



Achieving global leadership in renewable energies

Brussels, 30 November 2016

Renewable electricity, cleaner heating and cooling, decarbonised transport, empowered consumers and at least 27% renewables in the EU will bring clean energy for all Europeans.

See also the [press release](#): Clean Energy for All Europeans - unlocking Europe's growth potential.

Why are renewables at the centre of this package?

The transformation of global power markets is ongoing. According to the International Energy Agency, renewable energy surpassed coal as main source of power capacity in 2015. In 2030, half of the EU's electricity generation will come from renewables. By 2050 our electricity should be completely carbon-free.

Renewables will play a major role in the transition to a clean energy system. Europe has set itself a target to collectively reach a share of at least 27% renewables in the final energy consumption by 2030. It has spearheaded global efforts to fight climate change, and has been leading global efforts with a commitment to cut emissions by at least 40% by 2030. It has successfully turned solar and onshore wind technologies from niche technologies into central players in the European power sector. This has also helped global access to cheaper and clean technology.

The renewable energy sector in Europe employed more than one million persons. Employment in wind energy alone has increased in the EU fivefold from 2005 to 2013, with total associated employment numbers of about 320,000 in 2014.

Growth in renewable energy is driven by the most innovative technologies that deliver substantial greenhouse gas savings. Global market projections for renewable energy solutions in line with the long term decarbonisation objectives have been estimated at about EUR 6,800 billion for the 2014-2035 period, with high growth potential especially outside Europe. In recent years, investments in renewable generation assets represented over 85% of generation investments, most of them at lower voltage levels, notably at the level of distribution grids.

How will the clean energy package boost renewables?

The Renewable Energy Directive, together with the proposals on the New Electricity Market Design and governance, will set a regulatory framework that leads to investor certainty and allows a level playing field for all technologies without jeopardising our climate and energy targets.

In order to better accommodate the rising share of renewables, wholesale markets have to further develop and in particular provide adequate rules allowing shorter term trading to reflect the necessities of variable generation. Renewables producers will be able to earn revenues from the market, including system service markets that are required to maintain grid stability and security. By introducing trading closer to the time of delivery well-integrated short-term electricity markets will also reward flexibility in the market both for generation, demand or storage.

Renewable energy will be increasingly market-based, untapped potential needs to be exploited, and certainty and visibility for investors ensured. New rules will allow renewable electricity generators to earn increasing shares of their revenues from the market.

The clean energy package will also guide the design for national support by setting out framework principles to facilitate a cost-effective, market-oriented and Europeanized approach. These principles include cross border opening of support schemes, non-retroactivity and long term visibility for the support.

Will this end priority of renewables in the networks?

On the contrary, the Commission's proposals will set a regulatory framework that allows a level playing field for all technologies without jeopardising our climate and energy targets. The new regulatory

framework will make sure that renewables can participate fully in the electricity market, but also that the market related provisions do not discriminate against renewables.

Priority dispatch will remain in place for existing renewable installations, small-scale renewable installation and, projects demonstrating innovative technologies. Other installations, independent from the technology applied, will be subject to non-discriminatory third-party access rules. In addition, curtailment of renewables should be done last.

How will the heating and cooling sector contribute?

Three out of four European homes are heated (or cooled) with fossil fuels. This corresponds to 68% of the EU's gas import, and is a sign of slow growth of clean energy in a sector which takes half of EU's energy needs.

In order to address these challenges, the Renewables Directive includes a number of options for Member States to increase their share of renewable energy in heating and cooling supply, by 1 percentage point per year until 2030.

Furthermore, it opens access rights to local district heating and cooling systems for producers of renewables heating and cooling and waste from industry and third parties acting on their behalf.

What's the role of the transport sector?

Transport in the EU still depends nearly entirely on fossil fuels. Oil supplies about 94% of all energy used to power European cars, trucks, ships and planes.

This package will accelerate the deployment of low-emission and renewable energy for transport, such as advanced biofuels and electricity. These fuels will need to produce at least 70% fewer greenhouse gas emissions compared to fossil fuel alternatives.

The development of advanced alternative fuels for transport will be encouraged through a blending mandate on fuel suppliers, while food-based biofuels will progressively reduce their contribution to the EU's renewables target.

As part of the Clean Energy for All Europeans Package the Commission also adopted a European Strategy on Cooperative Intelligent Transport Systems (C-ITS). It is an initiative towards cooperative, connected and automated mobility. The Strategy will be important in digitalising European transport and making it more efficient and safe.

