



BRIEFING

A new climate and energy package

Meeting Europe's economic, environmental and energy security goals

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Introduction

We welcome the European Commission's determination to develop a clear and ambitious post-2020 climate and energy package. Only through reaching the upper end of the 80-95% emission reduction target by 2050 will the EU have assumed its responsibility to avoid dangerous climate change. For this to be achieved, current climate and energy targets and policies will need to be strengthened, and a set of post-2020 policies at the EU and national level that are ambitious, coherent, and binding are needed. This includes targets for emission reductions, energy savings, renewable energy production and international climate finance.

This paper focuses on the elements that post-2020 objectives should include and addresses the key policy debates. A strong commitment from the EU and its Member States to decarbonise the European economy will contribute to policy goals in multiple areas: boosting competitiveness, completing the single European market, creating sustainable growth and jobs, enhancing resource efficiency, and contributing to the EU's objectives for peace building.

How can a post-2020 climate and energy framework help economic recovery and industrial competitiveness?

The EU needs robust climate and energy policies for beyond 2020 due to a range of market barriers and failures. These failures include a lack of access to capital for investing in existing technologies and for investing in research and development of new technologies. Knowledge barriers also exist in the lack of awareness amongst industries of the net benefits of installing technologies that help reduce carbon emissions and energy costs.

A well-designed post-2020 strategy can reduce these barriers and aid in boosting competitiveness. Europe currently spends over €400 billion per year on energy imports¹. The European Competitiveness Report 2012² by DG Enterprise and Industry found that the European Union relies on a higher share of foreign-sourced energy than other major economies, such as Japan and the United States. Moreover, fossil fuel prices are not only increasing, they are becoming more volatile. With ambitious climate and energy policies the EU can provide focus and cut fossil fuel dependency by almost 50% by 2030³.

The European Competitiveness Report 2012 concludes that global competition and the cross-border integration of production chains calls for improved energy efficiency and offer new business and energy-saving opportunities. Moreover, it recommends that in order to remain competitive, EU

1 International Energy Agency (2011), World Energy Outlook

2 European Competitiveness Report (2012), Reaping the benefits of globalisation.

http://ec.europa.eu/enterprise/policies/industrial-competitiveness/competitiveness-analysis/european-competitiveness-report/index_en.htm

3 DLR (2012), Energy Revolution EU27, commissioned by Greenpeace and the European Renewable Energy Council



firms need to focus on “exploiting the business opportunities offered by global environmental and societal goals and challenges”.

By committing to ambitious targets for greenhouse gas reductions, energy savings and renewable energy, the EU will reassure investors and boost demand for industrial products. For example, the refurbishment of buildings and upgrade of electricity grid infrastructure will require large amounts of steel, cement, and glass - all products from sectors which are currently struggling with overcapacity and lack of demand.

In terms of employment, clean energy and energy savings can also deliver. By 2010 the EU’s renewable energy industry employed more than 1.1 million people⁴ and could represent as many as 2.8 million jobs in 2020, rising to 3.4 million in 2030⁵. The EU is expected to create over 400 000 net new jobs if it meets the 20% by 2020 energy savings target⁶.

Finally, as the latest Global Risks report of the World Economic Forum underlines, economic recovery will not be possible without tackling the climate crisis⁷.

Why should the EU move on climate and energy if the rest of the world delays?

The recent GLOBE Climate Legislation Study shows that it is a myth that the rest of the world is not moving. 32 out of 33 major economies have progressed or are progressing with climate policies⁸, and more than 100 countries have announced that they will take action within the UNFCCC framework. The Climate Action Tracker⁹ rates the EU’s current UNFCCC emission reduction pledge as ‘inadequate’, and ranks it lower than Mexico, Brazil, South Korea, India, South Africa, Indonesia, Norway, and Japan. The EU had already reached a 19.7% cut by 2010¹⁰. Many countries would therefore turn the question around and ask, why does the EU feel incapable of moving further?

