy via energy imports.

## Industry: EU's energy efficiency bill unfair to big manufacturers

The energy-intensive metal industry feels under threat by the EU's energy efficiency bill, which, once implemented, would push electricity prices up and could bring their businesses close to closure, Brussels chief of German non-ferrous metal group WVM told EurActiv.



*Rolf Kuby is the chief of the Brussels bureau of WVM - Wirtschaftsvereinigung Metalle federation, representing the economic concerns of the non-ferrous metal industry in Germany, comprising 658 companies. Kuby spoke to EurActiv's Ana-Maria Tolbaru.*

**How do you assess the exact impact that energy prices have on your business? What models or scenarios do you use?**

The non-ferrous metal industry is very energy-intensive and has therefore always used all possibilities to measure the amount of energy used. Energy-intensive industries have a strong incentive to reduce their energy intensity due to the high share of electricity in their total production costs.

Modern energy management systems are used to support this effort. Because high electricity prices have been providing huge energy efficiency incentives, our industries have been optimizing their energy efficiency for a long time, leading to impressive results. We are now at the physical limits of improvement;

this was e.g. also recognized by the Fraunhofer Institute during the technical preparation for the ETS benchmarking process.

The European non-ferrous metals industry is a global leader as regards to productivity, energy efficiency, and especially its environmental standards. Here, the European non-ferrous metals industry has more than fulfilled its pioneering role. But being the best in the class makes it difficult to improve even further. The potential for additional efficiency improvements has reached technological limits.

**How badly can higher energy prices affect your**

**business? Could 'slightly' higher prices affect the industry, or do they need to be above a certain limit, starting from which it becomes unprofitable to run the business?**

Taking the example of the aluminum industry, the share of electricity cost in the total production costs is approximately 50%. Increasing the electricity price will consequently immediately lead to a significant rise in the overall costs. Very low carbon prices worldwide impact the

Continued on Page 4

### Continued from Page 3

profitability of the NF-Metals production in the EU. Prices are set at the London Metals Exchange for the whole world, but up to now these prices are only charged in the EU.

Also, the difference of the cumulative EU power costs is very substantial with other regions, "slightly" higher prices will just contribute more to that unequal playing field.

The effect is that there have been many closure announcements in the industry in many countries and the situation is critical. Investment in metals production in the EU is virtually impossible because of the unilateral energy and climate costs. These missed investments and closures lead to this situation: Europe's policy is actively creating a fast growing metals imports dependency. Despite the growing market for aluminum, only 14% of consumption was covered by primary production in 2013, which reflects the increasing need of import.

### Industries that use lots of energy need more help in the face of rising electricity prices - but where would this help come from?

An international level playing field for our industries on the costs of power is required, including ETS, renewables, and CHP costs, until competitors, elsewhere, bear similar costs. We require appropriate pricing of grid levies, given our user profile and recognition for 'interruptibility' services (our capacity to free large amounts of power, at short notice, for load balancing, preventing blackouts). All these factors must be combined in the long-term over 20-year power contracts, just like it is the case for this industry in most countries in the world. Only this will give us the long-term stability we need to make the very large investments, which can only be recovered over such long time periods.

### What do you think about the current form of the EU's Energy Efficiency Directive? It is the EU's main tool to achieve energy savings.

The energy-intensive NF metals industry commits to sustainable international climate protection. This is documented by several already more than fulfilled voluntary commitments dating from

between 1996 and 2006. The NF metals industry promotes and demands an international climate agreement with a level playing field.

Only under these circumstances will further investments in climate-friendly technologies be possible. The EU Energy Efficiency Directive should be done in a cost-efficient way and not to the detriment of the competitiveness of European companies. There are too many instruments which mutually affect each other and which lead to raising energy prices and multiple burdens for manufacturing industries. We are strictly against binding energy efficiency targets. With a binding ETS CO<sub>2</sub>-reduction target there is no need for binding energy efficiency targets (this would otherwise lead to double regulation in the ETS-sector).

The Energy Efficiency Directive has the potential to act as a catalyst to strengthen the market for energy efficient products and services. In particular, it must encourage an ambitious policy framework for medium- and long-term renovation of private and public buildings where significant untapped potential exists.

### The Energy Efficiency Directive should help member states decouple growth from energy use. The Commission, Parliament and also Council – formed by the 27 member states – have accepted this principle. What are your thoughts on this? Do we need an instrument to do that? If so, why isn't the proposed directive good?

