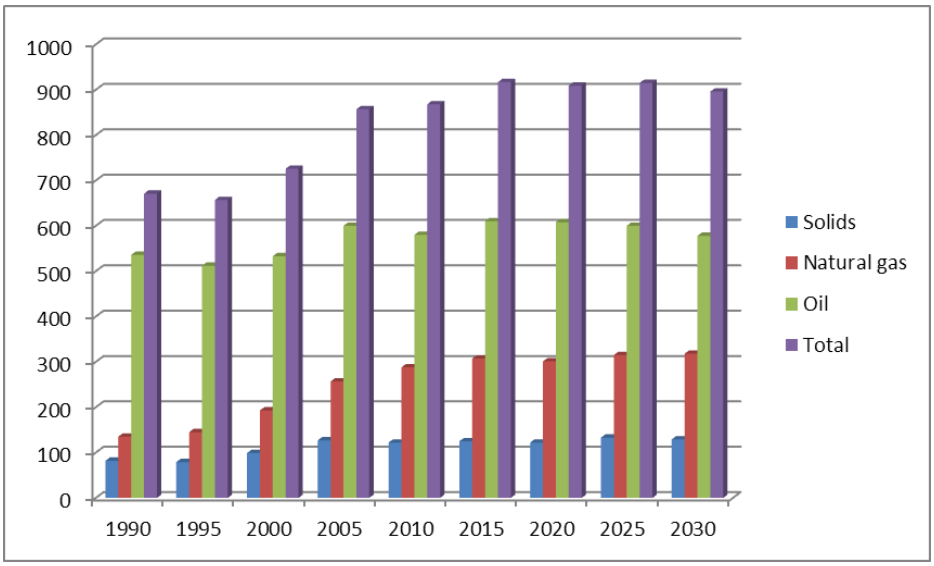
BRIEFING PAPER

JANUARY 2013

Re-Energising Europe

The case for post-2020 renewable energy targets & support

Given the current economic turbulence in the EU, policy makers are understandably focused on the need to ensure that European businesses remain globally competitive. Since 1990 the EU has become increasingly exposed to the structurally rising cost of energy[1], and the related drag on competitiveness, due to a growing dependence on energy imports[2]. However, the adoption of the "20-20-20" targets and measures on energy efficiency, renewable energy, and greenhouse gas cuts[3] are expected to first stabilise, and then reduce fossil fuel imports to the EU.



Fossil fuel imports to the EU by fuel and year, in Mtoe[4]

This trend will continue and accelerate, saving the Union hundreds of billions of euros a year, if domestic sources of energy are maximised. To meet decarbonisation targets, these sources must be renewable.

---

1 European Commission, European Competitiveness Report 2012; Reaping the benefits of globalization, http://ec.europa.eu/enterprise/policies/industrial-competitiveness/competitiveness-analysis/european-competitiveness-report/files/ecr2012_full_en.pdf

2 International Energy Agency, World Energy Outlook 2012

3 European Commission – Directorate General for Climate Action, The EU Climate & Energy Package, http://ec.europa.eu/clima/policies/package/index_en.htm

4 European Commission – Directorate General for Energy, Energy Trends 2030; Update 2009, http://ec.europa.eu/energy/observatory/trends_2030/doc/trends_to_2030_update_2009.pdf

Boosting European competitiveness

The argument is often made that investment in renewable energy will increase energy costs, further compromising the EU's competitiveness. In fact, investment in renewable energy, coupled with energy savings, is a smart choice, even in difficult economic times. Under the World Energy Outlook 2012's current policies scenario, Europe and the world face rising energy prices at least up to 2030. It is only with the implementation of concerted decarbonisation policies that prices start to come down[5].

The more renewable capacity there is in Europe, the less there is a need for increasingly expensive energy imports. Furthermore, support to renewables is affordable. Renewable energy support is not one of the structural causes of energy price rises recently identified by the European Commission[6]. Instead, increasing demand from developing countries, limited fossil fuels resources and overall increasing exploration costs were singled out. Indeed, In the UK, up to 90% of price rises since 2004 are unrelated to renewable energy support[7]. Only a third of German energy price increases have been due to support for renewables since 2000, and exemptions for the 1000 industrial players who use 19% of Germany's energy mean they only pay for 0.3% of renewable energy support[8].

Europe's declining availability of domestic fossil fuel resources, its level of technological advancement, and its head-start in renewable generation all suggest that, rather than trying to fight on the unwinnable front of energy prices, Europe's strategic advantage lies in energy efficiency and renewable energy reducing total energy costs. Just as the EU has maintained social principles and succeeded in the face of lower labour costs elsewhere, so it can maintain environmental principles and succeed without easy access to fossil fuels.

