

PRESS RELEASE

Landmark Energy Report Paves Way for Zero Carbon Power in Denmark and across the EU

More aggressive energy efficiency, build-out of the power grid, regionally integrated market operations, energy market reform, smart grids and a firm commitment to phase out high-carbon assets on a fixed timetable, are all urgently needed to enable Europe to achieve its economic, security and climate goals

Delay in acting on urgent priorities, and failure to better coordinate action across borders from the outset, will foreclose options, increase risks and dramatically raise the costs of achieving Europe's energy and climate objectives

Copenhagen, May 20, 2010 – *Roadmap 2050: a practical guide to a prosperous, low-carbon Europe* (www.roadmap2050.eu) was launched today in Denmark by the European Climate Foundation (ECF) at a conference at the Ministry of Foreign Affairs, attended by the Minister for Climate and Energy Lykke Friis.

The project finds that in a decarbonised power system, the future cost of electricity is comparable to the future cost of electricity under the current carbon-intensive infrastructure. Roadmap 2050 also shows that with the necessary investments in energy efficiency and Europe's power network infrastructure, a decarbonised power sector using available technologies can provide the same high level of reliability that consumers enjoy today, in all low/zero carbon pathways.

Jules Kortenhorst, CEO of the European Climate Foundation, said at the event: "Denmark has already shown significant leadership within the EU in respect of wind-generated power. Roadmap 2050 demonstrates how such a visionary policy positions the country well to benefit from the transition to low carbon prosperity. The build out of the interconnecting grid, which sits at the heart of the Roadmap project, will allow Denmark to sell its power to other countries, creating jobs and opportunities as well as stimulating further investment in renewable technologies."

The report was authored by the ECF with technical and economic analysis by Imperial College London, KEMA, Oxford Economics and McKinsey & Company and policy analysis by E3G and the Energy Research Centre of the Netherlands (ECN). AMO, a research and design studio within the Office for Metropolitan Architecture, contributed to the content development through the production of a graphic narrative which conceptualizes and visualizes the geographic, political, and cultural implications of the integrated, decarbonised European power sector.

Roadmap 2050 looks at the economic, service reliability, infrastructure, energy security and policy implications of the European power system in 2050 in four decarbonised scenarios. The pathways do not rely on imported electricity and are based on existing or late stage development technologies including renewables such as solar, wind, biomass, geothermal and also non-renewable low-carbon resources such as carbon capture and storage (CCS) and nuclear:

1. 40% renewables, with the remaining 60% supplied evenly between non-renewable low-carbon technologies.
2. 60% renewables, with the remaining 40% supplied evenly between non-renewable low-carbon technologies.
3. 80% renewables, with the remaining 20% supplied evenly between non-renewable low-carbon technologies.
4. The study has also assessed the technical and economic feasibility of a scenario with 100% renewable electricity, requiring no nuclear power and limiting CCS application to heavy industry, including solar power from North Africa and breakthroughs on enhanced geothermal power generation.

When the Roadmap 2050 project started, a number of widely shared assumptions dominated the debate on the future of the European power sector. These included assertions that high-renewable energy scenarios would be too unstable to provide sufficient reliability, that high-renewable scenarios would be much more costly, and that technology breakthroughs would be required to move Europe to a zero-carbon power sector. Roadmap 2050 has found all of these assertions to be incorrect.

With the exception of existing hydroelectric facilities, almost all of the power generation capacity required to supply Europe in 2050 will need to be built in the next 40 years. This is a major undertaking regardless of the energy mix, and would pose a massive challenge even in a high-carbon scenario.

The key finding of the Roadmap 2050 project is that the challenge is basically the same in either a high-carbon, low-carbon or zero-carbon energy scenario, in terms of overall cost to consumers and the European economy.

What does change significantly is the required level of investment early in the cycle. Capital expenditure on energy infrastructure and generation capacity will need to double in the next 15 years to deliver a zero-carbon power sector by 2050. But in that scenario, the overall energy bill for the economy will be heading downward by 2020, and the day-to-day running costs fall fast throughout the period.