Meanwhile the climate crisis worsens: we need to be ‘shocked into action’, writes the President of the World Bank. His organisation has concluded that the world is on track to a ‘4 degree warmer world’¹¹, with ‘devastating’ consequences. There is neither time nor justification to delay while lamenting the alleged inaction of other nations.

4 EurObserv'ER (2012), The State of Renewable Energies in Europe, www.euroobserve-er.org

5 Ragwitz et al (2009), EmployRES: the impact of renewable energy policy on economic growth and employment in the EU, Fraunhofer ISI et al. Report for the European Commission.
http://ec.europa.eu/energy/renewables/studies/doc/renewables/2009_employ_res_report.pdf

6 European Commission, EDD Impact assessment (2011)
http://ec.europa.eu/energy/efficiency/eed/doc/2011_directive/sec_2011_0779_impact_assessment.pdf

7 World Economic Forum (2013), Global Risks Report 2013. <http://www.weforum.org/reports/global-risks-2013-eighth-edition>

8 Globe (2012), Global climate legislation study (in cooperation with the Grantham Research Institute). See <http://www.globeinternational.org/index.php/legislation-policy/studies/climate>

9 Climate Action Tracker (Ecofys, PIK, Climate Analytics): <http://climateactiontracker.org/countries.html>

10 European Commission (2012), Progress towards achieving the Kyoto objectives. See: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SWD:2012:0353:FIN:EN:PDF>

11 World Bank (2012), Turn down the Heat, Why a 4 degree warmer world must be avoided
http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf



Furthermore, advancing energy savings and renewables in order to reduce emissions in the EU is a 'no regrets' policy¹². What Europe will regret is a failure to invest in the clean economy as the EU's economic competitors are catching up. China plans to invest \$372 billion into energy conservation projects and anti-pollution measures over the between 2012 and 2015¹³. In August 2012, the Obama administration issued new rules that require automakers to nearly double the average fuel economy of new cars and trucks by 2025¹⁴. Moreover, China, South-Korea, Australia and other major economies are embarking on programmes for emissions trading.

Energy price rises in Europe are primarily due to fossil fuels. In the UK, up to 90% of price rises since 2004 are unrelated to renewable energy, and mostly the result of increases in gas prices¹⁵. Only a third of German energy price hikes have been due to renewables support since 2000, and the burden falls heaviest on consumers, not industry. 1000 industrial players who use 19% of Germany's energy benefit from exemptions, meaning that they only pay 0.3% of the support for renewable energy, raising prices for non-industrial consumers¹⁶.

Renewables are expected to be cheaper on average than new coal and gas plants by 2030¹⁷. The mechanisms to support renewable energy should be transparent and adapted to decreasing technology costs. They should be made more market-responsive, while acknowledging new and maturing technologies will continue to require support. However, we must not overlook that fossil fuels (and nuclear energy) have enjoyed decades of subsidies that continue today¹⁸. Addressing that distortion should also be a top priority.

According to the European Commission's Energy Roadmap 2050, energy system prices in future will be similar across a range of baseline and decarbonisation scenarios. In other words, we can choose to invest in a decarbonised system and free Europe from fossil fuel import dependency and the devastating impacts of fossil fuel use¹⁹. Or we can continue exporting capital, and remain at the mercy of price shocks, energy supply insecurity, related health impacts and climate change.

Why is a package of binding targets needed?

According to the Commission's Energy Roadmap 2050 analysis, higher energy savings and an increased share of renewable energies are preconditions for delivering the EU's long-term emission reduction objectives. The International Energy Agency has clearly stated that "carbon pricing needs

12 European Commission (2011), Energy roadmap 2050. See

http://ec.europa.eu/energy/energy2020/roadmap/index_en.htm

13 China to spend \$372 billion on cutting energy use, pollution. Reuters, 22 August 2012,

<http://www.reuters.com/article/2012/08/22/us-china-energy-idUSBRE87L01920120822>

14 Obama unveils tighter fuel efficiency standards, New York Times, 29 August 2012.

<http://www.nytimes.com/2012/08/29/business/energy-environment/obama-unveils-tighter-fuel-efficiency-standards.html>

