Response to the European Commission's Green Paper Consultation on a 2020 Climate and Energy Framework

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Executive Summary

Deutscher Naturschutzring e.V. (DNR) (German League for Environment and Nature) is the umbrella organization of associations working in nature-, animal and environmental protection in Germany. DNR was established in 1950 with 15 initial associations. Today 96 associations are part of DNR representing over five million members.

DNR firmly believes that **ambitious and binding** targets for greenhouse gas reduction, renewable energy and energy savings will benefit the environment as well as Europe's citizens and economy. They are the only and the best way to prevent dangerous climate change, to raise energy security, to reduce costs for energy imports, and to create jobs.

However, **renewable energies** and **energy savings** must be in the core of Europe's strategy, as a greenhouse gas target alone will not set the right incentives to transform Europe's energy system and will not be able to tackle the range of ecological and social problems arising from Europe's production and wastage of energy.

New scientific evidence shows that high ambition is not only needed, but also feasible to overcome these challenges. DNR believes that Europe needs to reduce its **domestic** greenhouse gas emissions by 55 or even 60 % by 2030 and raise renewable energies to 45 %. As for energy savings the Fraunhofer report even demonstrates overall saving potentials for Europe of 50 % in primary and 40 % in final energy by 2030, 90 % of the measures being cost-efficient.

In the following, DNR would like to support and highlight CAN Europe's contribution to the consultation.

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 patterns, but also on the removal of administrative, market and economical barriers. These effects have been especially significant on the deployment of renewables energies, where the 2020 target is expected to be met. In 2010, the renewables share in the EU was 12.7% compared to 8.5% in 2005.[1] 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, the Energy Efficiency Directive has been recently introduced but we must recognize that the adopted Directive 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 by Member States estimates that a gap towards the 2020 target of 62 Mtoe will remain.[2]

Overall, we can say that the current framework is an excellent example for showing how Europe can work with a common strategy on energy issues and decarbonisation policies, aiming at reducing the impact of climate change, gaining energy independence, 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%[3].
- **Weak ambition in the emission reduction target and ETS**: The current low target will lead to a very steep post-2020 trajectory in order to achieve the 2050 emission reduction target. 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. Climate Action Network Europe had developed a number of recommendations, presented to the European Commission during an open consultation[4]. Some of the needed measures include the increase of the annual linear reduction factor to 2.6%, the permanent cancellation of 2.2 billion allowances and a review of the quality criteria for offset credits.

  1. 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 (the ETS sectors), the Effort Sharing Decision (ESD) is also in the need of structural reform. ESD sectors are responsible for more than

1 Renewable energy progress report, European Commission SWD(2013) 102 final,
2 Indicative national energy efficiency targets fall short, The Coalition for Energy savings, May 2013
3 Scenarios on energy efficiency and renewables, European Commission 2006
4 CAN Europe's contribution to the European Commission's public consultation on options to strengthen the EU Emissions Trading System, February 2013

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 impact of the economic crisis, Member States will have to do very little or even nothing to meet their targets.

2. **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 a mistake to "wait to see how implementation of the EED goes" before determining the post-2020 ambition for energy savings. 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.

3. **Making the 2020 overall GHG target conditional to international agreements was a mistake that should not be made in the future:** This strategy proved 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 18.3% below 1990 levels, or some 25% including offsets.[5] This means that the EU Member States and ETS covered installations could legally increase their emissions between 2012 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 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?

We call 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 will the EU be able to take its responsibility to avoid dangerous climate change.

5 *See both:* *Europe risks going backwards on climate change unless emissions targets are increased,* Sandbag Web-blog, June 2013 and ANNUAL EUROPEAN UNION GREENHOUSE GAS INVENTORY 1990-2011 AND INVENTORY REPORT, EUROPEAN ENVIRONMENTAL AGENCY 2013

In order to ensure ambition for the post-2020 policy framework that puts Europe on track to the 2050 target, 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.

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.

The three-target strategy is supported by organizations such as the International Energy Agency 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 alone. [6]. CAN Europe has presented the arguments on the need of binding targets in various publications.[7] Some of the reasons behind this are long-term investment certainty, long-term low carbon abatement potential cost, and removal of non-market barriers.

