A 2030 framework for climate and energy policies

Nature and Biodiversity Conservation Union (NABU)

consultation response

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The average global temperature is currently rising at an alarming rate. Observations from meteorological stations around the world have recorded an average global increase of about 0.75°C since the 1900s[1]*. Each of the last three decades has been warmer than the last, by between 0.15 and 0.2°C on average and all ten of the hottest years have occurred since 1998*[2]*. To put these temperature rises in context, the average global temperature change between the peak and trough of a major ice age is about 4°C and we are already in a warm period. Without new policies to limit global emissions, global average temperature is projected to be 3°C to 6°C above pre-industrial levels by the end of the century*[3]*.*

This level of warming would be a disaster for people and for wildlife. A Climatic Atlas of European Breeding Birds[4] *predicts that on average bird populations in Europe would need to shift 550 km north-east by the end of this century. A study published in Nature estimated that 15–37% of plants and animals will be "committed to extinction" by 2050 as a result of a mid-range warming scenario*[5]*. Even if greenhouse gas emissions were to cease tomorrow, biodiversity would still have to adapt to warming caused by past emissions. Moreover, biodiversity is already being driven into decline by a range of factors, particularly agriculture, fisheries and forestry practices (and other causes of habitat loss or degradation) and invasive species. This*

[1] Trenberth, K.E., et al. (2007), (Solomon, S., et al., ed.), Executive summary, in: Observations: Surface and Atmospheric Climate Change. in: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press.
[2] Met Office: http://www.metoffice.gov.uk/research/climate/climate-monitoring/land-and-atmosphere
[3] OECD (2012) Environmental Outlook to 2050: the consequences of inaction. Key Facts and Figures
[4] Huntley, B., Green, R.E., Collingham, Y.C., Willis, S.G. (2008) A Climatic Atlas of European Breeding Birds. Lynx Editions, Barcelona, Spain.
[5] Thomas, C.D., Cameron, A., Green, R.E., Bakkenes, M., Beaumont, L.J., Collingham, Y.C., Erasmus, B.F.N., Siqueira, M.F.D., Grainger, A. & Hannah, L. (2004). Extinction risk from climate change. Nature, 427(6970): 145–8.

means the "ecosystem services" biodiversity provides to society, such as pollinating food crops, are diminishing.

Actions and political commitments to address climate change continue to fall far short of what is needed. The most recent UNEP "gap report"[6] shows that countries' unconditional pledges to reduce GHG emissions, if fully implemented, will deliver no more than one third of what is needed by 2020 to prevent a dangerous 2°C rise in global mean temperature above pre-industrial levels. A recent World Bank report[7] predicts that even if these pledges are fulfilled there is a 20% likelihood that the globe will be on track for more than a 4°C temperature rise by 2100.This would be a more than fivefold increase compared to the rise in global temperature the world is experiencing today, with extremely severe risks for vital human support systems.

BirdLife Europe agrees with the Commission's position articulated in the introduction to its Communication on The 2015 International Climate Change Agreement that "only by acting collectively, and with greater urgency and ambition, can we avoid the worst consequences of a rapidly warming planet ... Countries that have begun to pursue low carbon development strategies are demonstrating that significant reductions in greenhouse gas (GHG) emissions can be achieved at affordable cost, and can generate benefits as diverse as new jobs, national energy security, improved urban transportation, lower energy bills (through energy savings and increased efficiency) and improved air quality. Despite a widespread acknowledgement that reducing the use of fossil fuels is in their national interests, many countries however continue to fear negative economic repercussions or lack the tools and means to enable further action, especially in the current economic context. The result is that global ambition remains insufficient."

BirdLife Europe sees the development of a new climate and energy package for 2030 as a powerful opportunity to put Europe on track to a clean, green, safer future supporting a vibrant renewable energy industry, reducing the EU's overall demand for energy, and giving up on our dependency on fossil fuel imports, thus increasing our energy security.

It is important to remember that certain renewable energy technologies can present risks to birds and other wildlife if they are not developed sensitively. The challenge we face is to protect nature whilst deploying renewables at the scale and pace required. BirdLife Europe has already set out[8] how European governments can step up to this challenge and ensure that we meet our 2020 renewable energy targets, and also our commitment to halt and reverse biodiversity decline by the same year. As we scale up

[6] UNEP (2012) The UNEP Emissions Gap Report 2012.
[7] World Bank (2012) "Turn Down the Heat – Why a 4 °C World Should be Avoided
[8] BirdLife Europe (2011) *Meeting Europe's Renewable Energy Targets in Harmony with Nature* (eds. Scrase I. and Gove B.), The RSPB, Sandy, UK.
http://www.rspb.org.uk/Images/Renewable_energy_report_tcm9-297887.pdf

ambition to 2030, further renewable energy deployment will need to be implemented in line with four key principles:

1. *Renewables must deliver genuine emissions reductions.*
2. *A strategic, planned approach to deployment is needed.*
3. *Harm to birds and biodiversity must be avoided.*
4. *Europe's most important sites for wildlife must be protected.*

General

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

Overall, BirdLife Europe believes that the current framework is an excellent example of how Europe can work with a common strategy on energy issues and decarbonization policies, aimed at reducing the impact of climate change, gaining energy independence, creating industrial growth and providing better environmental solutions to our energy demands. However, greater ambition is urgently needed and there are some issues and problems inherent in the design of the current package that will need to be addressed in the design of the 2030 framework.

