EC Green Paper- A 2030 framework for climate and energy policies

Inter-Environnement Wallonie's contribution

Executive summary

Climate change is already having serious economic, social and environmental consequences across the globe, with hunger and communicable diseases being greatly aggravated. Failure to act has cost the world economy 1.6% of global GDP - amounting to US$1.2 trillion in foregone prosperity each year, according to the Climate Vulnerable Forum.[1] Without urgent action, rapidly escalating temperatures and carbon-related pollution will double costs to 3.2% of world GDP by 2030. As the Commission's Communication on the 2015 international climate agreement states, "*Although the science of climate change is clear and the impacts are increasingly visible, actions to address climate change continue to fall far short of what is needed (…) Only by acting collectively, and with greater urgency and ambition, can we avoid the worst consequences of a rapidly warming planet.*"[2]

Specifically at a European level, the European Environment Agency has estimated that the minimum cost of not adapting to climate change will range from €100 billion a year in 2020 to €250 billion in 2050 for the EU.[3] As an example, direct economic losses due to flooding are also set to increase, with an annual cost of damage from river floods estimated at €20 billion by 2020 and €46 billion by 2050.

Yet, UNEP's recent report *Towards a Green Economy*[4] estimates that **tackling climate change through a transition to a low-carbon economy would contribute to identical, if not higher global economic growth rates than those forecasts under current economic models**. With a significant difference: it would not be exposed to the increasing risks inherent to the resource-depleting, high-carbon economy. Benefits will accrue to industrialised countries and regions which take early action for climate change mitigation, even if the rest of the world delays action.[5]

In 2009, the European Union acknowledged the urgency of acting through its 2020 climate and energy package, demonstrating the importance of effective policies and incentives in triggering the transition to a low-carbon economy. The Commission's 2050 low-carbon roadmap stressed that "*Without action the oil and gas import bill could double compared to today (…), the equivalent of 3% of today's GDP*," with, by then, more than 70% of the EU oil and gas being imported with rising

1 Climate Vulnerable Forum. Report: Climate crisis already causing unprecedented damage to world economy; human impacts on large scale: http://daraint.org/wp-content/uploads/2012/09/CVM_RELEASE_FINAL_ENGLISH.pdf

2 Consultative Communication, The 2015 International Climate Change Agreement: Shaping international climate policy beyond 2020, COM(2013) 167 final

3 Adaptation in Europe - Addressing risks and opportunities from climate change in the context of socio-economic developments**,** European Environmental Agency, 2013 http://www.eea.europa.eu/publications/adaptation-in-europe

4 United Nations Environment Program. Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication: http://www.unep.org/greeneconomy/greeneconomyreport/tabid/29846/default.aspx

5 Egenhofer, e.a. On the economics of decarbonization in an imperfect world. In: Climatic change (2012) 114:1-8.

prices. The roadmap also acknowledged the significant health and pollution control cost reductions associated with further action.

The 2020 targets have spurred Europe's renewable energy investments and thus helped create a global move towards renewable energy investments which are now outstripping investments into fossil fuel-based sources of energy. **It is Europe's energy regulations and standards, developed under the 2020 targets, which emerging economies are now emulating**. Without European targets, China would not have decided to implement to the same extent a Five-Year Economic Plan that is based on the core assumption of rapidly expanding global markets in clean energy. And Kenya and other developing countries would not be now introducing feed-in-tariffs for solar photovoltaics at very competitive levels.

European targets and policies have in fact shaped policies worldwide by providing political leadership, by helping new technologies go down the learning curve faster, and by helping other (in particular developing) countries capture their technical abatement potential more rapidly and efficiently thanks to the EU's capacity to develop and administer sophisticated carbon policies, as demonstrated by the impact the EU Emissions Trading System (ETS) has had on other carbon markets around the world.

Having said this, the current EU framework is not ambitious enough. **The 2020 targets are not in line with a cost-effective trajectory towards the upper end of the 80%-95% emission reduction target in 2050**, as indicated in the European Commission's Roadmap for moving to a competitive low carbon economy in 2050.[6]

In order to bridge the gap between the 2020 framework and the upper range of the 2050 decarbonisation objective, **the EU must design an ambitious, coherent and comprehensive post-2020 package to cost-effectively deliver on its long-term objectives while maintaining its global leadership on climate action and technology development**, as well as improving its current 2020 climate and energy targets and policies.

Such decisions need to be made by 2015 in order to give regulatory certainty to industries and investors to provide greater predictability on where investments are needed.

Globally, **Europe's climate and energy package is its strongest card in shaping global ambition to control climate risk**, bearing in mind that global decisions made in 2015 will determine whether 2°C is still within reach globally or whether Europe will be forced to live with increasingly unpredictable and costly variations in climate, and higher levels of instability and poverty in neighbouring regions. Europe, as all other big emitters, needs to step up and reduce much further its emissions, as the reality of climate change demands to do so. In the current economic context, we can find sustainable solutions for both the financial and the climate crises, as climate action offers opportunities to improve security of energy supply and to guarantee a competitive EU economy.

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6 European Commission, *Roadmap for moving to a competitive low carbon economy in 2050.* On: http://ec.europa.eu/clima/policies/roadmap/index_en.htm

QUESTIONS

1. Which lessons from the 2020 framework and the present state of the EU energy system are most important when designing policies for 2030?

The current framework is showing its positive effects not only on investments patters, but also on the removal of administrative, market economical barriers. These effects have been especially significant on the deployment of renewables energies. As the European Commission has already shown, the EU is making progress towards meeting the 2020 target of 20% renewable energy in gross final energy consumption. In 2010, the renewables share in the EU was 12.7% compared to 8.5% in 2005.[7] In the period 1995-2000 when there was no regulatory framework, the share of renewable energy grew by 1.9% a year. With legally binding national targets growth has increased to an average 6.3% per year.

In the case of energy efficiency, since the Energy Efficiency Directive has been recently introduced providing the needed comprehensive regulatory framework, it is too early to drawn conclusions. Although we must recognize that it is considerably weaker than the Commission originally intended. The quality of transposition and implementation by Member States has yet to be demonstrated. A preliminary analysis of the national energy efficiency targets reported so far by MS (required under the Energy Efficiency Directive) prepared by the Energy Savings Coalition estimates that a gap towards the 2020 target of 62 Mtoe will remain.[8] This is due to the fact that the target is indicative and not binding as in the case of renewables.