An emissions reduction target of 40% by 2030, as suggested by the European Commission in the Green paper will not allow the EU to reach the 95% target in 2050 which we believes is a minimum necessity, also from an equity perspective; and in order to keep its promise of keeping the door open to limiting temperature rise to 1.5C°, a substantial higher target will be necessary.

Furthermore, looking at the state of current emissions, as well as the pathway that the European Commission is proposing in its low-carbon roadmap (the post-2030 pathway), adopting a 40% target would be a substantial deviation from this pathway. There is no reason for the EU to assume a different pathway for the period between 2015 and 2030 than for the period before or after this period. Applying the low-carbon roadmap pathway from 2010 onwards would lead to emission reductions beyond 55% by 2030.

Also a 40% emission reduction target would be a substantial deviation from current emission trajectories (from 2005 till 2011). If emissions would be reduced at the same pace as in the period 2005-2010, total emission would be almost 55% below 1990 levels.

When compared to the current 20% target for 2020, adopting a 40% target may sound ambitious, but that is neglecting the reality that the EU actually already achieved an 18.3% emission reduction by the end of 2011 and is estimated to have reduced its CO2 emissions by another 2.1% in 2012. As Commissioner Hedegaard has recognised after the Climate conference in Doha, the EU is very likely going to reduce its emissions further during the coming years. It is therefore time for the EU to bring its domestic emission reduction target for 2020 to 30% and subsequently adopt a much higher number for 2030 than the proposed 40%.

In the power sector the roll-out of a mix of technologies such as renewables, nuclear and gas-based generation could be enough to bring the necessary emissions reduction in line with the suggested 40% target. This strategy however would put Europe in a difficult situation when trying to go beyond those emission reduction efforts, because renewables and energy efficiency, the only carbon-free technologies, will not have been developed at the levels necessary to reach the 2050 objective in a cost-effective fashion. As a consequence of

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6 *Summing up the parts: Combining Policy Instruments for Least-Cost Climate Mitigation Strategies,* Christina Hood, International Energy Agency, 2011

7 See both: *A post-2020 Climate and Energy package*, Climate Action Network Europe, October 2012; *The need for a 2030 RES binding target,* Climate Action Network Europe, September 2012

maintaining a good share of thermal-based power plants until 2030, the needed infrastructure for bringing in line those renewable energy technologies beyond that period will also be missing. We need to set higher objectives in 2030 which force the EU to focus and deploy in the short-term the technologies that present the higher potential on carbon emissions abatement, but also because they present the higher potential for generation cost reduction.

Scenarios developed by the German Space Institute and Ecofys for Greenpeace and for WWF respectively[8], have indicated the potential in the EU for deep emission reductions through substantial efforts to support the further development of renewable energy and energy savings. These scenarios show that a combination of energy savings and renewables have the potential to reduce CO2 emissions from energy use in the EU by more than 55% by 2030. And there is more carbon abatement potential by addressing the remaining use of fossil fuels with a well-functioning EU emissions trading scheme (high-efficient gas plants, combined heat and power). For the non-ETS sector, national and EU (carbon taxation) measures can provide a direct incentive for emission reductions. Moreover, specific sectoral policies (car standards, sustainable agriculture programmes, forest protection) can enable non-ETS emission reductions.

In summary, DNR believes that Europe needs to reduce its **domestic** greenhouse gas emissions by 55 or even 60 % by 2030 and raise renewable energies to 45 %. As for energy savings the Fraunhofer report even demonstrates overall saving potentials for Europe of 50 % in primary and 40 % in final energy by 2030, 90 % of the measures being cost-efficient.

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

Even with the current low GHG target and the oversupply of emission allowances in the ETS, there is no inconsistency between the current policies composing the 2020 package. The deployment of renewables and the ETS policies are mutually reinforcing, as originally designed. The crisis and the unsustainable use of international carbon credits are undermining the carbon price, and not renewables deployment, as suggested by some stakeholders.

Renewable electricity development in 2012 was slightly higher than foreseen (1.74% above trajectory) but this represents only about 39 Mt in additional avoided/reduced emissions. Compared with a 2,000 Mt surplus, it is clear that RES are not a relevant factor behind the low carbon price.

A similar approach should hence be taken to 2030, setting 3 targets supporting each other. The GHG target should be defined ambitiously enough to take the emissions reductions of the separate 2030 renewable energy and efficiency targets into account and provide additional incentives for emissions reductions beyond efficiency and renewable energy. In that way the three targets would work in a coherent and concerted way, underpinning and mutually supportive. To ensure a stable investor framework an (automatic) ETS cap adjustment could be introduced to guarantee the health of the carbon price to respond to a fall in demand for EUAs.