It is important the Commission takes into account the following lessons learned from the 2020 package:

1. **Ambition levels must be raised**

The current EU framework is not ambitious enough. The 2020 targets are not in line with the cost-effective trajectory towards the upper end of the 80%-95% emission reduction target in 2050 that was set out in the European Commission's Roadmap for moving to a competitive low carbon economy in 2050[9].

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 and sustainably deliver its long-term objectives. In addition, 2020 climate and energy targets and policies need to be improved to ensure these targets are deliverable. This would maintain the EU's global leadership position on climate action and technology development, and give regulatory certainty to industries and investors.

2. **A legally binding energy efficiency target is essential**

One of the weaknesses of the current EU climate and energy package is the failure to set a binding energy efficiency target for 2020. As a result, the EU is off track to meet its stated goals. This should be remedied in the next package, with a binding target to deliver a substantial reduction in primary energy demand by 2030. We welcome the EU Council's recent conclusion that there should be a boost to the financing of energy and resource efficiency alongside energy infrastructure and renewables[10].

3. **Binding national targets for renewable energy are essential to ensure a robust policy and stable investment framework.**

[9] European Commission, Roadmap for moving to a competitive low carbon economy in 2050.

[10] General Secretariat of the Council (17 May 2013) European Council (22 May 2013) - Draft conclusions

The existing EU renewable energy targets for 2020 have been highly successful in spurring innovation and investment in renewable energy technologies. Binding targets will be essential for 2030 in order to allow this clear success story to continue and to ensure that the EU avoids locking itself into continued dependency on costly, volatile and risky fossil fuels. This target should, however, only be adopted in conjunction with a cap on the role of bioenergy.

4. **The sectoral renewable energy target for renewable energy in transport should be scrapped.**

The existing 10% transport target has led to the expansion of biofuel production, raising serious climate, food security and biodiversity concerns. Environmental impacts include biodiversity loss, land-use related greenhouse gas emissions, and impacts on water, soil and air quality[11]. Social impacts include land rights conflicts, land-grabbing, and degradation of the livelihoods of local communities and indigenous peoples. Competition for land is also leading to high food price volatility, undermining food security globally[12]. This has led to one independent assessment to conclude that European biofuel targets are unethical, violate human rights and damage the environment[13]. The OECD, World Bank, IMF, FAO have jointly called for "G20 governments [to] remove provisions of current national policies that subsidise (or mandate) biofuels production or consumption"[14] BirdLife Europe is therefore calling for this target to be abolished and replaces with greater efforts to reduce emissions from the transport sector through, for example, increased investment in vehicle efficiency and low carbon modes of transport. A more detailed response and examination of the evidence is given later in this document in answer to the question on sectoral targets.

5. **Member States are over-reliant on biomass**

A number of EU policies, including the Renewable Energy Directive, the Fuel Quality Directive and the ETS promote the use of bioenergy in potentially unsustainable quantities. Biomass accounts for more than half of additional renewable energy projected to be consumed in 2020 compared to 2005, according to National Renewable Energy Action plans. Biomass for heat is the biggest contributing technology to meeting the 2020 renewable energy target overall. Illustrating the scale of this ambition, BirdLife Europe's calculations[15] have shown that if this were all to be met using wood fuel, an additional annual consumption of approximately 88 million oven dry tonnes (odt) would be required. In addition, meeting the biomass for electricity target using wood fuel would require an additional 194 million odt of wood in 2020. For reference, total wood biomass production across the EU each year for all purposes is approximately 500 million odt so this represents a very significant diversion of wood resource. Some Member States, such as the UK, are also expected to import substantial volumes of wood from outside the EU. This risks serious damage to wildlife and the

[11] Howarth, R. W., Bringezub, S., Bekundac, M., De Fraitured, C. Maenee, L., and Salag, O. (2008) Rapid Assessment on Biofuels and the Environment: Overview and Key Findings

[12] FAO, IFAD, IMF,OECD, UNCTAD, WFP, the World Bank, the WTO, IFPRI and the UN HLTF (2011) Price Volatility in Food and Agricultural Markets: Policy Responses (p27)

[13] Nuffield Council on Bioethics (2011) Biofuels: ethical issues

[14] FAO, IFAD, IMF,OECD, UNCTAD, WFP, the World Bank, the WTO, IFPRI and the UN HLTF (2011) Price Volatility in Food and Agricultural Markets: Policy Responses (p27)

[15] BirdLife Europe (2011) Meeting Europe's Renewable Energy Targets in Harmony with Nature (Eds. Scrase I. And Gove, B.)

climate by driving substantial additional logging overseas.[16] The amount of energy biomass can contribute to post-2020 targets should therefore be capped. The level of the cap should be fixed on the basis of the EU's maximum sustainable potential of domestic biomass feedstock supply taking into consideration competing uses in other sectors.