As well as studying the technical requirements of the grid and power infrastructure and the economics of the various scenarios, the Roadmap 2050 project has also delivered an analysis of the policy requirements for decarbonisation of the power sector by 2050.

Action before 2015 is a prerequisite for decarbonisation by 2050. Immediate policy development and implementation should focus on:

- Energy Efficiency measures, creating cost savings and reducing demand.
- Investments in regional networks and local smart grids and coordination of power market operations among member states, maximizing the value of low-carbon investments and minimizing back-up supply and load-balancing requirements.
- Market reform to ensure an effective long term investment case for business.

Roadmap 2050 shows that existing policy frameworks can be adapted to support decarbonisation of the European power-sector, but that an holistic approach is needed, with rapid action at both regional and national level required.

The Roadmap 2050 project shows that the benefits of the low-carbon transition far outweigh the challenges and that a commitment now to a systemic low-carbon transformation of the energy sector is ultimately the winning economic strategy for competitiveness, jobs and low-carbon prosperity in Europe. Achieving at least 80% greenhouse gas reductions in 2050 based on zero carbon power generation in Europe is technically feasible and fully reliable, including pathways based on very high contributions from renewables, and makes compelling economic sense.

ENDS

Supportive quotes:

"Denmark must become independent from fossil fuels. But this vision does not mean acting alone or withdrawing into energy policy isolation. Roadmap 2050 demonstrates clearly that there are major benefits from constructing a common European energy system, where Northern Europe leads on wind power - and Southern Europe leads on solar power. In this way we ensure the best possible use of renewable energy, for the betterment of our climate and our energy security"

Lykke Friis, Denmark's Minister for Climate Change and Energy

"The Roadmap 2050 report clearly states that clean electricity is necessary and an important element in the decarbonisation of Europe. This will only be successful in the battle against climate change if built on strong political cooperation both in Europe and internationally. We will need all the low-emitting generation options available to achieve this target in due time and a well functioning ETS market will ensure that the decarbonisation is obtained at an acceptable cost for society. A well-developed European grid is needed to use generation resources in the best way possible."

Lars G. Josefsson - President Eurelectric

“In the wake of the Copenhagen climate conference, the international negotiations seem to be locked in a global prisoners’ dilemma. Building trust has repeatedly proven to be the only way out of those quagmires. The “Roadmap 2050” impressively illustrates an exemplary and attractive pathway for the European Union. By pioneering the sustainability transition in a crucial sector, Europe can not only help to overcome the international deadlock but also harness the great economic potential of a zero-carbon power supply.”

Professor Hans Joachim Schellnhuber CBE, Potsdam Institute for Climate Impact Research

For more information contact:

Tim Nuthall
ECF Energy Strategy Centre
Mobile: +32 478 98 74 79
Email: tim.nuthall@europeanclimate.org

See: www.roadmap2050.eu

Press details of other organisations involved in the report

Energy Centre of the Netherlands

Name: Ir J.R. (Remko) Ybema
Email: ybema@ecm.nl
Phone: +31 224 564428

McKinsey & Company

Name: John Cheetham
Email: John.Cheetham@mckinsey.com
Phone: +44 20 7961 5294

E3G

Name: Jesse Scott
Email: jesse.scott@e3g.org
Phone: +32 495 77 81 79

Office for Metropolitan Architecture

Name: Laura Baird
Email: LBaird@oma.com
Phone: +31 614 62 46 40

Imperial College London

Name: Goran Strbac
Email: g.strbac@imperial.ac.uk
Phone: +44 7973 65 89 76

Oxford Economics

Name: Marie Diron
Email: mdiron@oxfordeconomics.com
Phone: +44 207 803 1406

KEMA

Name: Rolf van Stenus
Email: rolf.vanstenus@kema.com
Phone: +31-26-356 2607