A well-designed framework for energy efficiency can be a major lever for sustainable growth by boosting jobs in new economic areas and reducing CO<sub>2</sub> emissions while enhancing the competitiveness of the EU's industrial base. The energy efficiency directive should therefore:

- allow Member States sufficient room to develop tailored approaches that best meet individual circumstances;
- ensure that companies have the possibility to choose the technologies in which they wish to invest;
- avoid adverse interaction with other climate and energy policies, including the EU Emission Trading Scheme Directive;

- result in innovative improvements in energy efficiency rather than imposing a blunt cap on consumption that would place downward pressure on growth.

### What regulatory framework would your industry need in order to continue making profits, but also make significant energy savings?

A focus of energy savings is key for the energy-intensive NF-Metals industry. Electricity efficiency benchmarks should be based on electricity use per ton of production and not in absolute reductions.

### What technologies, services, tools is the industry using at the moment as a voluntary approach to energy-efficiency improvements? Do you get help in becoming low-energy from specialized bodies or companies?

The European non-ferrous metals industry is a global leader as regards productivity, energy efficiency, and especially its environmental standards.

The specific CO<sub>2</sub> emissions of the NF-metals industry have been reduced by 28 %. Thanks to the recycling of NF-metals alone, the industry currently saves 8 million tonnes of CO<sub>2</sub> per year. Industry is therefore an essential pillar of the German climate protection agreement. With its study on the "Costs and potentials of reducing greenhouse gas emissions in Germany" (2007, updated in 2009), the Federation of the German Industries, in cooperation with McKinsey, has successfully proven that industry is a problem-solver. Practically all the technologies analyzed in the study are based on the use of NF-metals, which are indispensable for climate protection due to their material properties.

### How do energy-intensive businesses fund these services? Where does the money come from?

Up to now innovation is funded through national and European Innovation and research programs.

### Have you found it harder in the current economic crisis to invest in energy efficiency improvements? Why? How did that reflect

### in terms of the growth in demand for energy efficiency services?

Creation of positive framework conditions for energy efficiency measures and energy services should take precedence over restrictive requirements.

### What would happen if the Energy Efficiency Directive came into force next year and energy prices would go up as a result? Is moving to another continent an option? If so, where? And would that not be too difficult, would it be more profitable?

To avoid any disproportionate legislation which could jeopardize seriously the competitiveness of EU non-ferrous-metals industry, all EU measures must undergo a competitiveness proofing. The effects of new legislation on particularly sensitive sectors must be taken into account and the impact of any new legislation must be considered in the context of already existing measures and burdens.

### What is the biggest concern of the energy-intensive industry when it comes to the Energy Efficiency Directive, in just one sentence?

The prime consideration for all energy efficiency measures should be cost-effectiveness.

### If governments say they would fund such a shift for energy companies from an energy-selling business model to one based just as much on selling energy efficiency services, prices might not need to go much, if at all. Would the business you represent trust the government? Would you take the government's word for it?

The Energy Efficiency Directive does in many aspects not respond to the veritable needs and challenges of the market and the society (which are linked to high financial risks and a lack of adequate financing / credit facilities). We fear that absolute energy consumption caps for Member States or binding energy saving targets for energy providers will lead to increasing energy prices and have negative impacts on the competitiveness of European companies.

### What incentives do you need in place in order to accept slightly higher energy prices?

In the first place we should all strive for lower energy prices and not accept it as a given that prices rise. We need policy measures which foster innovation, lower market entrance barriers for new technologies, provide for financing facilities and encourage best-practice-platforms. Energy savings in the industry sector are already incentivised by the ETS and should therefore not be imposed by the Energy Efficiency Directive.

### Do you have a 'plan B' if energy prices do go up more than usual? If the Energy Efficiency Directive doesn't drive prices up for the next few years, energy imports might – the prices for imports have been soaring in the past years.

No! In our primary industries we are already in plan B, in survival mode or closing.

It is a myth that the EU should have high energy prices or that these are higher here because of imports alone. The EU has a very favorable primary energy mix. The main reason for the high power costs and uncertainty is the short term marginal price based system, the lack of the possibility to have normal long-term power contracts, and the several high additional power costs.

### How do you see energy efficiency, why is the industry already implementing it voluntarily?

The non-ferrous-metals industry is very energy-intensive and has therefore always used all possibilities to measure the amount of energy used. Energy-intensive industries have a strong incentive to reduce their energy intensity due to the high share of electricity in their total production costs.