Overall, we can say that the current framework is an excellent example on showing how Europe can work with a common strategy on energy issues and decarbonization policies, aiming at reducing the impact of climate change, gaining energy independency, creating industrial growth and providing better environmental solutions to our energy demands.

However there are many lessons from the failures in the conception of the targets, and the policies designed to achieve them, which have had serious consequences. These mistakes include:

- **Lacking coherence between the three targets**: In particular the impact on emission reductions of the energy savings target was not factored in: if both the renewable energy target and the energy savings target are met, emissions will be reduced by 24%[9]. This mistake was in due part to the "20%-30%" conditionality of the 2020 target that the European Commission though to be a good strategy in at getting other developed countries to agree to higher goals. This strategy has proved unhelpful and ineffective though. Emissions reductions to be delivered by RES and energy savings by 2030 should be foreseen and factored in when setting a cap on the ETS after 2020, as well as on the overall Greenhouse gas target, so they can reinforce the effect of carbon pricing rather than depress it.

7 Renewable energy progress report, SWD(2013) 102 final, http://ec.europa.eu/energy/renewables/reports/doc/com_2013_0175_res_en.pdf

8 http://energycoalition.eu/indicative-national-energy-efficiency-targets-fall-short

9 *European Commission. Scenarios on energy efficiency and renewables. On:* http://ec.europa.eu/energy/observatory/trends_2030/doc/ee_and_res_scenarios.pdf

- **Weak ambition in the emission reduction target:** The 20% reduction target below 1990 levels falls far behind what the science says is necessary to curb dangerous global warming and is far from adequate considering the historical responsibility of developed nations. The current low target (20% by 2020) will lead to a very steep post-2020 trajectory in order to achieve a 95% emission reduction target by 2050. As a consequence of the emissions target being too low, the 'cap' of the Emissions Trading Scheme (ETS), combined with other design flaws, resulted in the carbon price being far too low to drive investment in low-carbon technologies. Other design flaws contributing to this have included excessive free allocation of emission allowances. The ETS could play a critical role in climate policy if well designed, with particular importance to building an international climate regime, but it cannot be expected to drive the EU's industrial and energy policy as a sole policy instrument. Structural reform of the current system is also urgently needed to ensure resilience to economic effects and interplay with other targets.

- **Greenhouse gas emissions targets for non-ETS sectors were too weak and not sufficiently integrated with other parts of the 2020 framework:** While most of the discussion on energy and climate policies so far has focused on the need to decarbonize the power system and large industry actors, thus the ETS sectors, the Effort Sharing Decision (ESD) is also in the need of structural reform. ESD sectors are responsible for more than a half of the EU's greenhouse gas emissions, with buildings and transport being the largest emitters. However, due to very weak ESD targets combined with the effects of the economic crisis, Member States will have to do very little or even nothing to meet their targets. There is therefore still huge untapped potential and non-ETS sectors can shoulder a higher proportion of reductions, at high levels of cost efficiency or cost savings, to support a more ambitious GHG target.

- **Not making the energy savings target legally binding**: In the 2020 package energy efficiency was treated as an afterthought and the 20% EU energy savings target for 2020 ended up being the only non-binding target, and the only one at risk of not being met. It would be repeating a mistake of the 2020 package to "wait to see how implementation of the EED goes" before determining suitable post-2020 ambition for energy savings and factoring this into the design of the targets. Giving energy savings a secondary role, despite its importance for the reduction of greenhouse gas emissions and the transformation of the energy system, undermines the coherence of the target design. Based on the experience that was gained during the last years and the broad recognition that energy savings is a prerequisite for achieving our climate and energy goals, this needs to change in view of a post 2020 framework.

- **Making the 2020 overall GHG target conditional to international agreements was a mistake that should not be made in the future:** Making Europe's ambition level conditional on other parts of the world moving in a predefined way has proven ineffective in adjusting Europe's effort, leading to uncertainty for business and unproductive internal debates. Instead, the overall GHG target needs to be set at the right level from the outset, so as to ensure that Europe does not exceed its carbon budget, and in order to trigger the required investments. Flexibility should be built not in the overall target but in the implementing measures that go with it.

- **Lack of sustainability guarantees:** Setting a sub-target for transport within the renewable energy target, without establishing sufficient environmental safeguards for the use of biofuels, and lacking social and environmental sustainability criteria for the use of bioenergy as a whole has undermined the environmental integrity of the target and even undermines its benefits in terms of emission reductions as clear accounting is still missing.

- **International carbon credit should no longer count towards the EU GHG emission reduction target:** In 2011 GHG emissions as covered by the climate and energy package were estimated at 18.6% below 1990 levels, or some 23% including offsets.[10] This means that the EU Member States and ETS covered installations could legally increase their emissions between 2011 and 2020, which is contrary to the EU's commitment under the Durban Platform of the UNFCCC to find additional emissions reductions prior to 2020, while agreeing a post-2020 deal.

- **Lack of binding commitments on the EU's share and delivery of international climate finance:** Despite repeated commitments by finance ministers to contribute the EU's fair share (30-40% of the global figure) to the Convention's commitment on providing financial resources to developing countries and in particular the Copenhagen promise to mobilise 100bn USD annually by 2020, nothing has been done so far to make sure climate finance will not fall off a cliff after the Fast Start Finance has ended in 2012.

Targets

2. Which targets for 2030 would be most effective in driving the objectives of climate and energy policy? At what level should they apply (EU, Member States, or sectoral), and to what extent should they be legally binding?

Inter-Environnement Wallonie calls upon the EU to recognize its historical responsibility and increase the ambition of its current and long-term climate and energy targets and policies. Only when achieving the upper end of the 80%-95% emission reduction target in 2050 (as indicated in the European Commission's *Roadmap for moving to a competitive low carbon economy in 2050)* will the EU be able to take its responsibility to avoid dangerous climate change.

For this to be achieved, political decisions need to be made now on post-2020 targets, policies, technologies and infrastructure which will put us on a cost-effective track to achieve the required deep cuts in greenhouse gas emissions. However, **in order to ensure ambition for 2030, current 2020 climate and energy targets and policies will need to be improved**. In particular the current 20% emission reduction target needs to be increased to a domestic emission reduction target of at least 30%, as part of an overall (domestic and non-domestic) emission reduction target of at least 40% by 2020. Furthermore binding national targets for energy savings need to be set, and measures taken to ensure the renewable energy targets are reached without compromising sustainable development objectives.