Any post 2020 EU-level climate and energy legislative framework must include ambitious targets and legal support for renewable energy, as part of a coherent and complementary group of laws that seek to significantly reduce energy-related emissions by 2030, while also ensuring security of supply and competitiveness. This briefing combines the ground-breaking report *Summing up the Parts; Combining Policy Instruments for Least-Cost Climate Mitigation Strategies* by the International Energy Agency[9], with recent research by WWF to make the case for the urgent delivery of adequate EU action in this area[10].

---

5 International Energy Agency, World Energy Outlook 2012

6 European Commission, European Competitiveness Report 2012; Reaping the benefits of globalization, http://ec.europa.eu/enterprise/policies/industrial-competitiveness/competitiveness-analysis/european-competitiveness-report/files/ecr2012_full_en.pdf

7 The Committee on Climate Change, Energy prices and bills – impacts of meeting carbon budgets, http://hmccc.s3.amazonaws.com/ENERGYbill12/1672_CCC_Energy-Bills_bookmarked.pdf

8 WWF Germany, Myths and Facts of the Energiewende, http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF_Mythen_Fakten_Energiewende_WEB.pdf

9 IEA, SUMMING UP THE PARTS, Combining Policy Instruments for Least-Cost Climate Mitigation Strategies, September 2011, INFORMATION PAPER (CHRISTINA HOOD)

10 The arguments made in this paper are summarised from recent WWF research, including the following reports: On Picking Winners: The need for targeted support for renewable energy, Imperial College London (lead author Rober Gross) October 2012, http://www.wwf.org.uk/wwf_articles.cfm?unewsid=6263, Re-energising Europe: Cutting energy related emissions the right way, WWF European Policy Office December 2012,

How should renewable energy be supported?

Given the above, how will the 'no-regrets' options of renewable energy and energy efficiency be best delivered? This paper confirms the IEA's clear statement that *"carbon pricing needs to be flanked by supplementary policies to fully realise its least cost potential"*, and that the two measures that should complement carbon pricing are:

1. *Cost effective energy efficiency policies;* and
2. *RD&D (research, development and demonstration) and technology deployment policies (which can include targets and support measures for renewables).*

WWF further supports that the IEA's view that this policy set would most cost effectively deliver a single overarching emissions target if each element was implemented as part of a coherent policy package.

The limitations of a 'carbon price only' approach:

In contrast to the benefits of a package approach, there are serious drawbacks to an EU ETS only approach.

Carbon pricing as the main energy decarbonisation tool is most attractive in a theoretical world where the perfect carbon price can be both judged and implemented. In reality this is extremely difficult to achieve, as both damage and abatement costs of climate change are extremely uncertain, given:

- uncertainty about possible climate feedbacks;
- uneven geographic and temporal distribution of impacts;
- varying costs of managing impacts across varied economies;
- potential non-linearities in the climate system's response to temperature rise;
- unknown potential of technological and behavioural changes to reduce costs.

The setting of a hypothetically optimal carbon price may be possible in energy systems models, where these uncertainties can be accounted for by subjective assumptions, but it is less likely to work in the real world.

Practical limitations of carbon pricing

Furthermore, even with a carbon price that advantages renewable energy, the historic structural support enjoyed by fossil fuelled power plants means investors may still choose to build these traditional generators instead[11]:

- Gas power stations have an inbuilt ability to 'hedge' against rising input costs by passing them on to consumers in the form of higher electricity prices;
- After years of subsidisation, there is an inbuilt path dependency towards fossil fuel investments, the cost of which has been reduced through policy certainty and support.
- The recent lack of political commitment in many countries leaves renewable investments facing significant risks that support will be insufficient or inconsistent.

---

http://www.wwf.eu/what_we_do/climate/publications_climate/?206942/WWF-report-Cutting-energy-related-emissions-the-right-way

11 Gross et al. Investment in electricity generation the role of costs, incentives and risks, , 2007

Real world success of targeted support

In contrast to the problems facing carbon pricing as a decarbonisation instrument, renewable energy technologies have consistently demonstrated the benefit of targeted support in accelerating their progress down the cost and learning curves. In the solar PV market, price reductions have averaged 22% per doubling of sales since 1979[12].

Furthermore, the 'proposition that mass deployment… should be driven by technology neutral carbon pricing…[13]' fails to understand that, since carbon prices only affect the marginal price of fuel and power, they will encourage fuel switching and efficiency before renewable deployment. Setting carbon prices high enough to drive investment in renewable energy is far more economically disruptive and less likely to be effective than targeted support for markets in emerging technologies, using measures which investors can have confidence in[14].

The urgent need for post 2020 climate and energy policy

Current EU policies will only deliver a 40% reduction in the EU's greenhouse gas emissions by 2050, far below the 80-95% decarbonisation target[15]. WWF's close analysis[16] of the Energy Roadmap 2050 reveals the degree of urgency with which further action must be taken.

