

EU plans to reduce GHG emissions with 80% by 2050



Zoltan Magyar
University of Pecs, Hungary
REHVA vice-president
zmagyar@invitel.hu

The European continent has not only embraced renewable energy, but it is determined to exceed all emissions goals it is faced with. Not content with decimating its 2012 targets and being on track to more than meet its 2020 goals, the EU is now aiming to cut total emissions by 80% by 2050. The European Commission has developed a roadmap on 8 March 2011, which sets out key elements that should shape the EU's climate action helping the EU become a competitive low carbon economy by 2050. Although the continent is aiming to reduce emissions by 80%, this is actually just their minimum aim — the roadmap lays out plans to cut greenhouse gas emissions by up to 95%.

Scientific evidence indicates that global warming needs to be limited to less than 2°C above the temperature in pre-industrial times. Without firm global action to limit climate change, temperatures could increase by 2°C or more by 2050 and 4°C or more by 2100. To stay below 2°C every country will have to reduce its greenhouse gas

emissions (GHGs), but developed countries will need to take the lead by targeting a cut of 80-95% below 1990 levels by 2050. The European Council and the European Parliament have endorsed this target range as an EU objective in the context of developed countries as a group making the reductions needed.

The EU with little more than 10% of global emissions will not be able to tackle climate change on its own. Progress internationally is the only way to solve the problem of climate change, and the EU must continue to engage its partners. Today, countries representing more than 80% of global emissions have pledged domestic targets under the Copenhagen Accord and the Cancun agreements. For some countries, delivering on these pledges will require stronger action than currently envisaged. The main target is to globalize climate change policies.

Achieving these deep emission cuts will require a transition to a climate-friendly, low carbon economy. The analysis on which the Roadmap is based shows that the most cost-efficient pathway to an 80% domestic reduction in 2050 requires a 25% cut in 2020 through domestic measures alone. The analysis also shows that this can be achieved if the EU delivers on its existing commitment to improve energy efficiency 20% by 2020. The Roadmap provides guidance on how this transition can be achieved in the most cost-effective way. It gives insights into what type of technologies and actions need

to be implemented and what types of policies the EU will need to develop over the next 10 years and beyond. The Commission has carried out an extensive modelling analysis with several possible scenarios showing how this could be done. This analysis of different scenarios shows that domestic emission reductions of the order of 40% and 60% below 1990 levels would be the cost-effective pathway by 2030 and 2040, respectively. In this context, it also shows reductions of 25% in 2020. This is illustrated in **Figure 1**. Such a pathway would result in annual reductions compared to

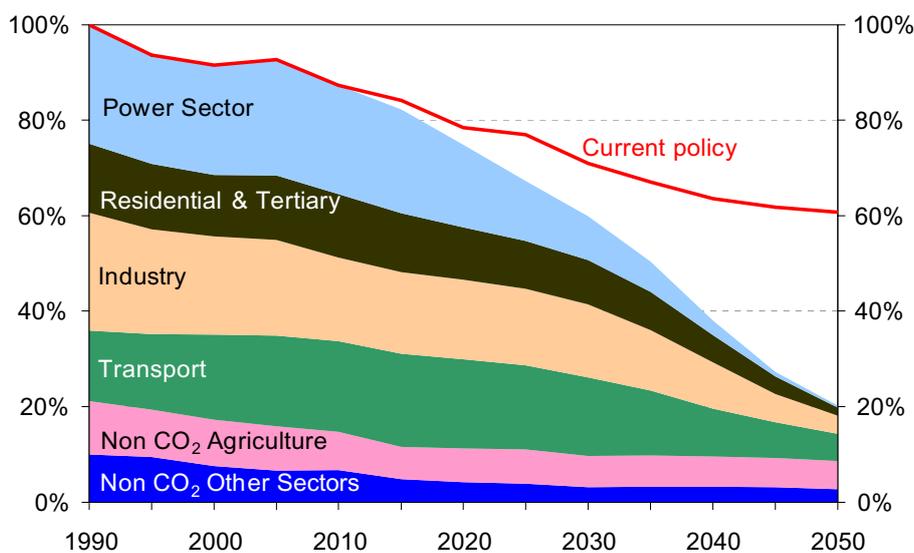


Figure 1. EU GHG emissions towards an 80% domestic reduction (100%=1990). [1]

Table 1. Sectoral reductions. [1]

GHG reductions compared to 1990	2005	2030	2050
Total	-7%	-40 to -44%	-79 to -82%
Sectors			
Power (CO ₂)	-7%	-54 to -68%	-93 to -99%
Industry (CO ₂)	-20%	-34 to -40%	-83 to -87%
Transport (incl. CO ₂ aviation, excl. maritime)	+30%	+20 to -9%	-54 to -67%
Residential and services (CO ₂)	-12%	-37 to -53%	-88 to -91%
Agriculture (non-CO ₂)	-20%	-36 to -37%	-42 to -49%
Other non-CO ₂ emissions	-30%	-72 to -73%	-70 to -78%

1990 of roughly 1% in the first decade until 2020, 1.5% in the second decade from 2020 until 2030, and 2% in the last two decades until 2050. The effort would become greater over time as a wider set of cost effective technologies becomes available.