15 Price rises due to non-renewables/climate factors were 90% for consumers, 85% for industry and 66% for commercial impacts of meeting carbon budgets http://hmccc.s3.amazonaws.com/ENERGYbill12/1672_CCC_Energy-Bills_bookmarked.pdf

16 WWF (2012), Mythen und Fakten http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF_Mythen_Fakten_Energiewende_WEB.pdf

17 DLR, Fraunhofer IWES, IFNE (2012) Langfristszenarien und Strategien für den Ausbau der erneuerbaren Energien in Deutschland bei Berücksichtigung der Entwicklung in Europa und global. http://www.erneuerbare-energien.de/fileadmin/ee-import/files/pdfs/allgemein/application/pdf/leitstudie2011_bf.pdf

¹⁸ OECD calls for better alignment of energy policy, public finances and environmental goals

<http://www.oecd.org/env/oecdcallsforbetteralignmentofenergypolicypublicfinancesandenvironmentalgoals.htm>

19 European electricity systems heavily reliant on coal, as in Poland, cost more in external impacts than the price of the electricity it generates –those health and environmental costs are hidden, borne by society at large



to be flanked by supplementary policies to fully realise its least cost potential”²⁰. Thus a comprehensive package of binding targets will be more effective and cheaper than an approach that is either non-binding or reduced to a single target.

Setting a single greenhouse gas target would result in an incentive to continue investing in fossil fuels-based generation capacity at the expense of renewables. This would put the EU at risk of locking itself in to a high carbon economy-infrastructure, as about 40% of the EU’s energy infrastructure needs to be replaced within this decade. And it would make the EU rely on the future contribution of not-yet-commercially proven carbon capture and storage (CCS) technology for power production²¹.

Binding targets provide certainty to the relevant industrial sectors and give clarity about the long-term decarbonisation of the EU economy. They help concentrate minds and resources on devising policies and solutions to deliver top-level objectives (for instance feed in tariffs for renewables, or third party financing for energy savings).

At the same time, targets make it possible to measure progress, and to take corrective measures if needed. By increasing investment security, targets help lower capital costs by reducing perceived investor risk. And they allow profiting from economies of scale that accelerate the cost reduction of energy technologies. We can draw clear conclusions from the 2020 climate and energy package: the EU is on track to achieving its two binding targets – greenhouse gas emissions and renewables. But it is not on track to achieving the voluntary 20% energy savings target. Targets may be only the first step to meeting the EU’s climate and energy objectives – but they are an essential one.

How will we pay for investments?

The clean economy has not been immune to the economic crisis but it has performed better than other sectors. 9,616 MW of wind power capacity (worth some €12.6 billion) was installed in the EU during 2011, following 9,648 MW installed in 2010²². The Carbon Trust’s analysis found that businesses that invest in renewable energy could make average returns of 11-12%²³. Munich Re, the world’s biggest re-insurer, plans to increase its own investments in renewable energy operations to about 2.5 billion euros (\$3.6 billion) in renewable energy assets over the next five years²⁴.

The great majority of investment will be private, but public finance is important as a catalyst. The 20% climate commitment in the multiannual financial framework and specific budget lines in Cohesion policy, Horizon 2020 and elsewhere have the potential to significantly support investment. The European Investment Bank is the world’s largest public lending institution. Its energy portfolio is growing, and the current review of its lending policy should end support for coal and gas, freeing up billions of euros for investment in clean technology.