10 POINT CARBON, *EU EMISSIONS FELL MORE THAN EXPECTED IN 2011: DATA,* JANUARY 29, 2013

This urgent action to improve current policies needs to be complemented by agreement on a set of **2030 ambitious**, **coherent and binding EU-wide and national targets for emission reductions, energy savings, renewable energy production and international climate support**. Based on these targets, policies will have to be agreed.

This strategy is supported by organizations such as the International Energy Agency and the Imperial College London that has concluded that three legally binding targets will be more effective to deliver the outcomes required to reduce the risks of dangerous climate change than a system based on carbon price along. [11],[12]. CAN Europe has presented the arguments on the need of binding targets in various publications.[13] Some of the reasons are long-term investment certainty, long-term low carbon abatement potential cost, and removal of non-market barriers.

Finally it is essential that the current sectoral target for renewables in transport, which for all intents and purposes has been a target for unsustainable biofuels, is not superseded by a new one post-2020.

3. Have there been inconsistences in the current 2020 targets and if so how can the coherence of potential 2030 targets be better ensured?

A number of inconsistencies have become evident over the implementation of the package:

The 2020 emissions reduction target was set too low to reach a cost-efficient pathway to reducing emissions by at least the top-end of the 80-95% range of the 2050 target. This also resulted in the EU ETS cap being set too low, which, together with generous free allocation and the financial crisis, drove the carbon price too low to incentivise the development of renewable energy or energy saving measures.

Setting a 40% emissions reduction target for 2030, as suggested by the European Commission, will aggravate this situation even further for the remaining 20 years, as is only consistent with the lowest part of the 80-95% range set by 2050, disregarding the upper limit (-95%) which will be considered the more relevant target as global warming accelerates[14].

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[11] International Energy Agency, Summing up the parts: Combining Policy Instruments for Least-Cost Climate Mitigation Strategies, Christina Hood, 2011, http://www.iea.org/publications/freepublications/publication/Summing_Up.pdf

[12] Imperial College London, On picking winners: the need for targeted support for renewable energy, 2012, http://www.wwf.org.uk/wwf_articles.cfm?unewsid=6263

[13] CAN E position paper on a post-2020 Climate and Energy package, October 2012,
CAN E position paper on the need for a 2030 RES binding target, September 2012

[14] See for example: "The *challenge to keep global warming below 2 °C",* Peters et al, December 2012 http://www.nature.com/nclimate/journal/v3/n1/full/nclimate1783.html
"The *UNEP Emissions Gap Report 2012",* UNEP, November 2012 http://www.unep.org/publications/ebooks/emissionsgap2012/
"Turn Down the Heat – Why a *4 °C World Should be Avoided",* World Bank, November 2012 http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf

Given that the Commission Roadmaps are likely to provide the basis for the 2030 targets, it is important that the Commission use the new reference scenario to model higher levels of ambition which would result in 95% emission reductions by 2050. Greater reductions could be made by exploring a combination of high ambition efficiency and high ambition renewables policies – which the Energy Roadmap 2050 did not explore.

Moreover, energy savings have been undermined by a target that does not set a legally binding requirement. This should be corrected in the 2030 policy framework with energy savings treated as a crucial part of achieving the decarbonisation of our economy. The Green Paper implies that decisions on an energy savings target should wait until the review of the Energy Efficiency Directive in 2014. We believe this is the wrong approach. By contrast a robust 2030 target can set the direction for the implementation of the EED and help to ensure that the 2020 target is met.

In fact, too much focus was put on the emissions trading scheme and its ability to achieve both emissions savings as well as incentives to invest in renewables and energy savings. A good example is the NER 300 Programme, which co-funds renewables and carbon capture and storage projects with the proceeds from the sales of 300 million ETS allowances. The Commission originally estimated that the programme would raise around €4.5bn based on a carbon price of €15 per allowance. However, as the carbon price has slumped, a lot less is likely to be available, which has had an impact on the funding available for renewable energy projects.

4. Are targets for sub-sectors such as transport, agriculture, industry appropriate and, if so, which ones? For example, is a renewables target necessary for transport, given the targets for CO_2 reductions for passenger cars and light commercial vehicles?

Targets should be set first and foremost economy wide in order to ensure that they achieve the required emissions reductions while also maintaining flexibility for member states to decide how they want to achieve their national targets. This would allow more emissions cuts to happen in sectors where it is most cost-efficient within a given country.

However, it is clear that in some sectors specific policies can benefit from targets that help the EU meet its overall reduction targets. This is the case for example regarding the F-Gas Regulation or CO2 standards for cars and could long-term national targets for the renovation of buildings could make an important contribution towards decarbonisation by 2050.

Regarding the transport sector in particular, a specific volume target for renewables is no longer advisable. Instead, we favour the approach of the Fuel Quality Directive, provided that the greenhouse gas emissions reduction targets are linked to a more comprehensive system of sustainability safeguards including correct carbon accounting.

The amount of energy biomass can contribute to post-2020 targets should be capped and the level of the cap fixed on the basis of the EU's maximum sustainable potential of domestic biomass feedstock supply taking into consideration competing uses in other sectors. In addition, biomass that receives

support and subsidies under EU law should be subject to comprehensive accounting of greenhouse gas emissions and deliver real emission savings. This should include life cycle emissions from all aspects of biomass cultivation, processing, transport and combustion, as well as emissions from land management and direct or indirect land use change. It is imperative that this methodology take carbon debt into account, and the need to make real cuts in carbon emissions today and in coming decades.

Moreover, the current sustainability criteria for biofuels and bio-liquids are inadequate, and no sustainability criteria are applied to biomass for electricity and heating/cooling at all. It is therefore crucial to introduce robust criteria that cover environmental and social impacts in order to ensure that biomass use for energy does not reduce the "carbon sink" capacity of land and associated ecosystems, nor have unduly negative effects on biodiversity.

In the case of the building sector however, where a long-term strategy is required for tapping its full energy savings potential, long-term targets at the national level could be considered. This could help EU get on track to achieve the longer-term CO2 emissions reduction contribution from the buildings sector that the Commission identified in the Low-Carbon Economy Roadmap 2050 – a reduction of CO2 emissions of between 88 and 91% by 2050. The European Parliament has already supported this approach[15], calling for 80% energy demand reduction of the European building stock by 2050.

