

## Background Paper

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# Energy efficiency - Good for the environment and independence from Putin

## Why Energy Efficiency?

Due to the on-going crisis in the Ukraine it becomes apparent every day, how problematic our dependence on Russian oil and gas is. Only in the 12 months from October 2010 until September 2011 the import dependence amounted to a cost of 408 billion euros for the 27 EU countries. This means **more than one billion euro per day**. By far the most important energy supplier, for gas as well as for oil, is Russia.

The debt crisis is partially caused by strong energy dependence. In 2011 the trade balance deficit of the European Union amounted to a total of 66.6 billion euros in comparison to 408 billion euros for the import of fossil fuels. In the southern European crisis states, like Portugal and Italy, the discrepancies are even higher. There the costs for fossil fuels are 1.89 billion euro (with a Portuguese account deficit of 1.63 billion euro in the 3rd quarter of 2011) and 17.58 billion euro (with an Italian account deficit of 8.21 billion euro in the 3rd quarter of 2011).

In 2015 the states of the world will convene in Paris for a decisive climate conference. The goal is to create an international agreement that includes China and the US. For the first time in history it seems realistic to achieve such an agreement. President Obama has recently presented an ambitious climate protection plan in the US. A few months ago, China introduced carbon emission trading for the first time.

In order to achieve a worldwide agreement, the European Union has to propose an ambitious and credible climate protection strategy. The costs for the reduction of CO<sub>2</sub> and the use of fossil fuels vary greatly among the different approaches. The expansion of renewable energies, the construction of new nuclear power plants as well as the carbon capture and storage (CCS) are comparatively expensive. Per deployed euro energy efficiency can achieve much more. Beyond that, energy efficiency relieves the infrastructure. In the electricity sector for example, electricity that is not needed does neither need new lines, nor storage, nor backup power plants. **Energy efficiency is the cheap part of the needed changes for the energy system.**

## **What exactly is Energy Efficiency?**

The biggest saving potential lies in the housing sector. By insulating buildings or exchanging old boilers by modern and efficient ones, a gigantic amount of savings can be achieved. The so called low-investment measures are also of importance. By using hydraulic balance for small investments 10-15% of the energy for heating and hot water preparation can be saved. The hydraulic balance causes the heat to appropriately and evenly spread around the whole house.

There are also big saving potentials for industrial applications.

Through the use of modern, efficient household appliances, e.g. refrigerators and laundry dryers, electricity can be saved and the consumer is relieved of increasing electricity prices.

## **Why does the European Union have to act?**

The crisis in the Ukraine is another example showcasing that our dependence on fossil fuels is becoming a political problem. Climate protection is a cross-border issue and only an ambitious European position can make a worldwide contribution to an international agreement.

A common European strategy has serious advantages over solely national actions. Prices for energy efficient goods are able to decrease if all trade participants accept a European market for energy efficiency.

European companies are leading in the production of energy efficient heating systems, household appliances and isolation material. Therefore it is wise to establish a stable market for these companies. The Treaty of Lisbon also imposes a commitment of the European institutions to support energy efficiency. Only since the Treaty of Lisbon in 2009, do we have an explicit legal obligation in the Treaty (see below). All measures that were taken before, also the introduction of compulsory goals in the renewable energy sector, happened without such a clear legal position.

## **The current legal Situation**

Since 2007 climate and energy goals apply in the European Union. A 20% reduction of CO<sub>2</sub> and a 20% share of renewable energies are binding targets. Due to the 2012 energy efficiency directive a legal framework for the support of energy efficiency has been established. The concerned proposal was initially under big criticism as it contained too explicit rules e.g. for cities and counties. After intensive debates between Council, Parliament and Commission a directive was accepted, that was much less bureaucratic but unfortunately also less ambitious. The 20% target will probably not be reached by only applying this policy.

The core of this directive is article 7. This stipulates that all member states have to make sure that citizens and companies are incentivised to improve their energy efficiency. This shall amount to 1.5% savings annually. Each country can decide which kinds of incentives it proposes.

## **What is the European Commission planning?**

It is expected that the European Commission will issue an evaluation of the implementation of the energy efficiency directive and propose a strategy until 2030

during its last meeting on July 23rd. According to media coverage the Commission is unfortunately not planning to propose ambitious binding targets. Under discussion is a target of 25-27% that is only indicative. But there are efforts by several member states and parts of the Commission to raise the target to 30%. For renewable energies, the commission set up a binding target of 27% but does not elaborate on how to reach it. In the existing renewables directive there are binding national targets. This path will currently not be further elaborated. Under discussion are voluntary commitments of the member states that will then add up to the European target.

### **What is the Position of the European Parliament?**

The European Parliament has for the first time in its history prepared a collaborative report of the members of the climate and industry committee, the so called Szymanski/Delvaux-Report. This was adopted with a majority in plenary. It demands the introduction of a 40% binding energy efficient target until 2030 and the conversion of these binding targets into national binding targets. The foundation for the decision of the European Parliament was a study of the Fraunhofer-Institute showing that savings of 40% will be cost-efficient for the economy in Europe, [http://energycoalition.eu/sites/default/files/Fraunhofer%20ISI\\_ReferenceTargetSystemReport.pdf](http://energycoalition.eu/sites/default/files/Fraunhofer%20ISI_ReferenceTargetSystemReport.pdf)

### **Why three binding targets for the European Climate and Energy policy?**

Many member states and business representatives are demanding that only one goal of the European climate and energy policy should be binding in the future. This position is held for example by Great Britain and Poland but also by Business Europe. Parliament and several others national governments on the other hand support three binding targets.

