



CAN EUROPE'S position on: The Need for a 2030 Renewable Energy Binding Target

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This paper aims to explain to policy makers why a binding target for renewable energy sources (RES) for 2030- in conjunction with binding targets for greenhouse gas emissions and energy savings and with an EU-wide binding sustainability framework - is needed to unlock the full socio-economic, environmental and geopolitical benefits that RES can bring to Europe.

1. Introduction

Since the publication by the European Commission of the communication on *the roadmap for moving to a competitive low-carbon economy in 2050*¹ (March 2011), and subsequently the communication on the *Energy roadmap 2050*² (November 2011), there has been an increasing debate on which are the best policies to drive greenhouse gas reductions in the energy sector. The European Commission is currently contemplating four possibilities on how to reach deeper carbon reductions after 2020 in the most cost-effective way, as indicated in the impact assessment of the latest communication on a *Renewable Energy Strategy*³. All three options analysed in the impact assessment⁴ (besides the business as usual scenario) include a binding target for emission reductions after 2020. The first option relies uniquely on the EU's Emissions Trading Scheme to drive investments in low-carbon technologies. The second option is based on a continuation of the existing energy and climate policy framework, and thus includes national binding targets for renewable energy and an indicative (non-mandatory) target for energy usage and savings, with certain obligatory measures (as agreed recently in the new Energy Efficiency Directive). The third option proposes setting an indicative EU-wide target (so not for each Member State separately) for renewable energy, which could be strengthened by the introduction of harmonized RES support schemes across Europe.

For CAN-Europe, only the second option, with clear binding national 2030 targets for renewable energy (and similar national binding targets for energy efficiency), is acceptable as the way forward.

The following sections explain why a mandatory RES target with a strong sustainability framework, combined with obligatory targets for greenhouse gas emission reductions and energy efficiency, is the best option that the European Union can choose. This is the best choice if the EU aims to achieve a low-carbon economy and its 2050 climate and energy goals in a cost-effective and sustainable way.

1 [Roadmap for moving to a competitive low-carbon economy in 2050](#), European Commission, March 2011

2 [Communication "Energy Roadmap 2050" \[COM/2011/885\]](#) European Commission, November 2011

3 [Communication – Renewable energy: a major player in the European energy market \[COM/2012/271\]](#), European Commission, June 2012

4 [Impact assessment \[SWD/2012/149\]](#), European Commission, June 2012



2. Why renewable energy is crucial to achieving the necessary deep greenhouse gas emissions reductions

Renewable energy-based technologies are the only ones that can bring greenhouse gas emissions (GHG) from the power and heating sectors close to zero, and can do so in a relatively short timescale. Nuclear power, which also has a low carbon footprint⁵, has proven repeatedly in recent years to be a non-viable option. Constantly increasing construction costs, rising concerns about nuclear safety, low social acceptability and complex planning procedures mean that nuclear will not be able to meet new generation capacity needs within the necessary timeframe, nor will it be able to provide electricity at competitive costs⁶. Besides, there is still no solution for the nuclear waste problem.

Other energy sources like gas produce significantly lower greenhouse gas emissions than coal and thus are important for achieving reductions in the short term. However, investment in new gas generation capacity should be limited, since this energy source will, in the long term, lock Europe into an unacceptably-high carbon system, and in turn, prevent it from further reducing its carbon footprint and meeting the EC's decarbonisation roadmap. Therefore gas is not a long-term option for Europe. Postponing significant investments in renewables would merely put the EU at a competitive disadvantage and would accelerate the effects of climate change through unnecessarily high emissions. The same arguments apply to the possible use of carbon capture and storage technology (CCS). This technology has not yet been commercially proven and has not gained widespread social acceptance due to its potential environmental risks. The technology will likely face important delays in its implementation, and relying on it could be a significant setback in the decarbonisation of Europe's energy system. The EU would still face the same challenges in terms of competitiveness and devastating effects of increasing global temperatures.

3. Why a binding RES target is needed

3.1. Advantages of a binding RES target and a stable policy framework

The overall 20% RES share objective for the 27 EU member states by 2020, including the provisions and obligations introduced to system operators (e.g. priority dispatch) and regulators through the implementation of the RES directive⁷, have encouraged member states to introduce national support schemes for renewables, resulting in a number of important benefits:

⁵ CO₂ emissions of nuclear energy range between 2 and 288 g CO₂/kWh with average values around 60 g CO₂/kWh. The higher values related to the use of very low grade ore. In the long term, nuclear cannot be considered a low-carbon technology because the ore grade is expected to decrease due to the exploitation of uranium resources. [Energy Balance of Nuclear Power Generation](#), Okologie Institut and Austrian Energy Agency, 2011

⁶ Even before the Fukushima disaster in 2011, the price of nuclear was already at the level of 65€/MWh and increasing. [City group, 2009](#)

⁷ [Directive 2009/28/EC on the promotion of the use of energy from renewable sources, European Commission 2009](#)