5. How can targets reflect better the economic viability and the changing degree of maturity of technologies in the 2030 framework?

There is well-funded evidence on the environmental, economical and social benefit of renewables and energy efficiency technologies. Their contribution to mitigate climate change is also well understood. There is no other type of energy technology than can help solve the climate change challenge and reduce the dependency on external energy sources and fossil fuels as efficiency and renewables technologies do. They present the largest potential to reduce overall energy cost, especially in the long term. Thus, there is no need to think that we will need to re-adjust the target levels for renewable and energy efficiency.

Moreover, the RES target should not be designed based on the maturity degree among renewable energy technologies. Setting simply an overall target for all forms of renewable energy sources would be sufficient and would allow Member state to design their energy mix independently through dedicated policies.

However, support mechanisms for market access, as well as public support for R&D and demonstration projects should aim to strike a balance among the deployment of different technologies, based primarily on the economical interests and resource potential of each Member State. Changes to support levels can help to maintain cost effectiveness as long as they are clearly signalled in advance on the basis of learning curve related cost reductions. For example, this could

15 2012/2103(INI) -14/03/2013 Text adopted by Parliament
http://www.europarl.europa.eu/oeil/popups/summary.do?id=1253916&t=d&l=en

mean that for a given increase in deployment of a technology, support levels are reduced by a given %.

6. How should progress be assessed for other aspects of EU energy policy, such as security of supply, which may not be captured by the headline targets?

Regarding power system reliability, security of supply is already economically measurable through *Loss of load Expectation (LOLE)* and *SAIDI (System Average Interruption Duration Index)* as the average duration of interruptions per consumers during the year. These indicators are monitored and discussed regularly among Transmission System Operators within ENTSO-E.

From the point of view of dependency of energy imports, the EU is set to substantially increase oil and gas imports by 2030, far higher than other regions in the world, with approximately 80% dependence towards the rest of the world for gas supply and 90% for oil supply, as indicated by the IEA's in their 2012 World Energy Outlook.[16]

Considering the instability and expected increase in oil prices, to which gas prices are linked, Europe's dependence will all have a severe impact on its energy bill, security of supply and overall competitiveness. A key lesson of the 2020 package to date, in light in particular of the economic downturn, is in fact the need to develop greater policy resilience, managing a range of structural risks around gas and oil price volatility and the future of demand.

In this light, energy savings, renewable energy, investments in infrastructure and innovation are 'no regrets' risk management options for all countries. Energy efficiency has strong EU-wide benefits in reducing price risk, increasing system stability, reducing supply-side market distortions from capacity markets and improving the likelihood that decarbonisation targets are delivered. Early deployment of renewable energy sources, independently of their level of maturity, minimises the risk of delivering decarbonisation objectives and enhances energy security.

Beside the already suggested targets for energy saving and renewable energy penetration, which would ensure the European Union decreasing significantly its energy dependency, other targets could be envisaged. One indicator of progress on increasing our security of supply could be the development of the EU's energy trade deficit, which currently stands at a staggering €423bn.

Other indicators could also include net employment in the energy sector, investments by sectors, health and pollution costs caused by the EU's energy system

We would like to underline that the health costs imposed on European citizens and governments by polluting energy production must be closely monitored and taking into account in climate and energy policy decision decisions. European citizens and governments are confronted with the pollution and health effects of fossil fuel combustion in the EU's energy system. The economic costs caused by the

16 http://www.worldenergyoutlook.org/

health impacts from coal in the EU's energy system are estimated at up to €42.8 billion per year, prompted mainly by respiratory and cardiovascular health problems[17].

Instruments

7. Are changes necessary to other policy instruments and how they interact with one another, including between the EU and national levels?

Direct and indirect fossil fuel subsidies must be phased out of on the EU and national level. European heat of states and energy ministers have repeatedly identified fossil fuels subsidies as the main market distortion to mitigate climate change in an effective way. All harmful subsidies should be eliminated before 2020. And the European Commission should assess and provide transparency on the level of the direct and indirect fossil fuel subsidies on a national level in the EU, assess its economic and environmental impacts, and subsequently propose phase out requirements.

Energy and carbon taxation are not adequately synchronized at an EU level, reducing options to capture cost-efficient greenhouse gas emission reductions and hampering the employment benefits of climate action. As long as adequate and harmonised carbon and energy pricing on a EU level is not established and EU climate and energy policies do not bring emissions and investments on track towards delivering 95% greenhouse emission reductions by 2050, additional national taxation policy measures are required. Otherwise, member states, and the EU as a whole, could be burdened with high costs due to a lock-in of high-carbon infrastructure in the next decades.

Most recently, the European Council of 22 May 2013 called for the revision of state aid rules "to allow for targeted interventions to facilitate energy and environmental investment" and for the phasing out of environmentally or economically harmful subsidies, including fossil fuels. This task should be completed without delay.

In addition to revision of state aid rules, the Commission should in its yearly Country Specific Recommendations as part of the European Semester process provide clear and concise recommendations as to how to shift the tax burden from labour to energy and other environmental taxes and put an end to the widespread use of energy tax exemptions.

Regarding the Ecodesign and Energy Labelling Directives, we suggest using the upcoming revisions to reinforce their consistency and maximise their complementary push and pull effects for market transformation. This could take the form of merging the two Directives. Ideally, this reinforced consistency could also encompass Ecolabel and Green Public Procurement (GPP) criteria with regard to energy efficiency. Ecolabel and GPP could act as benchmarks and reference levels for energy efficient appliances, but this is only possible provided that calculation methods are aligned amongst all the instruments (Ecodesign, Energy Label, GPP and Ecolabel).

At the moment, the way to calculate the energy efficiency criteria in Ecolabel and GPP are not the same as the way to calculate the energy efficiency requirements within Ecodesign and the energy class within Energy labelling. It would also be useful to align the life-cycle-based methodologies

[17] Health and Environment Alliance (2013), The unpaid health bill, how coal plants make us sick

between all these instruments, so that the preparatory studies and analyses could benefit all the instruments at the same time, avoiding double work in terms of preparation and creating a more coordinated update of the respective thresholds and requirements.