6. Substantial environmental harm and perverse climate outcomes have resulted from inadequate sustainability standards for biofuels and biomass for heat and power

- **Inadequate biofuels safeguards**: In addition to believing that the targets driving biofuels production should be scrapped, current environmental safeguards are far from sufficient to ensure that biofuels deliver adequate greenhouse gas savings, or to ensure that important areas for wildlife and people are protected. A more detailed response and examination of the evidence is given later in this document in answer to the question on sectoral targets.

- **No safeguards for bioenergy for heat and power:** There are still no EU-wide sustainability standards for bioenergy production and we expect those to be proposed to be inadequate in ensuring environmental protection. Biomass for heat and power has the potential to be an important element of a comprehensive strategy to prevent irreversible climate change. However, some forms of bioenergy not only fail to make a positive contribution to preventing dangerous climate change but actually increase emissions over the relevant time period. There can also be significant negative implications for biodiversity resulting from bioenergy production. There are therefore extremely important lessons to be learned for future bioenergy policy. This policy needs to be developed according to the following principles:

  - **Introduce a cap to limit the use of biomass for energy uses to sustainable levels**

  The amount of energy biomass can contribute to post-2020 targets should be capped. The level of the cap should be fixed on the basis of the EU's maximum sustainable potential of domestic biomass feedstock supply taking into consideration competing uses in other sectors. The methodology to identify the appropriate EU-wide cap should be based on modelling of domestic EU sustainable potential under strict, comprehensive sustainability criteria. The cap, which could be filled with both domestic and imported biomass, would help to ensure that the footprint of EU bioenergy use is on a scale which is fair and sustainable. It would also help to ensure that in the competition for limited renewable energy support, unsustainable bioenergy does not eclipse more sustainable renewable energy sources.

  - **Ensure efficient and optimal use of biomass resources, in line with the principle of cascading use**

  The EU must prioritise energy saving for a number of reasons, including that it reduces the need for biomass in the energy sector. Biomass policy should also prioritise demand reduction and ensure that biomass is supplied and used with maximum efficiency. The principle of 'cascading use'[1] should be applied. This means that biomass is used for materials and products first, and the energy

[16] RSPB (2011) Bioenergy: a burning issue

[1] A precedent exists in the waste management hierarchy in the EU Waste Framework Directive (2008/98/EC).

content is recovered from end-of-life products. Where sectors compete for the same, limited sustainable biomass resource, priority should be allocated where no other, more sustainable alternative exists. The limited amount of biomass that is available for energy uses should then only be used in the most efficient installations, with defined minimum thresholds of efficiency. The efficient sustainable use of small-scale bioenergy in rural communities, carried out so as to enhance biodiversity and resilience, should be encouraged.

- **Introduce comprehensive sustainability criteria**

In order to ensure that only sustainable forms of bioenergy are promoted, robust sustainability criteria that cover environmental and social impacts will be needed. The sustainability criteria must ensure that biomass use does not have negative effects on biodiversity. In particular the production of biomass must not cause direct or indirect destruction or degradation of natural forests, or other habitats with high value for their biodiversity and as carbon sinks. Biomass sustainability criteria must help ensure that land management practices contribute to biodiversity and environmental objectives. These include increasing the carbon stock in ecosystems and soils, safeguarding and restoring biodiversity; avoiding soil erosion, promoting conservation of water resources and preventing the accumulation of synthetic fertilizers, pesticides and herbicides in the soil, water or air. The sustainability standards must also address social concerns by ensuring that biomass use for energy does not result in negative social impacts, nor undermine food security. Production and use of bioenergy should not widen social inequalities and land use conflicts should be avoided. Only bioenergy practices that fully meet robust sustainability criteria should be a) counted towards renewable energy targets or b) eligible for subsidies.

- **Include correct carbon accounting for biomass**

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 addresses errors in the way carbon is currently counted that effectively treats all bioenergy as 'zero carbon'.

7. Emissions Trading Scheme allowances were over-allocated

ETS allowances were over-allocated by Member States and the influx of uncapped offset credits from the Clean Development Mechanism (CDM) has increasingly flooded the system, inflating the cap and driving down the carbon price. As such, the EU ETS urgently needs fundamental structural reform. All emission allowances should be auctioned and far fewer allowances made available. The number of offset credits from the CDM should be strictly limited and should be completely phased out over a short period of time. It was always a bad idea to allow a potentially huge amount of credits from uncapped countries into a capped system. Although the CDM, in theory, allows poorer countries to gain credit for emission reductions and contributes to sustainable development, in practice, it has largely been used by emerging economies in which its effect has been marginal. For example, China has generated the lion's share of CDM credits but they have had a trivial influence on the development of China's economy.