If only a GHG target was set, national renewable energy targets and efficiency plans would interfere with the ETS/carbon price because the equivalent in emissions reductions may not be properly forecasted and thus not factored in. Setting targets for renewable energy and energy efficiency are therefore necessary to avoid undesirable effects.

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8 See both: *Energy R[evolution] scenario for EU-27*, Greenpeace, 2012 and *Renewable energy: a 2030 scenario for the EU*, Ecofys 2013

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?

Sub-sectoral targets are not necessary nor are recommended under the renewable energy or energy savings targets. Member States should have the freedom to decide how to reach their national targets. However, we do acknowledge that a number of the policies set in place to achieve the targets would have specific targets, such as the cars emissions standard, the building renovation policies or the f-gas regulation.

It is especially important to avoid any specific target for transport within an overall renewables target, as it creates demand for unsustainable biofuels, which can lead to increased emissions and negative social and environmental impacts in the EU and abroad. In parallel, the EU should adopt regulations to control both fossil and renewable fuel production such that the energy demand in transport is met by truly sustainable, low-carbon energy. New targets for the Fuels Quality Directive should be set for 2030 to ensure the continued reduction of the lifecycle greenhouse gas intensity of transport fuel.

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 benefits 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.

Setting 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 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?

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 in their 2012 World Energy Outlook.[9]

Considering the instability and expected increase in oil prices, to which gas prices are linked, Europe's dependence will have a severe impact on its energy bill, security of supply and overall competitiveness. A key lesson of the 2020 package to date, in particular in light 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.

9 World Energy Outlook, International Energy Agency, 2012

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. An additional indicator to measure progress on security of supply could be done through the setting of a 2030 indicative target, defining the minimum share of the energy mix (% of overall primary energy demand) that would need to be provided by locally produced energy sources.

Other indicators could also include net employment in the energy sector, investments by sectors, and 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 taken into account in climate and energy policy decisions. The economic costs caused by the 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[10].

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 at EU and national level. European Heads of State and Government and energy ministers have repeatedly identified fossil fuel 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.

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 opportunities, benefit larger groups (e.g. citizens and municipalities), 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.).

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, new buildings are fairly well covered by

10 *The unpaid health bill, how coal plants make us sick,* Health and Environment Alliance, 2013

the Energy Performance of Buildings Directive (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 eco-design and energy labelling policies will also be crucial for reaching our goals, not to mention for spurring innovation and mobilising industrial investments.

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: 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 question 19 for more info.

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

A strong and effective regulatory framework, which includes an ambitious 2030 binding energy savings target will help overcome non-price barriers (such as split incentives, low consumer awareness, lack of upfront finance and perceived hassle) and realize 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, a 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 that pull 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.

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

- The European Commission, through the Horizon 2020, should provided continued support to long-term and basic research, and 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 efforts should address the reduction of administrative burden for companies to apply and participate to EU research programs
- Increase 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[11].

11 See both: Framework Program 7th and Euratom

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?

Ambitious renewables and energy savings targets encourage investments in knowledge intensive technologies and hence increase the need for medium and high skilled positions in areas such as equipment manufacturing and distribution, project development, construction and installation, operation and maintenance.[12] The maintenance and operation sector creates demand for products and services in other linked sectors that in turn increases production and employment in these sectors. Suppliers to renewable equipment manufacturers, service providers such as the transport, steel and cement sectors, the buildings sector and IT-service providers will also benefit from a strong 3-target based 2030 policy framework.