1. Energy savings are *the* key enabler of energy sector decarbonisation, but this area of policy remains the weakest and least stable element energy policy:
   - The Energy Efficiency Directive failed to introduce the actions needed to achieve the 2020 target.
   - With the Directive due for review in 2014 and other energy savings measures yet to be agreed, the lack of stability remains.
   - A recovering global economy would put more pressure on energy consumption. Without binding targets any progress risks being lost.
2. A significant proportion of Europe's current energy generation capacity is due to close in the coming years, raising the question of what it will be replaced by:
   - All Roadmap scenarios envisage large scale fossil fuel plant building, but with no guarantee related emissions could be abated by CCS.
   - Rather than run the risks of non-delivery on CCS new renewable energy generation capacity should be prioritised over new fossil fuel plant.
3. The Roadmap scenarios envisage gas making up a stable *proportion* of the energy mix, but a falling *absolute amount* of power generation capacity.

---

12 Solar Europe Industry Initiative: Implementation Plan 2010-2012, EPIA, 2010

13 McLlveen, Cutting the cost of Cutting Carbon, in Greener, Cheaper, 2010

14 On Picking Winners: The need for targeted support for renewable energy, Imperial College London (lead author Rober Gross) October 2012 - http://www.wwf.org.uk/wwf_articles.cfm?unewsid=6263

15 European Commission – Directorate General for Energy, Energy Roadmap 2050, 2011

16 WWF European Policy Office and CE Delf, Re-Energising Europe: Cutting energy related emissions the right way, http://www.wwf.eu/what_we_do/climate/publications_climate/?206942/WWF-report-Cutting-energy-related-emissions-the-right-way

- A strong legislative signal is urgently needed to ensure that investors and national policy makers have a proper understanding of the expected future role of gas in the EU, and do not overinvest in gas assets.

4 Both the International Energy Agency[17] and the World Bank[18] have recently stated that without significant additional action the world will warm beyond the 2 degree maximum agreed by world leaders.
   - The Roadmap scenarios aiming for 80% emissions reductions cannot easily be scaled up later to 95% cuts (for e.g. - they are limited by availability of sustainable biomass.)
   - Instead, aiming for 95% cuts requires other approaches from the start (for e.g. earlier mass electrification of transport).

Where should the EU be in 2030?

Based on recent research by ECOFYS for WWF, by 2030, the EU could be:
- Using at least 38% less energy compared to business as usual projections;
- Generating more than 40% of its energy from renewable sources; and
- Cutting its energy related greenhouse emissions by at least 50% compared to 1990

Achieving such levels would put the EU on track to delivering a 100% renewably powered energy system by 2050 at the latest.

Conclusion

The EU needs comprehensive post-2020 climate and energy legislation that ensures the delivery of energy savings, renewable energy, and emissions reductions. A carbon price only approach would not be sufficient, since it is based on a theoretical view of neo-classical economics that fails to deliver the intended outcomes in real world settings. Renewable energy must be prioritised and supported beyond that which is currently envisaged if the EU is to minimise the risk of dangerous climate change because:

- Carbon pricing is only the most cost-optimised option if the price is set at the optimum level - something that is extremely different to achieve;
- Carbon pricing also fails to address other important concerns of the investment community, such as predictability;
- Targeted support is gaining a track record of success in real-world settings, but the EU ETS is not giving adequate investment signals for decarbonisation.
- WWF's research shows that much more ambitious levels of energy savings and renewable generation could be achieved than that envisioned by the Commission's Roadmap scenarios.

17 IEA promotion of the World Energy Outlook: "With current policies in place, global temperatures are set to increase 6 degrees Celsius… If as of 2017 there is not a start of a major wave of new and clean investments, the door to 2 degrees will be closed." http://www.iea.org/publications/worldenergyoutlook/pressmedia/quotes/7/

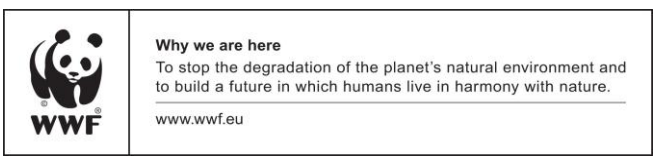
18 World Bank, Turn Down the Heat: why a 4 degree celsius warmer world must be avoided: http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf

For further information:

Jason Anderson
Head of Unit
Climate and Energy
WWF EPO
Email: janderson@wwf.eu
Mobile +32 474 83 76 03

Imke Lübbeke
Senior Policy Officer
Renewable Energy
WWF EPO
Email: ilubbeke@wwf.eu
Mobile +32 499 538 733

Adam White
Project Officer
Climate and Energy
WWF EPO
Email: awhite@wwf.eu
Mobile +32 491 56 34 16



EU Transparency Register Nr: 1414929419-24
Printed on recycled paper.