20 International Energy Agency (2011), Summing up the parts

http://www.iea.org/publications/freepublications/publication/Summing_Up.pdf

21 The need for a 2030 binding renewable energy target (2012), Climate Action Network- Europe

<http://caneurope.org/policywork/issues/renewables/453-2030-renewable-energy-target>

22 Wind in power, European statistic 2011, EWEA

http://www.ewea.org/fileadmin/ewea_documents/documents/publications/statistics/Stats_2011.pdf

23 Carbon Trust Press release (2011) <http://www.carbontrust.co.uk/news/news/press-centre/2011/pages/investing-renewable-energy-returns.aspx>

24 Bloomberg article (2011) <http://www.bloomberg.com/news/2011-06-23/munich-re-plans-to-invest-in-wind-solar-parks-to-boost-returns.html>



A consistent and ambitious climate and energy policy has a high monetary value and increases the availability of private sources of finance. Binding targets and support schemes for renewables can, by providing investment security and reducing risks, reduce financing costs by up to 50%²⁵. In Germany, the security provided by feed-in tariffs has convinced private citizens and cooperatives to finance over half of the installed renewable energy capacity²⁶. Mandatory post-2020 targets for energy savings, renewables and greenhouse gas emissions would help to show businesses and investors that the direction of the transformation of Europe's energy system and economy is not going to change. This increased security reduces the need for public support.

Third party financing from private sources is also gaining ground in relation to energy efficiency. The principle is that an energy service company will measure a business's energy use. It then signs a deal to reduce – at its own expense – monthly energy bills by fitting smarter heating and lighting systems, or by installing better equipment. The business gains from cheaper energy bills and / or increased efficiency, and the investor uses some of the money saved on the business's bills to cover its costs and pay profits over a medium-term contract period. This has proven very successful in countries like Denmark, the UK and also the US.

Moreover, post-2020 targets can help to restore the effectiveness of the EU's emissions reduction policies. For example, higher revenues from the emissions trading scheme can be mobilised by the EU and its Member States to support green taxation reforms and investments in renewable energy, energy savings and industrial innovation. Up to half of this revenue should also be used to support the Green Climate Fund as a way to ensure the EU fulfils its continued commitment to adequately support climate action in poor countries post-2020.

Moreover, post-2020 targets can help to restore the effectiveness of the EU's emissions reduction policies. For example, higher revenues from the emissions trading scheme can be mobilised by the EU and its Member States to support green taxation reforms and investments in renewable energy, energy savings, and industrial innovation and to deliver on international climate finance obligations. Revenues for the latter should increasingly be used to support the Green Climate Fund as a way to ensure the EU fulfills its continued commitment to adequately support climate action in poor countries post-2020.

The demonstration and deployment of innovative, clean and efficient production technologies in heavy industry sectors, such as in the steel, cement and paper sectors, require significant upfront investment. Access to capital is often a barrier for investing in cleaner industrial technologies. One possibility is to complement post-2020 targets with a fund to help leverage investments, replenished by a share of the auctioning revenues from the post-2020 EU's emission trading scheme (ETS).

Crucially, the EU's energy network requires modernisation regardless of other considerations. But we need to make the right choices about our energy system and support energy savings and renewables. Otherwise the EU risks missing its greenhouse gas reduction objectives. Nuclear power and carbon capture and storage (CCS), which are billed as viable alternative decarbonisation technologies to renewables and energy savings, are experiencing crippling delays and cost

25 Ecofys, Interaction between RES support schemes and the internal electricity market (2012)

<http://www.europarl.europa.eu/document/activities/cont/201211/20121109ATT55209/20121109ATT55209EN.pdf>

26 Trend Research (2011) Marktakteure Erneuerbare Energie Anlagen in der Stromerzeugung.

http://www.kni.de/media/pdf/Marktakteure_Erneuerbare_Energie_Anlagen_in_der_Stromerzeugung_2011.pdf.pdf



overruns. Two nuclear plants are currently under construction in the EU: Olkiluoto in Finland and Flamanville in France. Both are five years behind schedule and billions of euros over budget²⁷.

How to bring member states on board with us and create political will?

Last year, 26 EU member states invited the European Commission to present climate and energy policies for the period up to 2030. To affirm their support for post-2020 action, the European Commission must urgently start building the case for mid-term climate and energy measures, including ambitious targets and robust supporting policies. The Commission should in particular assess the socio-economic opportunities and risks related to the post-2020 policies in the areas of health, competitiveness, innovation, fuel import and employment effects, and make sure that these aspects are clearly presented to member states alongside proposals for a post-2020 framework.