Establishing policies to achieve ambitious 2030 renewable energy targets could result in as many as 4,4 million jobs in the EU renewables sector[13]

More concretely, investing in renewable energy and energy efficiency creates jobs across sectors, including areas such as construction which have been hit hardest by the crisis. The renewables sector directly and indirectly employs around 1.2 million people in Europe, an increase of 30% since 2009. By 2020, 2.7 million people in the EU will be employed by the renewables sector[14]. At the same time, according to the Energy Efficiency Action Plan 2011, up to 2 million jobs can be created or retained[15], mainly in the building sector, while if the original proposal for the Energy Efficiency Directive of the European Commission were to be implemented, it would boost net employment by some 400 000 jobs.[16.] Furthermore a new report from the German Business Initiative for Energy Efficiency(DENEFF) estimates that energy efficiency jobs in Germany increased from 737.000 to 807.000 in 2012.[17]

In 2011, the European accounted for 40% of the investments in the global energy efficiency market [18]. 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[19]. Together with the reduction of the energy cost, businesses that are engaged in energy efficiency investments can become more competitive by providing the products and the services needed to implement the envisaged energy transformation. As the European Competitiveness 2012 report notes, those companies involved in innovations related to energy efficiency products seem to find their way easier to the market and sell more products than their competitors. A binding energy savings target for 2030 must be considered a priority for legislative action.

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12 *Exploiting the employment potential of green growth, European Commission,* Staff working Document, 2012
13 *EmployRES. The impact of renewable energy policy on economic growth and employment in the European Union,* Fraunhofer ISI et al. 2009
14 See both: *EmployRES. The impact of renewable energy policy on economic growth and employment in the European Union,* Fraunhofer ISI et al. 2009 and *45% by 2030. Towards a truly sustainable energy system in the EU,* European Renewable Energy Council, 2011
15 Energy Efficiency Plan, Staff Working Paper European Commission 2011
16 Non-paper on energy efficiency directive informal energy council, European commission, 2012
17 *Markt für Energieeffizienz wächst um 16 Prozent auf 146 Milliarden Euro,* DENEFF May 2013
18 *Energy Challenges and policies,* Commission contribution to the European summit May 2013
19 *Saving energy: bringing down Europe's energy prices,* Ecofys 2012

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 intensive companies. Their concerns on competitiveness have been the main hurdle to progress on climate and energy policies. 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*[20] 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.

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

Europe's electricity prices are higher than in the USA and China, but lower than in Japan. Although the difference between US and European prices have increased in recent years, prices have always been different, mainly as a result of lower energy taxation in the USA.

Current energy prices are largely determined by the global price for fossil fuels, which is arguably difficult to control. Fossil energy prices in Europe are expected to continue to rise. 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.

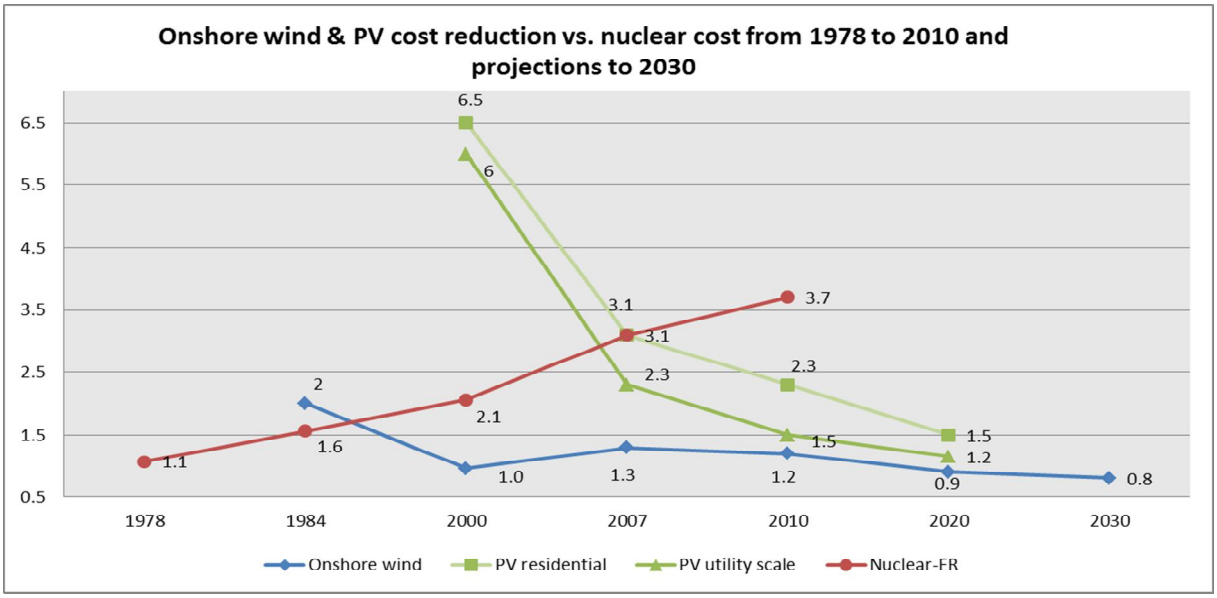
A recent report of CAN Europe and Friends of the Earth prepared by ECOFYS estimates the **net** benefits of energy savings in the EU at about **€200 billion per year** should the target for 2020 be met. It further finds that a reduction of energy use by 2030 – defined as roughly 35% savings below 2005 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.