### Do you fear your industry might become uncompetitive if EU energy prices go up? If so, then what countries do you compare the EU to when you say this?

Yes indeed, the threat of being uncompetitive vis-à-vis non EU countries. Competitors are based all over the world.

Continued on Page 5

Continued from Page 4

**Would you like to be exempt from the EU's Energy Efficiency Directive, if this will result in higher energy bills for consumers (since businesses are also a consumer) ?**

For the energy intensive industries energy savings are already incentivized by the ETS and should therefore not be imposed by the Energy Efficiency Directive.

**How would you propose the directive should look like then? How would you improve this point that affects your industry?**

The Energy Efficiency Directive has the potential to act as a catalyst to strengthen the market for energy efficient products and services. In particular, it must encourage an ambitious policy framework for medium- and long- term renovation of private and public buildings where significant untapped potential exists.

We fear that absolute energy

consumption caps for Member States or binding energy saving targets for energy providers will lead to increasing energy prices and have negative impacts on the competitiveness of EU non-ferrous-metals industry.

**Danish energy-intensive companies now think that energy savings are good – the price for energy imports does not affect them as much, plus they need to import less.**

Denmark is probably the least representative example for this. There is no genuine electro intensive non-ferrous metals industry in Denmark. The industry that is (still) there is in a different situation. Only 1-2 energy intensive industries still are operating in Denmark and you find the highest energy prices in Denmark compared to the EU. The actual energy savings obligations are mainly realized in industry and should they be exhausted the potential will only lie on households.

**Also, the Danes believe it is much better to have the**

**government implementing such a savings obligation scheme for energy companies and then monitoring the scheme, than having private companies using this scheme as a business model and drawing in power utilities with different incentives (Prices will go up anyway, so is it not better to trust the government? How hard is it to trust governments?)**

It is not a question of trust in governments. The EU legislator and the Member States have certainly to regulate the internalization of climate and environmental costs to society. Ideally this should happen through international agreements to solve the overall impact of society on the worldwide ecosystems.

It is a question of doing the right thing to achieve a positive result for the environment in a cost-effective way. Increasing unilaterally compared to non-EU the production costs for non-ferrous-metals industries is reducing their competitiveness.

**What do you think of short-termism? Do energy-intensive companies invest money in energy efficiency renovations, even if the payback is sometimes very long? Are they forward-looking much with their budgets?**

The European non-ferrous metals industry is a global leader as regards productivity, energy efficiency, and especially its environmental standards.

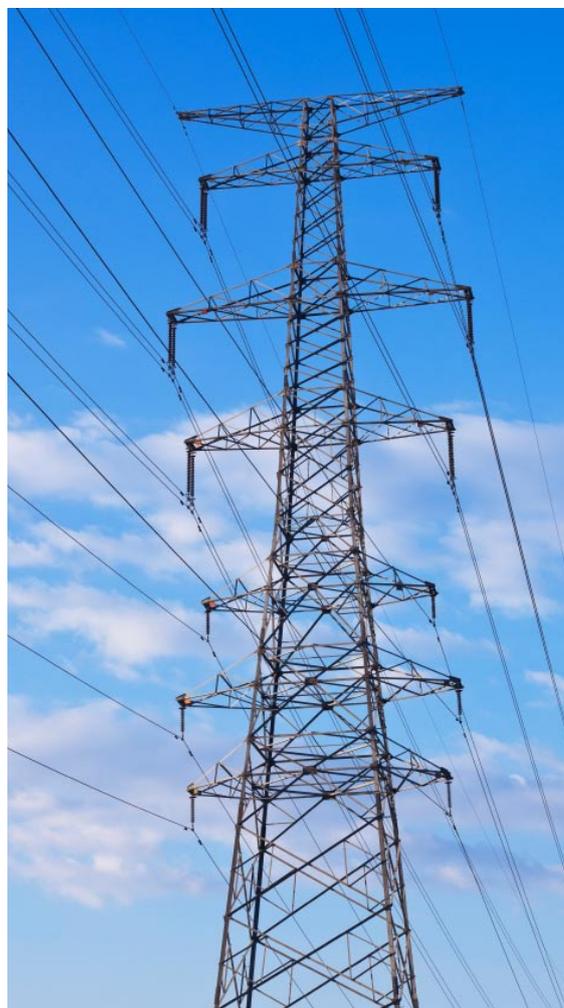
**How big is the potential of energy efficiency improvements in your industry?**