- A binding target that provides long-term certainty to industry and investors to make the necessary level of investment in generation capacity as well as investments in transmission and distribution infrastructure. At the same time, it also provides long-term stability to energy regulators and system operators to plan investments in national and pan-European infrastructure and define adequate market rules for the internal energy market.
- Renewables have a net job creation effect compared to conventional energy sources⁸. RES promote local job creation along the whole length of the value chain in direct jobs, e.g. manufacturing of equipment and material, products and power plants, installation, operation and maintenance, sales, and through indirect jobs such as logistics, education, research, consultancy, administration, etc. For example, Renewable energies created over 1.1 million jobs in 2011 within the EU^{9,10}, up from 550,000 jobs in 2009¹¹. In 2011 several hundreds of thousands of jobs were also created outside of Europe due to the European RES market and support policies.
- A stable framework fosters technology innovation and gives European industry a competitive advantage in the global market, not only in the area of generation technologies, but also in energy system operation (e.g. smart grids, off-shore wind power and connections to the grid). Thanks to current support policies, the EU is the world leader in renewable energy technology, developing state-of-art technologies in all fields, demonstrating the feasibility and sustainability of both large scale and decentralised micro-generation. European companies have grown rapidly not only in European territories but in other key markets like the US¹² and China. In addition, non-European companies have also grown quickly (especially in China) because of the European market, thus increasing demand for European equipment, technologies and materials. In many cases, those foreign companies operate and produce in Europe, creating direct jobs and investments here. In 2010 the RES industry generated a turnover of approximately €127 billion¹³.
- Market volume, created through stable and long term policies, accelerates economies of scale and allows the different renewable energy technologies to reduce their generation costs and to reach market competitiveness with conventional energy sources faster.
- Renewables contribute to the diversification and security of Europe's energy supply. Since 2009, wind power and solar photovoltaics have been the leading technologies in terms of newly installed capacity in Europe¹⁴, followed by gas. Conversely, nuclear and coal power plants have suffered a trend of negative growth as a result of plants decommissioning (including 6.3GW of nuclear power capacity in Germany). The diversification of energy technologies is a key objective for Europe in order to secure its future energy supply and maintain its competitiveness.

⁸ [Renewable Energy Jobs, Working paper, table 3](#), IRENA, 2011

⁹ [Global status report 2012, REN21, pag.27](#)

¹⁰ 11th EurObserv'ER Report, pag. 172 <http://www.eurobserv-er.org/default.asp>

¹¹ EREC statistics, <http://www.erec.org/statistics/jobs.html>

¹² Iberdrola U.S. Planning to Spend \$6 Billion Expanding Wind Power by 2013, [Bloomberg 2010](#)

¹³ 11th EurObserv'ER Report, pag. 174

¹⁴ EWEA, EPIA, Bentek Energy PowerVision (formerly Platts), Eurostat, [Wind in power 2011, European statistics \(February 2012\)](#)



3.2. Disadvantages of relying solely on the emissions trading scheme (ETS)

- Risk of bias towards other technologies: In order to correctly define the quantity of allowances for the power sector under the ETS, a desired low-carbon threshold needs to be agreed. Without a RES target to guarantee a high proportion of zero-emission power generation, this “low-carbon threshold” could be fixed at a relatively high value (e.g. 200 or 300 g of CO₂/kWh). This would result in an incentive to continue investing in gas and nuclear-based generation capacity at the expense of renewables. This risks locking Europe in to a high carbon economy-infrastructure, relying on the future contribution of not-yet-proven CCS technology.
- The ETS does not consider that all energy technologies have different starting conditions¹⁵ and thus the concept of technology neutrality favour mature and conventional technologies that have long enjoyed favourable conditions.
- The ETS is failing to deliver any meaningful emissions cuts because of the economic downturn, the over allocation of permits (e.g., to sectors at potential risk of carbon leakage), the carry-over of permits from previous trading periods and other loopholes. Due to these loopholes, the ETS will fail to create a carbon price high enough to provide incentives to invest in low-carbon technologies. Other external factors, such as currently low coal prices (from the USA), combined with the low carbon price, are triggering higher carbon dioxide (CO₂) emissions because power producers are switching their generation mix from gas to coal¹⁶. The ETS is too sensitive to external factors and cannot alone be relied upon to deliver the needed CO₂ reduction emissions.
- Even if the carbon price is high enough to make renewables-based plants economically viable, carbon price uncertainty over time is very high and thus the system will fail to trigger investments in new and emerging generation technologies. For the same reason, there will be a lack of attractiveness for investors to fund the needed transmission and distribution infrastructure for a system that incorporates a large share of renewables. This infrastructure needs to be planned several years in advance and thus needs a stable policy framework.
- Even if investments in renewables are triggered through the ETS, only the most mature and competitive technologies will have a chance to be deployed (e.g., onshore wind, biomass and hydro). As experience has shown, the cost of renewable technologies (as with other energy technologies¹⁷) can be significantly reduced through a combination of research and market volume. If the ETS does not support the market introduction of uncompetitive technologies, it may take many years before these technologies become cost competitive with the most mature renewables, if ever.