#### **1. The positive effects for growth and employment:**

With the publication regarding climate and energy target until 2030 the European Commission also conducted and published an extensive Impact Assessment. It clearly states that the setting of three targets has a positive effect on growth and jobs in Europe. On the other hand, the setting of only one target has a moderately negative effect on growth compared to business-as-usual: „**Table 16 gives an overview of the projected GDP impacts based on the GEM E3 model. As regards the GHG-lead scenario resulting in 40% GHG reductions, it projects a loss of between 0.1% and 0.45% of GDP depending on the approach to carbon pricing in the non-ETS sectors and the use of auctioning in the ETS**” (source: impact assessment for a 2030 climate and energy policy framework of the European Commission, p. 81).

The positive effect on growth is bigger with three targets than with one target.

**Table 18: E3ME projections of GDP impact for 2030 compared to Reference of scenarios based on concrete and more ambitious EE policies**

	GDP (€2005m)	2030 change compared to Reference
Reference	15631346	
GHG40EE	15716872	0.55%
GHG40EERES30	15702597	0.46%
GHG45EE RES35	15714010	0.53%

In both cases the Impact Assessment assumes an improvement in employment. However, the employment effect is increased if three targets are made (Impact Assessment, p.87). The reason is that energy efficiency and renewable energies create growth and employment in the European Union and energy imports are being subsidized. Simply phrased: Less money will go to Putin and the oil sheiks, instead more money will go to the local economy actors and the European industry that produce energy efficient goods as well as products for renewable energies.

## **2. The Legal situation:**

The EU treaties specify that the EU has to support renewable energies and energy efficiency. The Treat of Lisbon from 2009 stipulates:

Article 176 A

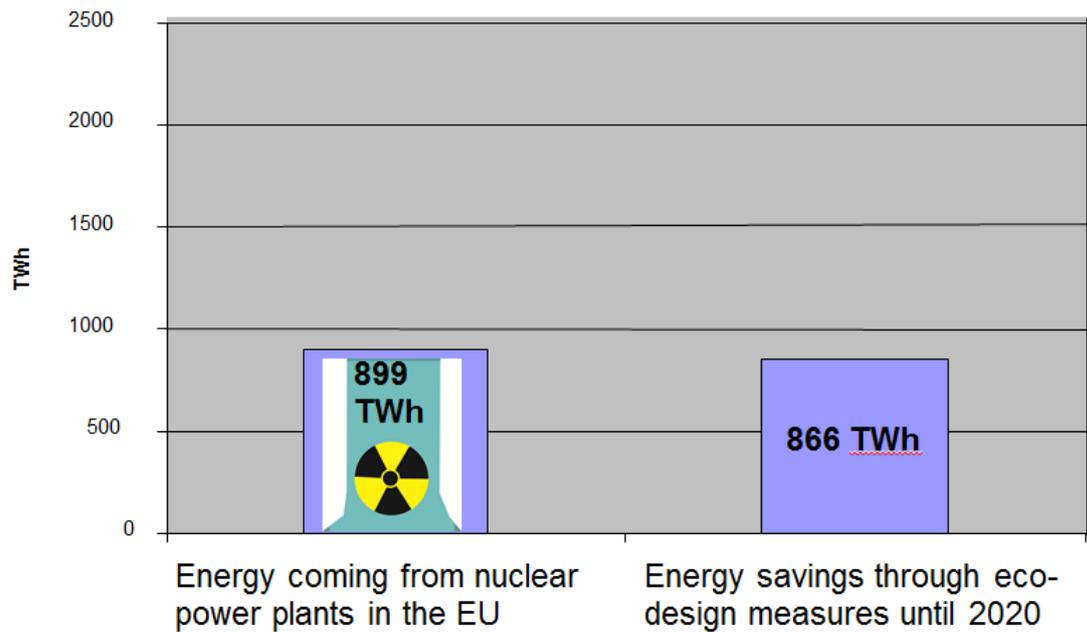
1. In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:
  - (...)
  - (c) promote energy efficiency and energy saving and the development of new and renewable energy sources

## **3. Risks of Nuclear Energy:**

The commitment to one single target would mean that renewables, energy efficiency and nuclear energy were treated the same. This is not appropriate as nuclear energy is connected to distinct risks and for example the question of the ultimate disposal place is still not answered. Indeed, the European Union is not able to force member states to drop out of nuclear energy but we are committed to not treat nuclear energy and renewables and efficiency the same.

## **Importance of the Eco-design directive and problems**

An important mechanism for the improvement of energy efficiency is the ecodesign directive that was already approved by Council and Parliament in 2005. By means of different, already decided, measures 886 TWh (about 164 Mtoe primary energy consumption) of energy will be saved until 2020. This corresponds to the performance of over 80 nuclear power plants or approximately 10% of the total energy consumption of the European Union.



Especially big saving contributions are made by measures to electric motors, 135TWh corresponding with 17 power plants, and measures in the heating and hot water sector, 125TWh corresponding to 15 power plants. In the next few months more important measures will follow, such as ventilation units (100 TWh of savings).

Experts as well as the public did not criticize most of these measures and gave rather positive reviews. Critical discussion came up in the field of household lights, in the field of vacuum cleaners and in the field of coffee machines. Especially the last to measures amount to savings that are very small. The Commission hope to achieve savings of more than two TWh until 2020 with the help of changed coffee machines. Vacuum cleaners are supposed to save 19 TWh.

In my opinion measures that disturb the manageability of the goods for the consumer should be avoided in the future to not weaken the acceptance of the European climate and energy politics. However, this does not mean that the ecodesign directive is useless and is not able to lead to energy efficiency contributions.