National energy efficiency targets should not result in absolute caps on energy consumption! The EED foresees absolute energy savings of 368 million tonnes of oil equivalent (Mtoe) in 2020. Energy efficiency should be defined as energy consumption in relation to economic indicators such as the production index. Early actions as well as remaining potential for cost-efficient energy efficiency improvements

should be taken into account. Remaining potentials in industry sector are low according to the impact assessment on the EED. High potentials in the buildings sector should be in the focus of the directive and not only public buildings! Aluminum, Copper, Zinc, Magnesium, Nickel and all other NF-Metals perform at the start of the value added chain often an invisible, but indispensable contribution to solve the problem of energy saving. The material characteristics of metals open new chances for technological applications and support energy efficiency product properties.

Innovation in climate protection is impossible without non-ferrous metals: from copper connectors for electric vehicles, via aluminum bodywork in automobiles, galvanized building material resistant to corrosion and lithium-ion batteries, to recycled lead starter batteries. Wind turbines, solar cells and electric vehicles can only operate by using the energy-intensively produced (base) materials of the NF metals industry.

## Efficiency law could 'triple' energy services market



The EU's upcoming energy efficiency directive could send strong enough signals to jump-start the market in energy services for commercial buildings, industry experts told EurActiv.

The draft bill contains the strongest incentives to date for triggering a boom in the market for energy efficiency services, according to a number of experts working in the field.

In its current form, the draft directive requires central governments to achieve a 3% renovation rate for the buildings they occupy, on a yearly basis. It also imposes an obligation on power utilities to achieve 1.5% annual energy savings among their final customers - including large commercial and public building owners.

As a result, power companies are expected to change their business model by seeking profitability in selling energy services rather than supplying energy only.

"If the final text is somewhere between what the Parliament is proposing and what the [member states] are recommending, then I think we're going to have something fairly solid," Brook Riley of green group Friends of the Earth Europe said after the latest round of 'triologue' talks

which took place between the EU's three institutions on 29 May.

This would be enough jump-start the energy efficiency services market, he added.

### Market set to 'triple'

Adrian Joyce, secretary-general of EuroAce, a trade group representing companies involved in the energy savings goods and services industry, was equally optimistic. With the right incentives in place, "the demand for and supply of energy-efficiency services is set to double or even triple in five years' time," he told EurActiv.

For Brook Riley of Friends of the Earth, only legally-binding measures will create room for the market to find the appropriate investors. "If we make it obligatory, we will have a market for energy savings," Riley said. "State guarantees is what investors need," he added, giving as an example the growing appetite for energy efficiency investments in the United States, where there are state-level laws to foster them.

In Europe, on example in Denmark, where the public sector played a role in guaranteeing a return on

investment. As the price for fossil fuels went up, Danish company Dong Energy found that they were actually making more money from selling energy efficiency services than from selling energy itself.

This resulted in a boom for the energy efficiency services market in Denmark. Coupled with national awareness-raising campaigns and change in consumers' behaviour, this all reflected in better insulation and automation of buildings and in the end, lower energy bills.

Not everyone is applauding, however. The Danish Energy Association told EurActiv they understand why EU governments are sceptical when it comes to funding energy-efficiency schemes, which come at a high costs for national public finances at a time when all governments are trying to cut spending.

"With energy savings, you will always experience initial costs, plus with the austerity measures taken all over the EU, it all translated into an eternal discussion of whether this investment pays off," a spokesperson of the Danish Energy Association said.

Continued on Page 6

### Continued from Page 5

These measures were taken in Denmark some time ago, far from an economic crisis like the one Europe is experiencing today, but during the 1970s oil crisis which pushed for urgent action. Whilst hard to introduce at first, evaluations of the Danish system have so far been positive.

### Private sector already taking steps

If government incentives do help, some companies have not

waited for binding laws to offer services for large commercial or public buildings owners.

"It's important for governments to offer incentives", Maureen Lally of energy service provider Trane told EurActiv. However, she added, many building owners are moving on their own by asking for the services of specialised companies.

An initial energy-audit shows tenants where they are wasting the most energy, and how they can save money from electricity or gas bills. "After the audit, we identify

areas of improvement," said Michel Rozendaal, energy expert for Trane. "This could mean putting controls in or more equipment or taking energy conservation measures, for example. Then we do a cost-benefit analysis and determine whether it is or not economically feasible and then we model to predict how their building will operate over time," Rozendaal explained.