We also suggest implementing a market monitoring mechanism for products placed on the market using or related to energy. A market monitoring instrument enables information in real time on what products are placed on the market and what their energy efficiency level is. Market monitoring at EU and national levels could provide several benefits: helping member states assess the part of their national energy savings linked to more energy efficient appliances, avoiding overlaps between product policy and building policy and the EED obligations, thus preventing double counting the same savings (e.g. replacement of heaters in a public building could be counted several times)

Furthermore, a market monitoring instrument would enable adapting regulations on appliances with much more reactivity and relevance with regard to the market situation. Today, regulations are too often based on obsolete data or assumptions lacking in supporting evidence. A market monitoring mechanism could provide accurate and up-to-date data when needed. Australia, for example, has a product register that eases their assessment of savings linked to products, their market surveillance work and the update of implementing measures.

In the case of energy efficiency there are a lot of measures that have been put in place on which further action could be build on. For example, the new buildings are fairly well covered by the EPBD but current legislation does not sufficiently stimulate renovation of existing buildings. Therefore, further focused policies will probably be needed to improve the energy performance of existing buildings beyond minimum requirements. Strengthening the eco-design and the energy labelling policies will also be crucial for reaching our goal, not to mention for spurring innovation and mobilising industrial investments.

8. How should specific measures at the EU and national level best be defined to optimise cost-efficiency of meeting climate and energy objectives?

Targets should be supported by effective policies and measures that trigger actions with larger potentials, and that provide multiple benefits. In many cases, policies should not aim for the most cost effective measure (from a purely economic point of view), but rather for those that provide good business opportunity attacking investment, benefits larger groups (e.g. citizens and municipalities) to reduce possible public opposition (e.g. community Renewable energy power plants), and deal with external factors (e.g. reduction of air pollution, traffic congestion, etc.).

Long-term tiers with ambitious efficiency levels could be defined more systematically to create the visibility to trigger more innovations and quicker market transformation towards more efficient products. Germany has for example suggested a Top Performer approach that would grasp some of these opportunities. It is to be noticed that setting these ambitious long-term requirements is cost effective and does not harm EU competitiveness as the standards apply for all products entering the EU market (as concluded by several studies on the subject, Ecofys 2012, CSES 2012).

It should also be noted that the current way of consolidating the least life cycle cost (= the most economical options on a life cycle perspective) that limit the ambition of the improvements in Ecodesign may not be precise and fair, noticeably the learning curve and anticipatory effect by industry is neglected, leading to an overestimation of the real life-cycle costs in the future, and thus limiting artificially the possible ambition to set efficiency requirements

9. How can fragmentation of the internal energy market best be avoided particularly in relation to the need to encourage and mobilise investment?

Measures can include: to speed up the construction of interconnections among Member states and regions to ensure price coupling, common balancing and trading markets and avoid Member States to develop national capacity mechanisms, without considering the generation potential in other countries and regions. See 19 for more info.

10. Which measures could be envisaged to make further energy savings most cost-effectively?

A long-term planning approach for energy efficiency investments such as those in building renovations will help reduce the costs and avoid any lock in effects, that would leave much of the energy savings potential in buildings untapped. Furthermore, to really have a clear picture about the costs and benefits of these investments, their positive effects on other issues such as job creation, greenhouse gas emissions reductions and lower energy bills need also be taken into account. Therefore, it should be noted that cost effectiveness evaluations should not be limited only to short payback periods but especially for longer-term investments, they should also consider life cycle costs.

Even based on short payback periods assessments though, energy efficiency is cost effective, as many investments can pay themselves through energy cost savings. But there are still many non-price barriers (such as split incentives, low consumer awareness, lack of upfront finance and perceived hassle) that prevent energy efficiency investments from happening. A strong and effective regulatory framework, which includes an ambitious 2030 binding energy savings target followed by targeted policy interventions, will help overcome these barriers and realise the full energy savings potential. The 2030 binding target will also provide the needed policy certainty for investors, a link that is still missing from the policy framework for 2020.

Regarding the lack of upfront financing, barrier often identified by the governments, it is essential to find solutions for leveraging public funding with private capital. Financing institutions and tools at the European level can play a very important role in this and in helping turn energy efficiency opportunities into bankable projects. Aggregating small projects to make them sizeable, will also attract more investors. At the national level, governments need to establish financing facilities referred to in the new Energy Efficiency Directive, pooling together numerous sources of public finance (e.g. ETS revenues, funds flowing from the new energy company obligation schemes foreseen by the EED, structural funds, etc.) to scale up investments and finance effective and well designed energy efficiency projects with high upfront costs.

11. How can EU research and innovation policies best support the achievement of the 2030 framework?

- The European Commissions, through the Horizon 2020, should provided continued support to long-term and basic research, but increase its support to close-to-market solutions. Therefore, a larger part of available R&D money should be channelled through the SET-Plan industrial initiatives to leverage private investments.

- Additional effort should address the reduction of administrative burden for companies to apply and participate to EU research programs

- Increases awareness of EU programs at regional/local level to ensure SME participation.

- More focus on pan-EU oriented results and filling the gap of national action.

Besides these recommendations, the way available public resources are distributed do not reflect the long-term technical and economical potential of technologies, nor their contribution to mitigate climate change and reduce energy dependency. The EU and its Member States have struggled to fund public research in non-nuclear energy technologies for the past 50 years and this continues today. Nuclear energy received more than €12bn since 1984 from the EU's research Budget, while non-nuclear energy, including fossil fuels, CCS and all renewables, received €6,5bn[18].

For Ecodesign and Energy Labeling, there is a need for research on the driving forces for consumer choice on energy related goods. It is also necessary to determine testing methodologies reflecting more accurately the real usage patterns of products in order to be more precise in our estimation of savings and to orient industry innovation towards what would make more sense for consumers.

Competitiveness and security of supply

12. Which elements of the framework for climate and energy policies could be strengthened to better promote job creation, growth and competitiveness?

Regarding Jobs:

Energy savings and renewable energy have a high potential for both direct and indirect job creation across the whole value chain from manufacturing to installation, operation and maintenance. The European Commission estimates that energy efficiency and renewable energy sectors could create 5 million jobs by 2020[19]. It also notes that while increased investment in energy efficiency will boost job creation in the construction sector as well as in the manufacturing of construction materials, it will have only a limited impact on the reduction of jobs in the fossil fuels mining sectors.

[18] www.cordis.europa.eu

[19] European Commission Staff Working Document: Exploiting the Employment Potential of Green Growth. 18.4.2012.

Moreover, it was found that more ambitious renewables targets trigger investments in knowledge intensive generation technologies, which consequently provide skilled employment. This speaks for ambitious 2030 targets, which can create skilled domestic employment.