Targets

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?

Robust targets for greenhouse gas reduction, energy efficiency and renewable energy use are all essential to effectively tackle climate change.

BirdLife Europe supports the introduction at EU level of a suite of ambitious, coherent and legally binding targets to be met by Member States. We support the following targets for the EU as a whole:

1. At least 55% greenhouse gas emission reductions by 2030 as compared to 1990.

2. 40% savings in primary energy use in 2030 compared to 2005.

3. A 45% share or renewable energy in final energy demand by 2030.

These should be fully legally binding on Member States.

Below is BirdLife Europe's rationale and evidence base for suggesting these targets.

1. At least 55% greenhouse gas emission reductions by 2030
Rationale and evidence: This target will be necessary to be on a pathway to keep the world within safe climate limits. Recent major reports from the World Bank[17], the United Nations Environment Program[18], and the International Energy Agency[19] highlight that the world is not on track to stay below 2°C. They also conclude that the impacts of reaching 2°C will be higher than previously expected. UNEP's Emissions Gap Report indicates that to have a likely chance to avoid dangerous climate change the world will need to go beyond halving emissions by 2050, and developed countries therefore will need to reduce their 2050 emissions towards the upper end of the 80 to 95% range. The 55% target represents the reductions necessary if following a linear pathway between now and 2050.

2. 40% savings in primary energy use in 2030 compared to 2005.

Rationale and evidence: The deep emission reductions needed will only be possible if the EU takes drastic measures to reduce energy consumption. It is increasingly clear that market mechanisms alone are not enough to ensure this happens. A binding energy savings target will be needed to drive energy efficiency measures and a 40% target is in line with that suggested by recent work on demand reduction potential[20] that would contribute to the EU being on course to achieving those deep emissions reductions. Such a target would provide the needed policy certainty for investors, who have explicitly said they would like the guarantee such a target offers, and would serve to increase the EU's energy security and reduce fuel import costs.

3. A 45% share or renewable energy in final energy demand by 2030.

17 World Bank (2012) Turn Down the Heat. Why a Four Degrees Warmer World Must be Avoided.
18 UNEP (2012) The Emissions Gap Report. A UNEP Synthesis Report.
19 IEA (2012) World Energy Outlook 2012
20 The Fraunhofer study projects an average annual reduction of 43.5 Mtoe in the period up to 2030.

Even when energy consumption is strongly reduced, in order to achieve the needed emission reductions, the full optimal deployment of renewable energy will be needed. Informed by two feasibility studies[21], BirdLife Europe believes that the EU can, by 2030 produce at least 380 Mtoe of final energy from renewable energy sources, which not only reflects the current potential of renewable energy technologies but also the potential of emerging technologies that will become operational on a large scale during the next decade. Based on the likely final energy demand predicted in these studies, we therefore believe the EU should set a target to achieve a 45% share of renewable energy in the final energy demand by 2030.

The renewable energy target should cover all energy sectors but should not be divided into sectoral targets. It should ensure that all forms of bioenergy are subjected to an EU-wide binding sustainability framework, and the use of bioenergy should be limited to sustainable available levels, through the establishment of a volume cap.

In establishing these targets, it is important to remember that many renewable energy technologies can present risks to birds and other wildlife if they are not developed sensitively. The challenge we face is to protect nature whilst deploying renewables at the scale and pace required. BirdLife Europe has already set out[22] how European governments can step up to this challenge and ensure that we meet our 2020 renewable energy targets, and also our commitment to halt and reverse biodiversity decline by the same year. More ambitious renewables targets would need to be implemented in line with four key principles:

Renewables must be low carbon.
A strategic approach to deployment is needed.
Harm to birds and biodiversity must be avoided.
Europe's most important sites for wildlife must be protected.

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

There are inconsistencies in the current 2020 targets. Probably the most significant is that the impact of the energy savings target on emission reductions was not taken into account when the ETS cap was set. If both the renewable energy target and the energy savings target are met, emissions will be reduced by 24%[23]. In designing the 2030 package, the emissions reductions from renewable energy 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 depressing it.

There are also contradictions between the goals of renewable energy and greenhouse gas targets, where incentives are given to technologies such as liquid biofuels for transport or the combustion of whole trees for bioenergy. These examples do not, in

21 Greenpeace "Energy R[evolution] scenario for EU-27", 2012; Ecofys "Renewable energy: a 2030 scenario for the EU"

22 BirdLife Europe (2011) *Meeting Europe's Renewable Energy Targets in Harmony with Nature* (eds. Scrase I. and Gove B.), The RSPB, Sandy, UK.
http://www.rspb.org.uk/Images/Renewable_energy_report_tcm9-297887.pdf

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

fact, necessarily contribute to reducing emissions, or do not do so within the timeframe relevant to achieving the central objective of climate policy to limit global average warming to less than 2 degrees. Our concerns regarding biofuels are explored in more detail in later questions.