Companies like Trane have developed their analytical models over time, based on their existing projects and taking into

account factors such as weather, geographical conditions, humidity, the duration of daylight and nighttime.

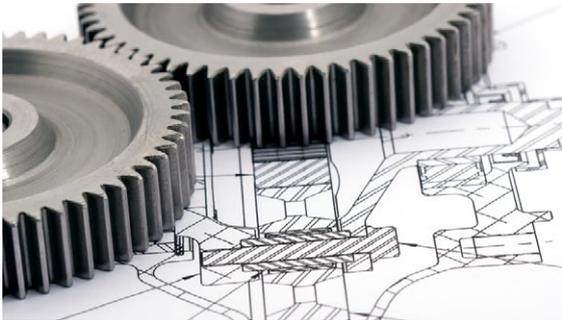
From the customer end, the biggest obstacle is scepticism over the period of time needed to recoup the investment. But reluctance to invest in projects with long investment-return can sometimes be addressed by experts equipped with the right tools. "There are many customers who realise they need to save energy and are looking for solutions, but also many who have no idea about

the potential," Rozendaal said.

Most investments Trane makes in fact have a two to five year payback, he added. Then, buildings start saving money from their reduced energy bills, making up entirely for the initial financial effort.

Social benefits are also considerable, experts argue. The productivity of workers increases in a better insulated, more comfortable and healthier commercial or public building, according to Adrian Joyce, energy expert for industry group EuroAce.

## Europe's factories braced for power price squeeze



EU member states are expected to close a deal on the bloc's proposed energy efficiency directive by the end of June amid worries over the consequences it could have over the price of electricity in Europe's factories.

Factory owners are unnerved by EU's the upcoming energy efficiency directive, which is set to be agreed at the end of the month.

One of the biggest changes that the bill could bring is an obligation on power utilities to save 1.5% on their customers' energy bills annually – including large energy consumers like chemical plants and metal factories.

Factories are the single largest users of electricity in Europe, according to the Buildings Performance Institute Europe, and they fear the savings obligation on power utilities will be passed on to them, squeezing already tight profit margins even further.

### Higher energy bills

Higher up the supply chain, power utilities argue they should be able to pass on the extra costs to their industrial customers.

"Governments have to deliver energy savings, but want low energy prices," said Nicola Rega of Eurelectric, the electricity industry association in Europe. "The concern is that energy companies will end up paying for everything," he added, saying that there is no guarantee power utilities will

be able to recuperate the cost through consumer bills.

If this was to happen, factories which use a lot of energy in their manufacturing processes will have to suffer the consequences of the price spikes.

In Germany, electricity prices are forecast to double by 2020 as a result of the governments' nuclear phase out and subsidies for renewable energy.

But while energy-intensive industries have so far been able to withstand those, they may now be reaching a breaking point.

In May, metal manufacturer Voerdal, the third largest aluminum smelter in Germany, filed for insolvency, immediately prompting warnings from industry representatives. "The production of metals is jeopardised by high energy prices that are no longer competitive at international level," said Ulrich Grillo, chairman of the metal manufacturers group WirtschaftsVereinigung Metalle (WVM).

### Sparing the manufacturers

Factories that count among Europe's biggest polluters have asked exemption from the EU's emissions trading scheme for carbon dioxide, which they described as an "energy capping" and "de-industrialisation" law.

In May, big energy users, including steel and aluminum producers, received the EU's green

light to obtain compensation from national governments for the extra costs resulting from the ETS. Such state aid is supposed to help factories switch to more energy-efficient modes of production.

Chemical giant BASF agrees and favours what it describes as 'a bottom-up' approach where energy-efficiency improvements at factory level are constantly monitored by external auditors.

In fact, those industries have already started doing their part in improving energy efficiency.

"We already have high energy prices and we are in a global competition," said Wolfgang Weber, Vice President for EU Government Relations at BASF. "We already think about what is the most efficient way to build a product and where – geographically and geologically," he told EurActiv.

To keep Europe's factories going, Weber proposed scrapping caps on energy demand altogether in exchange for increasing investment in energy efficiency.

"We need a clear signal that industrial energy demand should not need to be capped," Weber said.