GROWTH AND COMPETITIVENESS:

In 2011, the European energy efficiency market accounted for the 40% of the global investments in this area[20]. Energy efficiency is key to driving competitiveness and reducing risks, in all sectors. Strong support to energy efficiency would lead to better resilience against market and technology risk as well as create expertise and jobs across the EU. Reduced European energy imports and displaced investment in new infrastructure and generation capacity would thus improve the situation of vulnerable consumers. Energy measures alone could lead to annual net savings of €200 billion per year by 2020 and €250 billion per year by 2030[21]. Together with the reduction of the energy costs, businesses that are engaged in energy efficiency investments can become more competitive by providing the products and the services needed to implement the energy policies and measures and by developing new ones. As the European Competitiveness 2012 report notes innovators related to new energy efficiency products seem to find their way easier to the market and setting aside other factors sell more new products than the conventional ones. A binding energy savings target for 2030 must be considered a priority for legislative action.

13. What evidence is there for carbon leakage under the current framework and can this be quantified? How could this problem be addressed in the 2030 framework?

The reality of competitiveness concerns must be discussed transparently. The EU cannot continue to force radical change in all sectors whilst shielding energy intensives. Their concerns on competitiveness have been the main hurdle to progress on climate and energy policy. There is however very little factual evidence substantiating the claims made by industrial companies. The recent CE Delft study *'Carbon leakage and the future of the EU ETS market'*[22] shows that applying more realistic assumptions than those used by the European Commission in 2009, would imply a drastic reduction of the number of sectors deemed at risk of carbon leakage would have fallen from the current 60% of sectors, representing 95% of industrial emissions, to a mere 33% of sectors, accounting for only 10% of emissions.

Furthermore, solutions do exist all along the supply chain to deliver radical improvements in carbon and resource productivity. It is therefore essential to conduct an open and transparent debate about the real extent of competitiveness concerns and to identify ways to incentivise innovation, substitution and rapid improvement. The global markets for resource efficient infrastructure and renewables are huge and innovative policy in this area could drive strong competitive advantage for EU firms in emerging markets.

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20 http://ec.europa.eu/commission_2010-2014/president/news/archives/2013/05/pdf/20130508energy_en.pdf

21 ECOFYS, http://www.ecofys.com/files/files/ecofys_can_foe_2012_saving_energy.pdf

22 Carbon leakage and the future of the EU ETS market, CE Delft, April 2013 www.cedelft.eu/art/uploads/CE_Delft_7917_Carbon_leakage_future_EU_ETS_market_Final.pdf?PHPSESSID=ef47474baf934b3dbcf1d6a0f56b3701

14. What are the specific drivers in observed trends in energy costs and to what extent can the EU influence them?

As an energy importer, the EU has limited influence on the prices of globally traded energy resources, particularly since demand flows increasingly switch towards emerging economies. Regarding its own conventional energy resources, shale gas is not likely to be the low cost energy source some are predicting, and has not created the booming industry that some have depicted in the US, with many wells in fact operating at a loss. It would therefore be risky and short sighted to focus on EU based shale gas resources in an effort to influence trends in energy costs, without referring to the highly environmental impacts linked to its exploration and extraction.

A recent report of CAN Europe and Friends of the Earth prepared by ECOFYS estimates the **net** benefits of energy savings in the EU at about **€200 billion per year** should the target for 2020 be met. It further finds that a reduction of energy use by 2030 – defined as roughly 35% savings below 2005 levels, would yield net benefits in the order of €250 billion per year. These cost savings are not only due to avoided energy use but also due to a multiplier effect energy savings have due to their downward effect on energy prices.

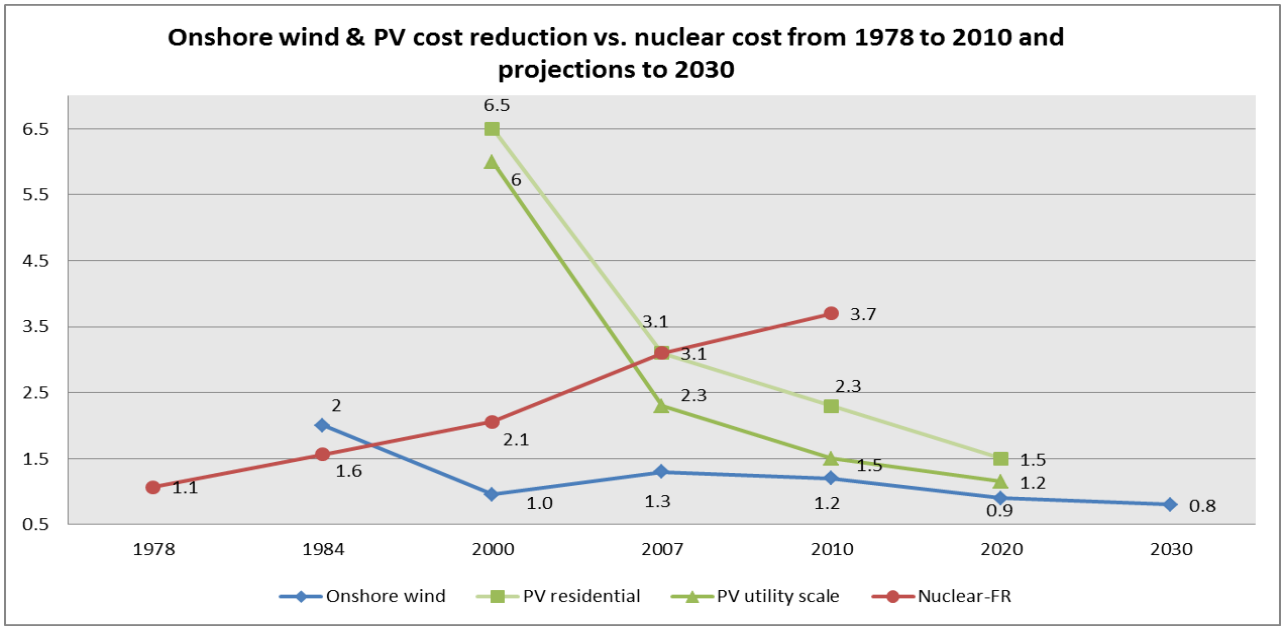
The European Commission's Information System for the SET-Plan led by the Joint Research Centre (SETIS)[23] has developed a model to calculate and project the levelised cost of electricity from varies energy technologies. It is clear that learning experience curves for renewables will continue to decrease generation costs, while cost from convetional technologies is only expected to remain at current levels, or even increase as demand for those fuel become higher.