The Commission should not only address contradictions within climate and energy targets, but must also consider (and eliminate) contradictions with other agreed EU-level targets including the 2020 Biodiversity Strategy : This calls for "halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss".

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?

We believe that sectoral targets are not appropriate where these contribute to greenhouse gas emissions rather than helping reduce them. The failure of the 10% renewable fuels in transport target to reducing emissions has been a major failing of the existing regime to 2020 and we believe it should therefore be scrapped. The main issue has been that Member States plan to meet this target almost entirely through liquid biofuels, which have significant negative environmental and social impacts. As mounting evidence has painted a clear picture of the costs on people and planet, ten major international organisations including the OECD, World Bank, IMF, FAO have jointly called for "G20 governments [to] remove provisions of current national policies that subsidise (or mandate) biofuels production or consumption"[24]

This damage is taking place because the scale of demand created by the 10% target is too high to be met sustainably. In addition, safeguards included in the legislation are inadequate in ensuring that biofuels deliver adequate greenhouse gas savings, or that important areas for wildlife and people are protected.

This particular sectoral target is probably making a negative contribution to climate change. A wealth of studies – including the UK's Gallagher Review[25] – have warned that biofuels can produce more greenhouse gas emissions than the fossil fuels they are meant to replace, in particular if the emissions from indirect land use change (ILUC) are not prevented[26,27]. One study[28] found that in the EU biofuels will provide 9.5% of transport fuel by 2020, of which more than 90% will come from food crops. When indirect land use change is taken into account, these biofuels will emit an extra 27 to 56 million tonnes of CO_2 equivalent per year – the equivalent to an extra 12 to 26 million cars on Europe's roads by 2020. The report concluded that unless EU policy

[24] FAO, IFAD, IMF,OECD, UNCTAD, WFP, the World Bank, the WTO, IFPRI and the UN HLTF (2011) Price Volatility in Food and Agricultural Markets: Policy Responses (p27)
[25] RFA (2008) The Gallagher Review of the indirect effects of biofuels production
[26] E.g. Plevin, R. J., O'Hare, M., Jones, A. D., Torn, M. S., and Gibbs, H. K. (2010) Greenhouse Gas Emissions from Biofuels' Indirect Land Use Change Are Uncertain but May Be Much Greater than Previously Estimated Environ. Sci. Technol., , 44 (21), pp 8015–8021; and
[27] Hertel,T. W., Golub, A. A., Jones ,A. D., O'Hare, M., Plevin, R. P and Kammen, D. M. (2010) Effects of US Maize Ethanol on Global Land Use and Greenhouse Gas Emissions: Estimating Market-Mediated Responses, Bioscience, 223-231
[28] Institute for European Environmental Policy (IEEP) (2010). 'Anticipated Indirect Land Use Change Associated with Expanded Use of Biofuels in the EU: An Analysis of Member State Performance

changes, the extra biofuels that Europe will use over the next decade will be on average 81 to 167% worse for the climate than fossil fuels.

There has been much talk of avoiding the negative implications of indirect land use change by growing crops that can be produced on marginal land, such as jatropha and camelina, as these have the potential to avoid displacing agricultural crops. However, survival ability does not mean that high productivity can be obtained from jatropha under marginal agricultural environments[29] so to this extent jatropha has not proved the silver bullet it was once hoped to be. Furthermore, even if it does prove possible to produce these crops commercially on marginal land, i.e. without ILUC taking place, there remains the question as to how much marginal land there exists globally and what other values (for people, biodiversity and carbon) this land has now and will have in the future. As an example, the Dakatcha Woodlands in Kenya, home to important wildlife species and local communities, was recently threatened with destruction as a result of European companies seeking to invest in jatropha plantations in this area[30].

In conclusion BirdLife Europe believes that it's time to stop ignoring the evidence and that the 10% target driving biofuels production should be replaced by greater investment in more sustainable alternatives for example increasing vehicle efficiency and investing in low carbon modes of transport. To this end, greenhouse gas emission targets for specific sub-sectors may be useful (such as the CO_2 reduction target for vehicles) provided these drive innovation and investment only in fuels, technologies and practices that contribute positively to emissions reductions and which are compatible with the EU's biodiversity target.

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

An overall target for renewable energy (as opposed to a technology specific one) will enable Member States to have the flexibility to deploy those technologies that are most appropriate for their natural resources and economic context.