¹⁵ Fossil fuels and nuclear have been able to develop under protected, monopolistic market structures and have benefitted from decades of government subsidies. For example, between 1970 and 2010, cumulative public subsidies for electricity technologies in Germany varied greatly. Coal received €222 billion, nuclear received €186 billion and renewables received €28 billion.¹⁵ These investments allow industries to create economies of scale and establish a competitive advantage. Moreover, these energy sources continue to benefit today from infrastructure that was built around their needs under monopolistic structures.
http://www.foes.de/pdf/2011_FOES_Vergleich_Foerderungen_lang.pdf

¹⁶ <http://www.bloomberg.com/news/2012-07-02/europe-burns-coal-fastest-since-2006-in-boost-for-u-s-energy.html>

¹⁷ In the beginning of the 1980s, with the oil crisis, USA was spending close to 10bn€/year in R&D for Nuclear, Europe above 5bn€. Today, the USA and EU combined spend less than 1.5bn€ per year on all forms of renewables. The European Commission, through the program Euratom, provides as much public financing for research into nuclear (only for safety) as for all other sources of energy and energy efficiency (through Framework Program 7). IEA database, <http://cordis.europa.eu/>



- Another important factor is that the ETS only covers the power market. Investment in renewables in the heating and cooling sectors, as well as in the transport sector (in total accounting for about 60% of renewables in 2020), will still need to be addressed through other mechanisms and policies in order to reach the necessary emission reductions.

4. Considerations for setting an efficient binding RES target

A number of elements need to be addressed when defining a policy framework for RES:

- A binding RES target should not be divided into sectorial targets. Member States should have the freedom to decide how to reach their national targets. It is especially important to avoid any specific target for transport as it creates demand for unsustainable biofuels, which can lead to increased emissions and negative social and environmental impacts in the EU and abroad.
- All forms of bioenergy should be subject to an EU-wide binding sustainability framework¹⁸ that ensures not only greenhouse gas emissions reduction (with full lifetime carbon accounting reflecting the upfront carbon debt of wood-based bioenergy and indirect land use change for land-based biofuels) but also addresses other environmental (e.g. loss of biodiversity) and social concerns. Support for first generation biofuels competing with crops for food and feed must be excluded. The contribution of bioenergy should be limited to sustainable levels, in order to provide a bigger incentive to other renewable technologies that have larger and more long-term potential and less negative impact on land and water use.
- The interaction between energy savings policies, the RES target and the number of carbon allowances in the ETS needs to be much more closely studied in order to define a robust, coherent and sound energy and climate framework, and to avoid the mistakes of the 2020 package. See the following section.
- European-level coordination of support schemes for renewables is helpful. However, the question of harmonizing such schemes should be addressed with great care. Certain aspects can usefully be harmonized in order to increase transparency, reduce administrative barriers, avoid stop-and-go policies, avoid windfall profits for industry, and allow for fair integration of RES into the single energy market. However, the scope and level of support should be left to national governments.
- Trading renewable energy within and between European Member States needs to be optimized. The trade rules should ensure transparency and should avoid any double counting of green electricity.
- Trade of renewable energy with third countries should only be supported in the long term, when renewables have been extensively developed within Europe. This is important in order to address the challenge of security of supply and to avoid long delays due to large infrastructure projects that do not depend solely on the EU's political and economic environment. Furthermore, trade projects with third countries will only divert efforts and resources from developing renewables within Europe.

¹⁸ [NGO briefing, Sustainability issues for solid biomass in electricity, heating and cooling](#), 2012, Birdlife, Greenpeace, EEB, ClientEarth, FERN.



5. A comprehensive climate and energy policy approach

In addition to a binding target for RES, CAN-Europe believes that a binding energy savings target should be set for 2030. In the same way that the Emissions Trading Scheme will not be sufficient to drive investments in RES, experience shows it will be equally insufficient to ensure investment in energy efficiency and savings measures.

The EU's indicative energy savings target for 2020 is demonstrably insufficient¹⁹ – yet (again according to EC) it must be met if the EU is to increase its 2020 GHG reductions target and get on a pathway toward its 2050 target. This argument is equally true for 2030.

It is now well understood that many non-price barriers (such as split incentives, low consumer awareness, lack of upfront finance and perceived hassle) stand in the way of energy efficiency investments, which even a very high carbon price will not be sufficient to overcome. Dedicated policy interventions are more likely to be of the level and quality needed to tap the full potential of energy efficiency if a binding target is in place (as is shown with the binding 2020 RES target – FITs, priority grid access, etc.).

Pre-defining an expected level of total energy consumption is crucial if the EU is to design a coherent 2030 framework for energy and emissions. Setting a target for lower energy consumption allows for better planning regarding infrastructure needs and lowers the cost of decarbonizing our energy system.

CAN-Europe will release a position paper with greater detail on this topic in the coming months.

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Climate Action Network (CAN) Europe is Europe's largest NGOs coalition working on climate and energy issues. With over 100 member organisations in 27 European countries, CAN-Europe works to prevent dangerous climate change and promote sustainable energy and environment policy in Europe.

¹⁹ [Energy Efficiency Directive. Impact assessment \[SEC/2011/779\]](#), 2011 European Commission