

EVENT REPORT

Transatlantic Best Practices for Energy Efficiency – How to Reduce Energy Dependence by Spurring Demand Response and Energy Savings?

The Ukrainian crisis has pushed energy security high on the agenda of EU policy makers. Energy efficiency could be the ‘silver bullet’ to reduce energy dependence, while at the same time boosting climate protection and competitiveness. The European Commission has recently been analysing different scenarios for the review of the Energy Efficiency Directive (EED), including the [proposal of a 2030 energy efficiency target](#). At the June Council, the Commission presented a [plan for the reduction of EU energy dependence](#).

The United States is often cited as an example when defining strategies to increase energy independence. Energy efficiency is widely recognized as having more immediate impact potential than possible exports of LNG from the U.S. to Europe, or if Europe were to develop its own domestic shale gas resources. The U.S. is rapidly improving innovation in energy efficiency and leaving Europe behind in the implementation of demand response measures.

What can Europe learn from the U.S. to get consumers involved in the electricity market? What should the EU do to unlock the potential of demand side flexibility and deal with concerns about adequate data protection? How should funds, regulations, incentives and measures be designed and implemented to ensure success in promoting energy efficiency? How can market and non-market barriers be identified and overcome to foster energy savings? In what way could 2030 energy efficiency targets help the EU to reduce its emissions in a cost effective way and to increase its energy security and how would this compare to an emissions-only approach? How can transatlantic cooperation help to unlock mitigation opportunities in energy efficiency in the pre-2020 period?

These and further questions were discussed at a lunch debate organised by the EU office of the Heinrich Böll Foundation in Brussels on the 18th of June 2014. The event was part of the EU-funded project ‘[The Transatlantic Energy and Climate Network](#)’, which is committed to strengthening dialogue between Americans and Europeans to advance a sustainable clean energy economy on both sides of the Atlantic. The lunch debate was moderated by Stefan Scheuer, the Secretary General of the Coalition for Energy Savings. Members of the panel were Mark Wagner, Vice President for U.S. Government Relations at Johnson Controls, Inc., Paul Hodson, Head of Unit Energy Efficiency, DG Energy, European Commission, Frederick Weston, Director, Regulatory Assistance Project (RAP) and Harry Verhaar, Head of Global Public & Government Affairs, Philips Lighting, Chairman of the Board of the European Alliance to Save Energy (EU-ASE).

Energy Efficiency in the European Union: Existing Initiatives and Remaining Potential

Europe's '[Energy Dependence Day](#)', the date on which Europe runs out of indigenous energy and needs to rely on foreign fuel imports, moves to an earlier time each year. The 2014 'Energy Dependence Day' fell on the 18th of June, which coincided with the date of the Heinrich Böll Foundation's lunch debate on transatlantic best practices for energy efficiency. Increased energy efficiency could help to move that day to a date much later in the year. Initiatives such as the EU Alliance to Save Energy and the Coalition for Energy Savings bring together a broad range of companies, environmental NGOs, trade unions and local governments in order to influence Europe's economic and energy policy-making towards more energy efficiency.

Due to the Ukraine crisis, the topic of energy savings and energy efficiency has recently become quite visible on the EU agenda as it could be an important contribution for energy security in the short, medium and long term. But in fact the EU has already been implementing energy efficiency policies for quite some time in order to reduce energy consumption by 20% by the year 2020 as part of the EU climate and energy package from 2008. Energy efficiency is crucial for Europe to reach its climate goals and thus contribute to the global fight against climate change. However, large potential for improvements remains. Currently, energy efficiency is being enhanced by 1% per year. By raising it to 3%, the EU could save 560 billion dollars by 2030.

Moreover, energy efficiency is not only beneficial for the climate, for the security of supply and for the EU budget, but it also [increases competitiveness](#). While less energy demand will lead to lower investments in power plants, investment needs in products and services will increase. This transition entails challenges but also opportunities for energy utilities. Such a change in investment structures can foster economic progress and can reduce public budget and trade deficits. Additionally, measures to increase energy efficiency will create new jobs, especially in the construction sector. Thus, as Europe will never lead in cheapest energy, it could be Europe's strength to lead in least energy used.

Lessons learned in the United States

The question is how to unlock Europe's potential for increasing its energy efficiency for more energy security. It might be helpful to look at the US, which is [projected to become energy independent by 2035 according to the International Energy Agency \(IEA\)](#). In June, the Environmental Protection Agency (EPA) released its [Clean Power Plan](#), the Obama Administration's proposal for reducing carbon emissions from US power plants under the regulation of the [US Clean Air Act](#). The Clean Power Plan would require the states have to develop their own plans to reduce greenhouse gas emissions. The EPA sets a standard for each state on the amount of emissions that needs to be cut and the states are given flexibility to decide how to achieve these targets. There exist plenty of different means to reduce greenhouse gas emissions, but mainly one can distinguish between inside the fence line measures like switching from coal to gas, or applying more efficient ways to burn coal, and outside the fence line measures like switching to renewable energy. The Clean Power Plan groups the states' options into four categories: rendering coal plants more efficient, using more lower-emitting power sources, increasing renewable energy capacity, and increasing demand-side energy efficiency.

An example for successful energy efficiency policies can be found in the state of Vermont. In the late 1980s efforts to pose energy efficiency obligations on utilities were made in Vermont. However, due to restructured markets, these standards were hard to maintain. As a solution a completely new utility, the so-called '[Energy Efficiency Utility](#)', was created with the purpose of delivering energy efficiency services throughout the state of Vermont. The programme is financed through a levy on electricity consumers' bills (the 'Energy Efficiency Charge'). This approach turned out to be widely successful, especially in the field of electricity end use.