Nicola Rega, energy expert for power utilities group Eurelectric, said he understood the position of energy-intensive industries. "For them, the cost of energy is so important that they do everything they can to optimise their system and improve efficiency."

If the energy efficiency directive was passed without changes, big industries would inevitably end up paying more, he said. "In the power utilities' energy savings obligation scheme, they will have to pay higher energy prices - and thus pay for the implementation of the schemes -, but they will not necessarily benefit from energy efficiency services," Rega said.

Rolf Kuby, chief of the Brussels bureau of WVM - WirtschaftsVereinigung Metalle

federation, representing the economic concerns of the non-ferrous metal industry in Germany told EurActiv in an interview that energy savings for energy-intensive industries are already incentivised by the Emissions Trading System (ETS) and should therefore not be imposed by the Energy Efficiency Directive.

### No one-size-fits all for all member states

The extent to which the energy-intensive industries will be affected depends on how member states are implementing the proposed energy-saving scheme at national level, according to Bogdan Atanasiu, from the Performance Institute Europe (BPIE).

In Germany, for example, factories are exempted from the cost of renewables (the so-called feed-in-tariffs of the German government) that is usually transmitted to end-users.

Eurelectric's Nicola Rega said it all comes down to the industry structure of each country. "There are different implications when it comes to the impact of cost, considering some countries, such as Germany, have more intensive energy industries, whilst in the UK, the industry is focused on commercial businesses."

Power utilities put their clients into three different categories: industrial, commercial and residential. But this client portfolio varies from one country to the other, so their positions might clash when it comes to deciding which category they should pass the extra costs to.

### Going carbon-neutral

Maureen Lally, of energy service provider Trane, believes companies usually see the benefits for themselves.

Taking Gillette's factory in Po-

land as an example of voluntary revamping, she said: "They didn't have a government telling them what to do, they did it on their own."

Thomas Bauwens from industry association PlasticsEurope, agrees. "At times of crisis, energy efficiency at production sites is already a prerequisite to reduce costs and is even increasingly becoming a marketing argument," he says. "Most businesses are already engaged in reducing energy consumption and such moves are likely to become more attractive in the future."

Supermarket chains are also taking their own steps in improving their energy efficiency. "Their customers won't spend money in their stores if they think they are wasting energy and not servicing their community," Lally said. If they want to be considered a leader in their field and set an example, they can even go carbon-neutral, like Microsoft has recently announced.

But the challenge might be bigger in the aluminum and the chemical sector, which consume more energy.

### Power utilities eye new business models

For power utilities, the new EU rules could radically change their business model, currently focused on selling energy, to selling efficiency services - a change which, they claim, will reflect in end users' electricity bills.

Bogdan Atanasiu, of BPIE, says all market forces have to move together at once, so that energy companies get a guarantee they will be able to change from selling energy to selling mostly energy efficiency services.

"You cannot impose this change onto energy retailers. This problem is complex and the only solution is to stimulate the energy services market," Atanasiu said.

# Building renovation can cut energy use and boost jobs



With the right policy framework and action to reduce energy consumed by Europe's building stock, EU member countries can create jobs, save money, reduce levels of greenhouse gases and improve energy security, argues Oliver Rapf.

*Oliver Rapf is the executive director of Brussels-based think-tank Buildings Performance Institute Europe (BPIE).*

"It is common knowledge in the energy and climate change community that there is enormous potential for reducing the energy consumed by Europe's

building stock. With the right policy framework and action by member states, massive savings could be made of the order of 68-71% by 2050, according to the study 'Europe's Buildings under the Microscope' produced by the Buildings Performance Institute Europe (BPIE).

Appropriate action would not only put money back in the pockets of Europe's citizens, but would also create much-needed jobs, reduce levels of dangerous greenhouse gases and improve energy security.

Although the benefits of increasing the energy performance of our buildings are today widely recognized,

the governments of Europe have so far proved reluctant to launch programmes for the comprehensive renovation of buildings as the negotiations around the Energy Efficiency Directive illustrate. Yet, the best moment to start this journey is right now. Why?

Although the large majority of Europe's buildings have been erected since the 1960s, most of the buildings need considerable renovation to make them sustainable and future proof. Such a renovation effort will require high-quality craftsmanship and engineering.

But beyond this need for capacity building lays the

overriding requirement for a common policy and incentives framework, which will encourage renovation on a broad scale.