A better understanding of the benefits is required. Reducing energy demand and switching to renewables lowers emissions and is a boon for energy security, and creates business opportunities and new jobs. Research group Ecofys estimates that effective energy savings policies alone could lead to annual *net* savings of €200 billion per year by 2020²⁸. Similar or higher annual savings can be expected by 2030, provided effective policies are put in place. The result would be: lower energy bills and increased competitiveness – precisely the benefits that member states are calling for the EU to deliver.

Finance and investment issues must be assessed upfront. This is particularly relevant for member states and regions with a high potential to save energy and increase clean energy capacity, but with a lower capacity to invest. New and innovative EU investment support mechanisms for such regions, in particular in Central and Eastern Europe, must be explored.

How do we determine the level of post-2020 targets? What further modelling or analysis is needed?

The EU's post-2020 greenhouse gas emissions reduction target must be coherent, with the principle objective of reducing emissions by 80-95% by 2050. It must also be in line with the EU's 'fair share' of a global emission scenario consistent with keeping any global temperature increase to below 2°C. Moreover, the surplus of carbon emission allowances accumulating under the ETS by 2020 must be taken into account, because a major volume of banked allowances could undermine the effectiveness of the ETS.

The post-2020 greenhouse gas reduction target would determine the overall level of ambition needed for the energy efficiency and renewable energy targets. To ensure policy coherence, it is crucial that the interaction of the three targets be taken into consideration from the outset (in contrast to the three 2020 targets).

The energy efficiency and renewable energy targets must be based on a scenario that combines high efficiency, assessed using bottom-up savings potentials (this would ensure the cheapest

27 The Independent, <http://www.independent.co.uk/news/uk/politics/government-to-rip-up-rulebook-and-subsidise-new-nuclear-plants-8219870.html>

28 Ecofys estimate €200bn annual net savings by 2020, assuming the EU's 20% by 2020 energy savings target is met. See Ecofys (2012), *Saving Energy: brining down Europe's energy prices*, page 11, http://www.ecofys.com/files/files/ecofys_can_foe_2012_saving_energy.pdf



possible energy prices), and a high share of renewable energy (thus ensuring increased resilience of European industry to fossil fuel price volatility). Despite its obvious benefits, such a scenario was missing from the Commission's Energy Roadmap 2050.

It is just as important that the Commission does not base its post-2020 policy solely on the modelling exercises carried out in its Low Carbon Roadmap 2050 and Energy Roadmap 2050, as these contain significant flaws and a lack of ambition. The Low Carbon Roadmap 2050 only aimed to achieve emission reductions of 80% domestically by 2050, instead of the 95% reduction required. The Energy Roadmap 2050 contains a number of incorrect assumptions, including overestimations of renewable costs (e.g. projected solar costs in 2025 have already been achieved) and unrealistic cost projections for CCS and nuclear (nuclear power is assumed to become cheaper, despite all historical precedent).

In determining the level of ambition of the targets, the Commission should also look at external reports, such as the recent Fraunhofer Institute study (commissioned by the German government) which estimates the EU's cost effective energy savings potential at close to 50% below 2005 levels by 2030²⁹. This is over *double* the level of ambition included in the European Commission's Energy Roadmap 2050. The Fraunhofer study estimates that this could reduce emissions in the EU's transport, industry, tertiary and household sectors by 52% by 2030³⁰. This is the kind of action the EU needs in order to address climate change seriously.

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Climate Action Network (CAN) Europe is Europe's largest coalition working on climate and energy issues. With over 120 member organisations in more than 25 European countries, CAN-Europe works to prevent dangerous climate change and promote sustainable energy and environment policy in Europe.

²⁹ Fraunhofer ISI, 'Concrete Paths of the European Union to the 2°C Scenario: Achieving the Climate Protection Targets of the EU by 2050 through Structural Change, Energy Savings and Energy Efficiency Technologies', table on page 206

³⁰ Ibid., table on page 209