It is very important that an overall renewables target is maintained to help deliver the necessary emissions reductions and to provide long-term investment certainty to Europe's renewable energy industry. It will be important both to support continued investment in those technologies that have reached full economic viability such as wind power while at the same time providing ongoing support in research and development (R&D) for less mature renewable energy and energy savings technologies that have huge potential but are on the pathway to full commercial viability.

In deciding which technologies should be eligible for support, the Commission should take a view on which technologies are essential for, or have potential to make a major contribution towards, a transition to a fully sustainable future energy system across Europe. The Commission's Energy Roadmap 2050 identified renewable energy, energy savings and electricity network development as three 'no regrets' options for decarbonisation under a range of scenarios. We support target setting that supports environmentally sensitive deployment of these 'no regrets options', and in particular increased R&D to bring forward promising technologies with low ecological risks such as geothermal, tidal stream, wave and solar.

[29] FAO (2010) Jatropha: A Smallholder Bioenergy Crop: The Potential for Pro-Poor Development Integrated Crop Management Vol. 8–2010 (p28)

[30] See http://www.rspb.org.uk/ourwork/casework/details.aspx?id=tcm:9-263030 for more details

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?

Energy security of supply should remain the responsibility of Member States, supported by European institutions such as ENTSO-E and facilitated by reforms to the internal market. Renewable energy is usually domestically produced, and rapid and early deployment minimises the risk of failing to delivering decarbonisation objectives and enhances energy security. At the same time 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. Both renewable energy roll out and reduction in energy demand are under Member State control and targets to encourage both measures will contribute to enhancing security of supply and reducing reliance on imported fossil fuels. Progress on delivering against renewables and energy efficiency targets will provide an indicator of progress on security of supply.

Instruments

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

European heads of state and energy ministers have repeatedly identified fossil fuels subsidies as the main market distortion to mitigating climate change in an effective way (do we have a reference?). Direct and indirect fossil fuel subsidies must therefore be phased out by 2020 at both EU and national levels, including the tax exemptions enjoyed by the aviation industry.

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.).

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.

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

We are not responding to this question.

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

Energy efficiency curbs demand for energy, reduces energy imports and mitigates pollution as well as providing a long-term solution to the challenge of fuel poverty and high energy prices. Therefore, binding energy efficiency targets and measures will certainly help drive energy savings, yielding significant cost reductions. For example, the Commission itself found that meeting the EU's 20% energy efficiency target by 2020 means saving the equivalent of 1000 coal power plants[31] Furthermore, elsewhere in the Commission's own analysis[32] on the potential financial benefits of implementing its proposed Energy Efficiency Directive it was shown that total cost impacts of the Directive over the 2011-2020 period were negative, representing an annual average reduction in overall spending on energy of about €20 billion. Additional recent research[33] suggests that the net benefits of energy savings in the EU are about €200 billion per year should the energy savings target of 20% by 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.

Specific measures such as building renovation have been found to have very significant cost savings. Analysis conducted by the Buildings Performance Institute Europe [34] of deep renovation scenarios (covering EU27, Switzerland and Norway) demonstrated the potential for net energy costs savings as much as €1300 billion (present value) arising to end users, i.e. the individuals and organisations undertaking the investment as a result of renovating Europe's buildings between now and 2050. In order to achieve this, a total investment of €940bn (present value) over the period to 2050 would be required to cover the cost of materials as well as labour. This would be a significant, valuable and lasting boost to the construction sector in particular, given the prevailing economic difficulties in many European markets. The employment generated could be on average as much as 1.1 million net additional jobs throughout the period to 2050.

For individual households, current energy bills typically range between €1000-1800 per annum, equivalent to around 1 month of median annual income. The increased disposable income that is generated through reduced expenditure on energy utilities leads to increased expenditure on other goods and services, producing economy-wide benefits. This finding is matched by research by the US Environmental Protection Agency[35] that found that every $1 spent on energy efficiency in Iowa produced $1.50 of additional disposable income"

[31] European Commission (2013) Energy challenges and policy: Commission contribution to the European Council of 22 May 2013

[32] European Commission (19-20 April 2012) Non-paper of the Services of the European Commission on Energy Efficiency Directive Informal Energy Council.

[33] Ecofys (2013)Saving energy: bringing down Europe's energy prices for 2020 and beyond

[34] Buildings Performance Institute Europe (BPIE) (2013) A guide to developing strategies for building energy renovation.

[35] United States Environmental Protection Agency. (2010). Assessing the Multiple Benefits of Clean Energy: A Resource for States http://epa.gov/statelocalclimate/documents/pdf/epa_assessing_benefits.pdf

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

Sufficient investment in research and development will contribute significantly to bringing forward promising technologies with high carbon savings and compatibility with nature conservation including the following technologies: wave, floating offshore wind, tidal stream, small scale photovoltaic systems and geothermal energy. It will also assist in bringing down the costs of maturing technologies such as offshore wind and solar arrays.

There should be further investment in R&D to reduce the ecological impacts of renewables and contribute to the public acceptability of these technologies. In particular this will allow faster roll out and deployment in areas that might otherwise not be suitable.