Another successful method to deploy energy efficiency in the US is energy savings performance contracting. This means that a company like Johnson Controls retrofits a building without any upfront costs for the client. The client will then pay the company with the savings from his or her utility bill. The bills after the refurbishment are guaranteed to never exceed those from before. The energy savings will then pay off through lower utility bills as soon as the debts are covered. Additionally, the results of the refurbishment are guaranteed. Another possibility is to tax an investment for a renovation to the building itself. Thus – if the building is sold – the tax is passed on to the new owner.

The United States has also learned from failures and situations of crisis. One of these lessons learned comes from Hurricane Sandy, which caused massive black-outs in the Mid-Atlantic states in October 2012. However, a few islands of light remained in the affected coastal regions due to power cogeneration. This event showed the importance of resilience that can be achieved through microgrids or larger installations, as well as the necessity of innovation.

Barriers and Potential Solutions

There are several barriers to unlocking the potential for increased energy efficiency, both in Europe and in the US, which comprise areas such as technology, policy, financing and communication. Main barriers include upfront capital or operating costs. There are remarkable differences between investments in energy efficiency on the one hand and supply side investments on the other. One possible way of dealing with upfront costs for energy efficiency improvements has already been mentioned: the business model of energy savings performance contracting without any upfront expenses for the client, but payment through energy savings.

A further issue is split incentives, meaning that the person who invests into energy efficiency is not the one benefitting from it. Additionally, the so-called income effect leads to a low prioritisation of energy efficiency as the use of energy only covers a small part of most people's or businesses' cost structure even though it has a large influence on the GDP. Additionally, financial institutions often fail to support investments into energy efficiency measures. Issues at stake in this regard are a lack of information and awareness as well as a misperception of the market value of energy efficiency.

There is no single universal method to overcome these barriers but rather a variety of means that need to be fitted to specific cases. What they all have in common, however, is the requirement of careful planning and programme design as well as the need of a policy context with certain obligations. A very effective way of achieving energy efficiency is the deployment of minimum performance standards to remove the temptation of cheap inefficient solutions which are not profitable on the long run. Another

method can be to regard energy efficiency as a resource that needs to be acquired and paid for like any other resource. This approach can help to finance refurbishments or the installation of more energy-efficient devices, as energy efficiency is put on the same level as any other necessary resource— it is just the most cost-effective one.

Even more difficult for financing energy efficiency than achieving sufficient financial means is the need to connect the funding to the right solutions. One way to foster energy efficiency is the stimulation of innovation and larger investment in smart and connected solutions. It is also very important to communicate energy efficiency in the right way; to inform adequately and to point out its importance and benefits. It is also necessary to provide reliable ways of measuring the amount of energy savings and prove that actions actually lead to emission reductions and financial benefits. Another suggestion is to decouple end use efficiency and processing efficiency. 80% of energy use can be found in end use. Deployment of energy efficiency is easier in end use than in processing, especially as big companies might not be very willing to cooperate and have a strong voice. This could slow down the process. Thus, according to this line of argument, energy efficiency should first be promoted in the end use area and thus show the potential of energy efficiency and make it easier to collaborate with industries.

What should not be forgotten is the contribution to climate change mitigation that can be delivered through a reduction of energy consumption. A main difficulty is how to assign exact values to the energy savings and how to measure the emissions reductions that have been achieved thanks to energy efficiency. Related to this is also the question of if policies that are implemented to reduce greenhouse gas emissions can help to deliver energy efficiency. The allocation of CO₂ targets for example can encourage the use of energy efficiency. Even more important than certain targets, however, are the policies on how to meet these targets. An example can be found in several US states that have implemented a cap and trade programme for carbon emissions and used the revenues from auctioned allowances to invest in energy efficiency measures.

Last but not least, demand-side management plays an important role to increase energy efficiency and to integrate a growing share of variable renewable energy sources into the energy system. A big challenge for enhanced energy efficiency through demand-side management is to understand people's behaviour rather than to maximize consumption. Price-response by customers or automated systems regulating light or temperature in buildings can reduce energy use significantly and are especially crucial to decrease energy consumption during peak-load times. Communication is very important in this regard: by arguing with the benefits of energy efficiency in terms of comfort, energy costs as well as climate protection, consumers/citizens as well as politicians should be convinced and engaged. At the same time, concerns about adequate data protection have to be addressed.

Transatlantic Cooperation for an Energy-Efficient Future

Currently, the EU and the US are moving in two different directions due to differing settings. This, however, does not mean that collaboration and exchange cannot be successful. On the contrary: there is great potential for Europe and the US in teaming up on energy efficiency for a joint innovation agenda. They have a similar level of knowledge, similar interests and strengths which creates an optimal basis for

fruitful collaboration. Converging developments in the context of the Transatlantic Trade and Investment Partnership (TTIP) might open up risks and opportunities for product and measurement policies with effects on energy efficiency. The negotiations have an impact on converging US and EU markets and economies. Additionally, standards are being aligned by harmonizing the ways of measuring them and thus rendering them more comparable.

Through increased collaboration, and with the necessary political will, the EU and the US can unlock their full potential in energy efficiency by exchanging knowledge and best practices. In the run-up to the 2015 Paris Climate Summit (COP21) transatlantic initiatives should boost energy efficiency at national, regional and international scale.



About The Transatlantic Energy and Climate Network

The Transatlantic Energy and Climate Network is a project of the Heinrich Böll Foundation committed to strengthening dialogue between Americans and Europeans to advance a sustainable clean energy economy on both sides of the Atlantic. This project is funded by the European Union.