Such a framework could be set out in national renovation plans, so-called 'roadmaps' which each member state would develop for their own building stock, and would be monitored on a Europe-wide basis. This has been suggested in the EU Parliament's proposal adopted by the ITRE Committee on 28 February 2012.

These plans - designed for the long run - would combine regulatory, financial, educational and promotional measures. They would address current market barriers as well as generate macro-economic benefits. Renovation roadmaps should take a holistic vision of the building sector and work towards specific targets such as a defined level of energy saving and renovation rates to be achieved within a defined period.

National roadmaps for renovating Europe's building stock would give long term certainty to the broad range of stakeholders active in the building sector, one of the largest economic sectors in Europe. They would trigger investment and innovation,

leading to economic growth and jobs that remain in the EU - indeed, a building can only be renovated in the place where it is located.

These days, European governments are tending to take a short-term view whereas any systematic renovation of the building stock implies the opposite thinking. Their focus should perhaps switch from looking at the admittedly high-upfront investment for implementing national roadmaps, towards the high return on this investment and overall economic benefits.

Europe is already missing out on business opportunities in the clean tech sector and is lagging behind China and the US, as a recent report by WWF and Roland Berger Strategies highlighted. Europe's sales of highly efficient and renewable energy technologies shrank in 2011, whereas China and the US are growing. Energy saving renovation of buildings provides an opportunity to grow both the renewable and the efficiency industry.

If European governments are serious about stimulating growth and employment, they should support national renovation roadmaps and make their development mandatory."

## The need for demand-response in the energy efficiency directive

The Directive on Energy Efficiency can overcome barriers to the development of demand response across Europe and ensuring its role in the context of the 2020 energy savings goal, says Sylvie Feindt. However, in many countries demand response is not enabled such as Italy, Spain, Greece or Poland.

*Sylvie Feindt is Director of environment policy at DigitalEurope, the trade association representing the information and communications technology industry in Europe.*

"In order to realise ambitious energy efficiency goals, DigitalEurope believes our energy landscape needs to evolve from a largely centralised production system to a much more decentralised, consumer-interactive and intelligent one.

There are various - often complementary - solutions to achieve this goal but, a key

element is demand response. Sustainable ICT solutions are key to enabling this new smart energy consumption model. Those solutions are available on the market today and are ready to be deployed.

Demand response manages end-user consumption of energy in response to supply, having energy users reduce their consumption at critical times or in response to an energy peak demand. Intelligent technologies are being developed and promoted by a number of companies in Europe to make energy reductions available in the context of Demand Response programs.

These technological advancements allow making 'intelligent' decisions for industrial sites or buildings using demand response technology, carefully 'curtailing', in progressive stages, the energy usage for each facility or building. By acting in this intelligent manner, gen-

eration, is minimally affected until the energy squeeze crisis passes. If those technologies are associated with intelligent and distributed management systems, they would also enable end-users to monitor, control and supervise their energy consumption.

According to a study by Caggemini, VaasaETT and Enerdata (Demand Response: a decisive breakthrough for Europe, Caggemini, VaasaETT and Enerdata, June 2008), demand response alone could achieve 25-50% of the EU's 2020 targets concerning energy savings and CO<sub>2</sub> emission reductions.

Demand response also offers large business potential to European companies; the size of the demand response market is about \$5 billion in the U.S. However, in many countries demand response is not enabled such as Italy, Spain, Greece or Poland. In most of the 27 EU

countries, it is simply very difficult due to various obstacles including the lack of appropriate base load measurement requirements in the UK and Germany or a clear payment and contract structures for demand reductions in most European markets. In addition, the development of demand response needs to be organised in Europe in order to offer a real potential in terms of energy-savings.

The Directive on Energy Efficiency can overcome barriers to the development of demand response across Europe and ensure its role in the context of the 2020 energy savings goal. Consequently, we need European-wide market design improvements and measures to encourage technologies and systems enabling demand response programmes.

We call policy-makers to remove the barriers to the development of demand-response in Europe."

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### Contact us

**Delia Nicolaescu**  
delia.nicolaescu@euractiv.com  
tel. +32(0)2 788 36 12

**Ross Melzer**  
publicaffairs@euractiv.com  
tel. +32(0)2 226 58 17

### Other relevant contacts:

**Rick Zednik**  
ceo@euractiv.com  
tel. +32(0)2 226 58 12

**Frédéric Simon**  
executiveeditor@euractiv.com  
tel. +32(0)2 788 36 78