Competitiveness and security of supply

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

We are not responding to this question.

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?

Some companies and trade associations have lobbied aggressively against any supply-side reforms of the EU ETS on the grounds that higher carbon prices will harm their competitiveness and cause carbon leakage. However there is 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'[36] 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.

Further research by Sandbag[37] suggests that claims of carbon leakage are, in many cases, exaggerated. Manufacturers have been awarded extensive protections against the market price of EUAs in the form of free allowances and access to international offsets. Following the recession these protections will carry even further against their reduced cumulative emissions. The research has identified several prominent manufacturing firms that will not be required to purchase any EUAs from the market until sometime after 2020, even if their fleet of ETS installations consistently emit at their highest levels on record.

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

The EU can lower the cost of any energy source by reducing the level of demand. Recent research[38] suggests that the net benefits of energy savings in the EU are about

[36] CE Delft Carbon (2013) Leakage and the future of the EU ETS market

[37] http://www.sandbag.org.uk/site_media/pdfs/reports/Sandbag_consultation_response_on_structural_reforms_v.2.pdf

[38] Ecofys (2013)Saving energy: bringing down Europe's energy prices for 2020 and beyond

€200 billion per year should the energy savings target of 20% by 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.

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's commitments, in particular its emission reduction target, should be consistent with the internationally agreed goal of staying below a 2°C global average temperature rise. This should assume that other nations do their fair share in tackling climate change but would mean that the EU should adopt a target of at least -55% from 1990 levels by 2030. To date, the EU's approach has been only to accept a higher target in the context of other countries taking on more ambitious commitments. However, in the context of addressing climate change, this approach appears perverse. If other nations do not do their fair share then the EU will need to raise its level of commitment to make up the difference. The imperative for doing this rests with the historical responsibility the EU has in its contribution to current atmospheric greenhouse gas levels as well as what is needed to keep climate change within safe limits according to the latest science. Furthermore, experience over years of international negotiations shows that the EU is at its most influential when leading by example and demonstrating its commitment by taking ambitious domestic action. Strong, long-term policy signals are also essential if Europe is to continue to lead the world in the development and deployment of clean energy technologies, in doing so spurring and sustaining a much needed economic recovery.

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)?

Legally binding targets and rules preventing sudden/ retrospective changes to support schemes create certainty. (NB: it is important that there is no grandfathering of subsidies or rules for unsustainable technologies such as liquid biofuels where these fail to reduce greenhouse gas emissions or lead to social or environmental harm.) Clarity on European goals creates certainty (e.g. not helped by wavering on CCS, lack of clarity over whether nuclear can be subsidised). Member States' freedom to decide how best to achieve national targets creates flexibility.

As stated above, the EU's targets to reduce greenhouse gas emissions should be set in line with what is needed to keep climate change within safe limits according to the latest science, and not according to what other countries have agreed (or not) in the international negotiations. This would provide much greater certainty and a stable investment framework for investment in clean renewable technologies, which will necessarily need to be part of the EU's industrial future.

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

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 also contribute to other important mechanisms for reducing greenhouse gas emissions as indicated in Directive 2009/29/EC (23 April 2009) amending the 2003 EU ETS Directive. This says that "at least 50%" of auction revenues should be used for a range of climate-related activities, including "measures to avoid deforestation and increase afforestation and reforestation in developing countries". Auction revenues could also be used 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 in supporting innovation in manufacturing industry will be limited.

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?

We assume that the phrase "indigenous conventional and unconventional energy sources within the EU" here refers to fossil energy sources, including their extraction by 'unconventional' means such as hydraulic fracturing and underground gasification. With currently available technology, and under existing regulatory frameworks, we do not consider that the EU should seek to further exploit these resources. Whether used within the EU or exported, the exploitation of these resources presents unacceptable risks in terms of greenhouse gas emissions and direct environmental impacts. The long term solution to energy price volatility and import dependency is a transition to a sustainable, renewables-based energy system.

Climate risks.

To make it possible to achieve the Union's commitment to an 80-95% reduction in greenhouse gas emissions by 2030, it is essential that fossil fuels are used only where there is no available alternative with lower emissions, or where carbon emissions are effectively captured and stored safely. Until carbon capture and storage technology has been successfully demonstrated, and is mandated for use in fossil fuel fired power stations, increased use of fossil energy for power generation presents unacceptable risks in terms of carbon emissions.

While there will be an ongoing need to use some conventional fossil energy resources, mainly natural gas, during the transition to a sustainable, renewables-based energy system, this does not require exploitation of additional reserves. The UK's Grantham Research Institute on Climate Change and the Environment at London School of Economics and Political Science recently found that fossil fuel reserves already far exceed the carbon budget to avoid global warming of more than 2°C.