Average total EU energy costs in the period 2013 - 2050 are comparable in both the Commission's decarbonisation scenario and the business-as-usual scenario. In other words: while decarbonisation policies add to total energy costs, this is compensated by a declining energy import bill in the longer term.

A European strategy to tackle these challenges must 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

20 Carbon leakage and the future of the EU ETS market, CE Delft, April 2013

example, generation from renewable energy installations in Ireland allowed the country to avoid €300 million of gas imports in 2012[21].
Strong support should be given to RD&D in order to further bring down costs of low-carbon technologies, specially renewables, that show the most steep earning experience price curves, while the cost of conventional technologies is only expected to remain at current levels, or even increase as demand for those fuels become higher.



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

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 Green Paper raises the concern that inaction by other big emitters is affecting the level of climate action of the European Union. This concern refers to the myth created by some that the EU is acting alone and that other countries are lagging behind in the fight against climate change. This statement in not based on any assessment of neither the EU's efforts nor the efforts of other big emitting countries.

With the exception of Turkey, Argentina and Saudi Arabia, all G20 countries have made commitments to reduce or limit their greenhouse gas emissions by 2020. Comparing these G20 pledges against 1990 emissions shows that the EU is committed to reduce its emissions by 22.5% while the average A1 commitment is 15.6%. Similarly, compared to 2009 emissions, the EU's commitment counts up to -10% while the average A1 reduction would be -9.5%. And comparing to projected emissions, the EU's reduction would be -21% as compared to an average A1 reduction of -16.5%; an average NA1 reduction of -11% and an average global reduction of -13.5%. The EU performs better than the rest of the world but it would be hard to conclude that the EU is acting alone.

Nevertheless, investing in indigenous, carbon free renewable energy sources and energy efficiency technologies have many economic, social and environmental advantages that should not be underestimated. Investing now in these solution will allow Europe not only to tackle the climate crisis but also the financial crisis and address the drastic need to increase employment

21 Sustainable Energy Authority of Ireland (2013), Energy in Ireland 2012

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.

The rest of the world is already gearing up to supplant EU exports of resource efficient, low carbon and resilient technologies. Europe will regret its failure to invest in the clean economy as its economic competitors strive to supplant EU exports. According to the Ernst & Young renewable energy country attractiveness index, China is the most attractive country for renewable energy investment; the US, India, Japan, Canada and Australia also appear in the top 10.

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 pointed out in our answer to 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.

Setting long-term 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 auctioning revenues could play a role in supporting innovation of manufacturing industries to increase energy efficiency, reduce waste and integrate the use of renewable energy for their own energy production. However, the revenues should also 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 supporting the 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[22] that demonstrate that shale gas will not help Europe to decrease energy prices, nor to gain significant energy independence, without mentioning the indisputable environmental and heath risks 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. 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 a relatively 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 foresee to fulfill over 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:

- The reinforcement of electricity interconnections across Member States and within national territories is fundamental, not only at transmission level but also at distribution level. Larger network transfer capacity will ensure a smoother 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 increasing the capacity credit (generation adequacy) of variable renewable energy sources. The market will benefit 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

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

in additional infrastructure where needed and introducing demand response measures are means to increase a system's flexibility.

- 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 dependence from external energy suppliers, thus increasing security of supply and being in control of energy cost, is by decreasing Europe's energy (especially fossil fuels) imports. Europe's current energy trade deficit of 406€ billion 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 go to re-investing in energy savings measures at the consumer level, and increasing the efficiency in the transformation of primary to final energy (energy conversion factors).

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 emission reductions. This is especially important for achieving cost-efficient emission reductions and increase of renewable energy shares. In the case of energy savings, more information would be needed to understand the technical potentials per Member States, which is not always related to their investment capacity. 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 structured 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 on the agenda, at the expense of support to nuclear energy or subsidies to fossil fuels.[23]

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23 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