Figure 1 illustrates the pathway towards an 80% reduction by 2050, shown in 5 year steps. The upper “reference” projection shows how domestic greenhouse gas emissions would develop under current policies. A scenario consistent with an 80% domestic reduction then shows how overall and sectoral emissions could evolve, if additional policies are put in place, taking into account technological options available over time.

Based on the cost-effectiveness analysis undertaken, the Roadmap gives ranges for emission reductions to be achieved in key sectors by 2030 and 2050 (see **Table 1**). The greatest emission reductions can be made in power generation, which will be almost completely decarbonised by 2050. A wide range of existing technologies will need to be widely deployed, including more advanced technologies, such as photovoltaics, that will continue to become cheaper and thus more competitive over time.

Above-average contributions in the medium and long term can also be achieved by the residential and services sector. Industry would decarbonise slightly less than the overall economy in the medium term, but would be able to achieve significant further reductions by 2050, in particular due to the mainstream application after 2030 of carbon capture and storage technology – CCS – to industrial process emissions that cannot be reduced in other ways. As solutions are sector-specific, the Commission sees a need to develop specific Roadmaps in cooperation with the sectors concerned.

R&D, demonstration and early deployment of technologies, such as various forms of low carbon energy sources, carbon capture and storage, smart grids and hybrid and electric vehicle technology, are of paramount

importance to ensure their cost-effective and large-scale penetration later on. In addition, increasing resource efficiency through, for instance, waste recycling, better waste management and behavioural change, as well as enhancing the resilience of ecosystems, can play an important role. Also, continued effort to strengthen research on climate mitigation and adaptation technologies will be required.

Beyond the reductions in greenhouse gas emissions, which are the key benefits of the shift to the low carbon economy, this transition will bring a number of other essential benefits, such as new jobs, savings on fossil fuel imports, improvements in air quality and public health, increasing capital investments

The Commission invites the other European institutions, Member States, candidate countries as well as potential candidates, and stakeholders to take this Roadmap into account in the further development of EU, national and regional policies for achieving the low carbon economy by 2050. Internationally, the Commission will present the 2050 Energy Roadmap to its global partners in order to stimulate international negotiations working towards global action, and will foster cooperation with countries in the EU’s neighbourhood on measures to promote a resilient low carbon economy.

During its term of EU Presidency, Hungary is responsible for coordinating the adoption of a common EU position and common thinking in major strategic matters; and for representing the European Union at international negotiations. The Hungarian Presidency wants Europe to take on new dimensions in the field of energy policy, and to open the way to clean energy, which is affordable and available in the long run. Energy policy has to contribute to economic growth, the fight against climate change, and the reduction of dependence on outside energy resources. The most pressing task, is to create Europe’s internal energy market and reduce the fragmentation of Europe’s energy infrastructure.

An Energy Dialogue conference was held in Budapest on April 1, where Mechthild Wörzröder, European Commission Head of Energy Department announced that the European Commission will publish the 2050 Energy Road Map by autumn. The Hungarian Presidency is ambitious, to see the energy strategy and infrastructure objectives. The Energy Roadmap 2050, will be discussed

by an informal ministerial meeting in May, while the New EU Energy Savings Plan, can be adopted by the European Council's meeting in June. In order to prepare the legislative proposal on financing energy infrastructures, it needs to be submitted by the Commission, in the second half of 2011, Budapest will host a high-profile conference in the subject.

References

- [1] A Roadmap for moving to a competitive low carbon economy in 2050
http://ec.europa.eu/clima/documentation/roadmap/docs/com_2011_112_en.pdf
- [2] European Commission Energy http://ec.europa.eu/energy/publications/statistics/statistics_en.htm
- [3] Hungarian Presidency of the Council of the European Union official site
<http://www.eu2011.hu/news/new-chapter-european-energy-policy>
- [4] Climate change: Questions and Answers on a Roadmap for moving to a low carbon economy in 2050
<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/150&format=HTML&aged=0&language=EN&guiLanguage=en>
- [5] Climate change: Questions and Answers on the UN climate conference in Cancún
<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/627&format=HTML&aged=1&language=EN&guiLanguage=en>
- [6] Inhabitat.com <http://inhabitat.com/european-union-aims-to-cut-80-of-total-emissions-by-2050/>
- [7] Energy Policy Scenarios
[http://ec.europa.eu/energy/nuclear/forum/opportunities/doc/competitiveness/2009-03-27/wec---presentation_europe_regional\(enef\).pdf](http://ec.europa.eu/energy/nuclear/forum/opportunities/doc/competitiveness/2009-03-27/wec---presentation_europe_regional(enef).pdf) 3E

www.oras.com

®

oras

Cubista