Their research[39] concludes that "between 60-80% of coal, oil and gas reserves of publicly listed companies could be classified 'unburnable' if the world is to achieve emissions reductions that mean an 80% probability of not exceeding global warming of 2°C". Moreover, "in 2012, $674 billion was spent finding and developing new potentially stranded assets. If this continues for the next decade, economies will see over $6trillion in wasted capital."

[39] http://www2.lse.ac.uk/GranthamInstitute/Media/Releases/2013/MR190413-annual-spend-unburnable-fossil-fuel-assets-financial-risks.aspx

Direct environmental impacts.

The direct environmental impacts of conventional fossil energy exploitation are a major concern from a nature conservation perspective, including the risks of disasters such as the pollution of the Gulf of Mexico. Expansion of oil and gas exploration into the pristine environments of the Arctic is a huge concern. The risks with unconventional fossil energy extraction methods are perhaps even greater. Shale gas exploitation presents high risks of groundwater and surface water contamination, leakage of methane and seismic risks. With tighter regulation some of these risks might be brought within acceptable limits. However shale gas exploration and exploitation would inevitably require extensive road building, construction of well pads and storage ponds. Shale gas wells are known to deplete rapidly, requiring regular re-drilling. The noise caused by drilling, and high volumes of truck movements, combined with the new infrastructure, can be expected to cause considerable disturbance to wildlife, and irreversible habitat loss and fragmentation.

The transition to sustainable energy

According to Eurostat[40] "Imports of raw materials and energy products increased by over one half between 2008 and 2011. The EU shows a persistent deficit in trade of primary goods, mainly driven by the deficit in energy products, which almost tripled between 2000 and 2011." Reducing our import dependence and vulnerability to volatile international energy prices is best addressed in the long term by weaning Europe off fossil energy, not by exploiting more indigenous (but finite) fossil energy reserves. Europe should concentrate its efforts on developing its indigenous renewable energy resources, in tandem with a concerted drive to improve energy efficiency across the economy. Continued reliance on fossil energy, and in particular moves to develop new and environmentally-risky unconventional sources is a retrograde step. It presents no long term solution to high energy costs and climate chaos, and can only serve to delay or prevent the transition to a sustainable energy system.

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?

Given the need to reduce import dependency outlined in the previous question, we do not accept that future energy security should be tackled by diversifying energy supply routes into the EU.

Energy security will, however, be improved by making the internal energy market better functioning. This has two main aspects: increasing liquidity and transparency in international energy trade within the EU, and improving electricity distribution and transmission networks to facilitate high national shares of variable renewable energy capacity.

Interconnection between national electricity markets is essential for developing the internal market, and is the most cost-effective way to enable balancing in energy systems with high shares of variable renewable generation capacity. Provided electricity transmission capacity is developed sensitively with respect to impacts on the natural environment, and in full compliance with the EU's environmental aquis,

[40] http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Extra-EU_trade_in_primary_goods

BirdLife Europe supports grid development to enable renewables growth. As members of the Renewables Grid Initiative, along with other major environmental NGOs and Transmission System Operators, we are actively promoting good practice in grid expansion in Europe. Improving public acceptability, and thereby reducing protests and delays, is a key aim in this work.

We are working closely with ENTSO-E to help improve their methodology for scrutinising grid development projects within their Ten year Network Development Plan process. We have also closely followed the Commission's initiatives around the TEN-E regulation and the selection of energy 'projects of common interest'. We support measures to 'streamline' consenting and environmental assessment processes for priority electricity grid projects, provided it is demonstrated that these projects are necessary in the transition to a sustainable energy system, and provided this entails no reduction in environmental standards.

In summary, the EU can improve security of supply and functioning of the internal energy market by developing interconnection capacity in a transparent way, with proper provision of information and stakeholder consultation. The TEN-E regulation provides for these safeguards, and now that the regulation has been agreed it is a more appropriate time to begin selecting PCIs.

Capacity and distributional aspects

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 are not responding to this question.

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?

We are not responding to this question.

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

We are not responding to this question.

NABU- Working for people and nature

Founded in 1899, NABU (NATURE AND BIODIVERSITY CONSERVATION UNION), is one of the oldest and largest environment associations in Germany. The association encompasses more than 500,000 members and sponsors, who commit themselves to the conservation of threatened habitats, flora and fauna, to climate protection and energy policy.
NABU`s main objectives are the preservation of habitats and biodiversity, the promotion of sustainability in agriculture, forest management and water supply and distribution, as well as to enhance the significance of nature conservation in our society. About 30,000 volunteers play an active role in practical nature conservation work, with great success: this is something that is special to NABU. These active NABU members look after more than 110,000 hectares of valuable protected reserves in Germany.
NABU also has volunteer groups working on an international level to conserve nature and combat poverty in Africa, Eurasia and the Caucasus. This work is supported by professionals at our regional offices and at our national headquarters in Berlin, who take care of public relations, project development and management and political lobbying.

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