How do you make sure that the renewables target is met in 2030?

The Commission proposes a robust Energy Union Governance to ensure that the Energy Union Strategy objectives across all five dimensions, and in particular the 2030 energy and climate targets, are met. A partnership is put in place with Member States to monitor the progress towards the 2030 target.

This governance system leads to a process of regular surveillance in which the Commission assesses the National Energy and Climate Plans to be developed by Member States. In case the Commission detects that there are gaps in particular as regards renewables and energy efficiency, it can propose the necessary measures to avoid and fill any such emerging gap.

How to make sure that bioenergy is developed in a sustainable way?

The Commission is committed to making sure the biomass used for energy production in the Union continues to be sustainable, e.g. that it delivers high greenhouse gas (GHG) savings compared to fossil fuels, that is produced in a way that does not cause deforestation or degradation of habitats or loss of biodiversity and that it is converted into energy with a high efficiency combined heat and power technologies (in order to promote efficient use of limited resources).

This is why the revised Renewable Energy Directive strengthens the existing EU criteria for bioenergy sustainability and extends them to cover also biomass and biogas for heat and power. More specifically, the Directive includes the following four new requirements for the post-2020 period:

- Advanced biofuels shall emit at least 70% fewer GHG emissions than fossil fuels;
- A new sustainability criterion on forest biomass used in energy, in order to mitigate the risk of overharvesting and ensure LULUCF accounting;
- A 80% GHG saving requirement for heat and power produced from biomass and biogas (applying to large scale installations with a fuel capacity equal or above 20 MW)

- A requirement that electricity from biomass is produced using highly efficient combined heat and power technology (*including inter alia* a grandfathering of existing installations).

What's the role of smart technologies in the clean energy transition?

Consumers are the drivers of energy transition. New technologies like smart grids, smart homes, increasingly competitive roof-top solar panels and battery storage solutions make it possible for energy consumers to become active players on the market.

The Renewables Directive will enable consumers to self-consume renewable energy without facing undue restrictions, and ensure that they are remunerated for the energy they sell into the grid.

What are the benefits for...

...consumers. Solar and wind technology prices have declined respectively by 80% and 30-40% between 2009 and 2015^[1]. Such cost-reduction is enabling consumers to increasingly produce their own renewable energy. With the revised Directive, **consumers will benefit from stronger rights** to:

- produce their own electricity, and feed any excess back to the grid;
- organise themselves into renewable energy communities to generate, consume, store and sell renewable energy;
- stop buying heat/cold from a district heating/cooling system if they can achieve significantly better energy performances themselves.

...environment. The revised Renewable Energy Directive **will help fighting climate change** by reducing greenhouse gas (GHG) emissions. Reaching at least 27% renewables will help reduce GHG emissions and meet our target of at least 40% GHG reduction by 2030. Together with energy efficiency, the EU Emission Trading Scheme (ETS) and other climate change mitigation policies, renewables might help the EU **reduce its carbon intensity by up to one third between 2020 and 2030**^[2].

...industry. The clearer legal framework provided by the new directive will remove uncertainties for investors, reduce administrative burdens and decrease costs. This will **bring benefits for both producers and investors**: renewable energy technology suppliers will keep a leadership role; costs of renewables supply chains will be lowered..

...jobs. The new directive focuses on creating the right conditions for renewables to thrive and **make the EU a flourishing market for clean energy**. The sector already **employs more than 1 million people** and accounts for 144 billion Euro every year.

Implementing our Energy Union policies, including the new renewable energy directive, the revised Energy Efficiency and Energy Performance of Building Directives, the revised ETS and New Market Design, could bring **up to 900 000 net additional jobs** in the EU economy by 2030 compared to the reference scenario^[3].

...energy security. In 2014, the deployment of renewable energy has cut around 20 billion Euro of fossil fuel imports^[4]. Thanks to renewables, **Europe could save around 60 billion Euro per year by 2030 in terms of avoided fossil fuel imports**. This is the equivalent to the current Gross Domestic Product (GDP) of Luxembourg.

^[1] IRENA (2016). The Power to Change: Solar and Wind Cost Reduction Potential to 2025.

^[2] Based on PRIMES EUCO30 scenario, carbon Intensity of GDP (t of CO₂/M€13)

^[3] Where 2030 targets would not be met

^[4] Compared with 2005 baseline, "Draft Renewable Energy Progress Report", Öko Institute [to be published]. draft preliminary figure

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