Levelised cost of electricity (€/MWh)[24]			
Technology	2007	2020	2030
Wind Onshore	85	68	64
Wind Offshore	104	85	76
Coal	68	69	68
Gas	63	84	90
Nuclear	69	67	68

[23] http://setis.ec.europa.eu/

[24] https://odin.jrc.ec.europa.eu/SETIS/SETIS1.html# assessed the 18.02.2013, EWEA

Other analysis show similar results in terms of CAPEX, with renewables, especially photovoltaics experiencing tremendous cost decrease, a nuclear, for instance, poised to increase to unaffordable economic and environmental costs.



Sources: Bloomberg energy finance (wind 1984 CAPEX value), EWEA, EPIA, Cour des Comptes (Les coûts de la filière électronucléaire, Jan. 2012). The nuclear capital cost represents the cost of specific nuclear reactors in €m/MW: Fessenheim – 1978, Chooz 1 et 2 – 2000 and Flamanville – 2010

A European strategy to tackle these challenges most focus on the two policies that can best influence them: energy efficiency and the development of renewable energy. Implementing policies that reduce energy demand in Europe would reduce pressure on international fossil fuel prices, thereby also reducing European fossil fuel prices. The development of European renewable energy resources would also help reduce the level of fossil fuel imports. For example, generation from renewable energy installations in Ireland allowed the country to avoid €300 million of gas imports in 2012[25].

15. How should uncertainty about efforts and the level of commitments that other developed countries and economically important developing nations will make in the on-going international negotiations be taken into account?

The EU as has a historical responsibility for emissions and it cannot wait for developing countries to move first following the principle of common but differentiated responsibilities. Moreover, the Durban climate conference in 2011 launched the negotiations for a new international climate agreement that is to be concluded in 2015 and to apply to all parties, which already offers sufficient certainty of future action.

[25] Sustainable Energy Authority of Ireland (2013), Energy in Ireland 2012.

An agreement on an ambitious 2030 climate and energy policy domestically is the EU's best leverage to ensure a successful global agreement on climate change in 2015 with ambitious commitments also from its counterparts. All post-2020 targets will therefore need to reflect the EU's fair share of the global effort and to be agreed well in time for 2015.

Moreover, it is in Europe's best interest to act quickly and reap the early-mover advantages of advanced measures on energy saving and renewable technologies. Investing on indigenous, carbon free and resource finiteness renewable energy sources and energy efficiency technologies have many economic, social and environmental advantages that should not underestimated. Investing now in these solution will allow Europe not only to tackle the climate crisis but the financial one and to address the drastic need to increase employment in Europe. The European Commission's 2050 low-carbon roadmap shows that regardless of international action, decarbonisation of the EU's economy will not cost significantly more than not decarbonising the economy. Moreover, the current dependency on imports of increasingly costly fossil fuels is a major risk for the competitiveness of the EU's economy, which prompts climate action regardless the uncertainties about action by other nations.

Finally, Europe is by no means the only developed region to move forward with climate measures as nearly all G20 countries have taken on commitments to reduce emissions and other countries are investing in clean technologies.

Others are also moving, with China making renewable energy and energy savings key components of its 12th Five-Year Plan and setting up regional emissions trading schemes. UNEP's Global Trends in Renewable Energy Investment report in June 2012 showed that China was the leading investor in renewable energy, followed by the US, and noted weakening policy support for renewables in many developed countries, in Europe particularly due to austerity measures.

Stronger targets and supporting policies are required if the EU is to maintain its leadership in the clean technology race.

16. How to increase regulatory certainty for business while building in flexibility to adapt to changing circumstances (e.g. progress in international climate negotiations and changes in energy markets)?

As point out in question 5, there is well-funded evidence on the environmental, economical and social benefit of renewables and energy efficiency technologies. Their contribution to mitigate climate change is also well understood. There is no other type of energy technology than can help solve the climate change challenge and reduce the dependency on external energy sources and fossil fuels as energy efficiency and renewables technologies do. They present the largest potential to reduce overall energy cost, especially in the long term. Thus, there is no need to think that we will need to re-adjust the target levels for renewable and energy efficiency.

A swift agreement on 2030 targets will provide investors with the needed regulatory certainty. The GHG emission target, once decided, should be reviewed regularly, ensuring coherence with the

international process on climate negotiations, and the possibility to enhance well functioning international carbon markets. The target however should only be subject to ratcheted -up reviews.

17. How can the EU increase the innovation capacity of manufacturing industry? Is there a role for the revenues from the auctioning of allowances?

The auction revenues could play a role in supporting innovation of manufacturing industries to increase energy efficiency, reduce waste and integrate the use of renewable energies for their own energy production. However, the revenues should contribute to leverage private investments in many other important areas and existing frameworks, such as the Green Climate Fund of the UN, the European Energy Efficiency fund and the SET-Plan, among others. Therefore their role of manufacturing industry will be somehow limited.

18. How can the EU best exploit the development of indigenous conventional and unconventional energy sources within the EU to contribute to reduced energy prices and import dependency?

Europe needs to focus on tapping our truly indigenous energy resources: energy savings and renewable energy, which will increase energy productivity and will reduce our massive €406 bn energy trade deficit allowing this instead to be reinvested in Europe. There it will create new jobs and industrial leadership. Reducing energy consumption and shifting supply to renewable sources will also reduce greenhouse gas emissions in a safe and sustainable manner.

It is worth mentioning shale gas in this context, since there has been an increased attention by policy makers, based on the false promises of the price decrease revolution, following the case in the US. Shale gas is not the silver bullet for Europe's energy policy but rather a dangerous bet that could lock-in Europe further into a miserable situation. The boom in the US is already petering out, leaving the long-term problems in its wake. The geographical and demographical situation in Europe is even more unsuitable and we should not make the same mistakes here.

There are a number of arguments[26] that demonstrate that shale gas will not help Europe to decrease energy prices, nor to gain significant energy independency, without mentioning the indisputable environmental and heath risk associated, which include water reservoir pollution, methane emission and increase seismic activity:

- Shale gas production in Europe will not have an impact on European gas prices. To produce just 2% to 3% of the EU natural gas consumption from domestic shale gas would require drilling 500 to 800 new wells per year. Such a scenario would require a 5 to 10 fold increase of drilling activity.

26 David Hughes, Post-Carbon Institute, Werner Zittel, Energy Watch Group, Event : Beyond the hype- The economics of shale gas, Brussels, May 2013

http://www.foodandwaterwatch.org/pressreleases/wishful-thinking-debunking-the-myths-of-the-shale-gas-boom/

Even with such a dramatic increase of drilling, the potential quantities of produced shale gas are highly unlikely to have an impact on price levels.

- Shale gas production leads to a drilling treadmill: Shale gas wells decline much more rapidly than conventional gas wells (up to -70% of the original production level after 12 months). To compensate these steep decline curves of shale gas wells, 30% to 50% of production each year must be replaced with more drilling (at an estimated huge cost). Since Europe is relatively a highly populated area (compared to the US), public resistance will be encountered permanently and thus the production rates will not be kept up for long.

- Given the infancy of the shale gas industry in Europe, no significant shale gas production will become available before 2025 or even 2030. Fewer rigs, limited expertise and greater population density are structural factors that limit the growth of this industry in Europe.

- In terms of energy security, shale gas production in Europe will not solve the heavy reliance of the EU on imported gas. This is a key element, since even the most optimistic estimates do not foreseen to fulfill over a 10% of the gas demand in Europe with shale gas sources.

The political hype about shale gas, based on unrealistic assumptions, may delay investments into adequate technologies, such as renewables and energy efficiency which can tackle EU energy policy objectives much more effectively and enjoy wide support from European citizens.

19. How can the EU best improve security of energy supply internally by ensuring the full and effective functioning of the internal energy market (e.g. through the development of necessary interconnections), and externally by diversifying energy supply routes?

Internally, there are a number of issues that need attention to ensure a proper functioning of the internal energy market and thus an increase of the system reliability:

- Belgium and its neighbors are interconnected, and choices made by one country impact the others. Policies regarding power should therefore ideally be formulated at the CWE level, at minimum, and expanded to the rest of the EU as interconnections among the countries are further developed. Neighboring and interconnected countries would pool their reserve capacity and make it available to each other as needed.

- **The reinforcement of electricity interconnections across Member States and within national territories is fundamental**, not only at transmission level but at distribution. Larger network transfer capacity will ensure a smother and larger penetration of distributed energy sources, especially PV and wind Power.

- **The establishment of cross-border day ahead, intra- day and balancing markets** will contribute to increase the capacity credit (generation adequacy) of variable renewable energy sources. The market will benefits from increased geographical areas to make optimal use of renewable energy sources and to optimize the availability of flexible generation and demand. The establishment of such cross-border markets should be part of a more general effort to make the **system more flexible**. Flexibility is the comprehensive framework within

which the need for generation adequacy has to be assessed. Optimising the use of infrastructure, enlarging balancing areas ,investing in additional infrastructure where needed and introducing demand response measures are means to increase a system's flexibility. Flexibility can be brought to the system also thanks to an optimised form of self-consumption, storage and load management.[27] Fully tapping into the potential of these means is the way to maximise the adequacy return on each unit of generation already existing in the system.

- **The introduction and implementation of common methodologies to assess real transmission capacity, based on real-time data.**

Externally, diversifying energy suppliers is an important strategy to reduce dependency from few actors and can be beneficial to control energy prices.

However, the best solution to reduce dependency from external energy suppliers, thus increasing security of supply and being on control of energy cost, is by decreasing Europe's energy (especially fossil fuels) imports. Europe's current energy trade deficit of 423€ needs to be urgently reduced, releasing this money for investments that would tap our truly indigenous energy resources: energy savings and renewable energy.

The priority should be to re-investing on energy savings measures at the consumer level and increasing the efficiency in the transformation from primary to final energy (energy conversion factors).

This approach will result on the creation of new jobs and industrial leadership. Reducing energy consumption and shifting supply to renewable sources will also reduce greenhouse gas emissions in a safe and sustainable manner.

Capacity and distributional aspects

20. How should the new framework ensure an equitable distribution of effort among Member States? What concrete steps can be taken to reflect their different abilities to implement climate and energy measures?

We strongly believe that any future climate action should be distributed amongst the EU member states in an equitable way, so as to ensure that those with the biggest capacity to act carry the biggest part of the effort while enabling reductions to be made there were the biggest opportunities for immediate action are available. Therefore we advocate for a combination of measures that built on a distribution of efforts on a GDP per capita basis, while allowing for trading, so that countries with huge opportunities but low capacity to act can have an asset enabling them to invest in low-cost

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ACER, *Opinion on the European Ten-Year Network Development Plan 2012*, 2012, p. 10.

emission reductions. This is especially important for achieving cost-efficiency emission reduction and increase of renewable energy shares. In the case of energy saving, more information would be needed to understand the technical potentials per Member States, which is not always related to their investment capacity. And the European Commission should put forward a methodology that takes these elements into account.

21. What mechanisms can be envisaged to promote cooperation and a fair effort sharing between Member States whilst seeking the most cost-effective delivery of new climate and energy objectives?

- The current framework for cooperation on RES has not been very successful. We wait to see what the EC will present this year, together with the RES support guidelines.

- There should be a link between the allocation of the Cohesion funds and other European funding mechanisms to the effort sharing both for GHG abatement and energy savings in order to enable MS to tap into their potentials.

22. Are new financing instruments or arrangements required to support the new 2030 framework?

Europe doesn't necessarily need new financial instruments to ensure a transition to a low-carbon economy; at least not in the short-term. Many interesting programs have been designed to provide public funding in a well structure way, encouraging private participation. These include the European Investment Bank, the SET-Plan, the European Energy Efficiency Fund, the NER300, the risk-sharing facility, the Financial Framework for Research and development, and now Horizon 2020, among others. The instruments are there, the will and commitment from the industry too, but the funds are still very low.

The European union should re-evaluate the priorities given within the existing frameworks, to ensure renewable energies and energy efficiency are high in the agenda, at the expense of support to nuclear energy or subsidies to fossil fuels.[28]

28 The FP7 (2007-2013) EU budget for R&D on Energy, mainly for renewables, energy efficiency, storage and smart grids all together is lower than the amount dedicate to safety issue of nuclear energy in 2007-2011 within the Euratom program) http://cordis.europa.eu/fp7/home_en.html