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BUND

FRIENDS OF THE EARTH GERMANY

Submission on the European Commission's Green Paper on a 2030 framework for climate and energy policies

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General

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

There is a frightening disconnect between climate science and EU action. According to the Intergovernmental Panel on Climate Change, the EU and other developed countries should be achieving emission cuts of 25-40% by 2020 just to have a 50 per cent chance of keeping global warming below 2 degrees[1]. In other words, even 40% cuts by 2020 are extremely risky, given the wide consensus on the devastating consequences of exceeding 2 degrees. Yet the EU is still aiming at 20% cuts by 2020, and the Commission is currently working on the basis of 40% cuts by 2030[2]. This is utterly inadequate.

Worse, by acting as if its measures are in line with the 2 degree objective, the EU is creating a false sense of security. People believe the 40% by 2030 objective is sufficient, when it plainly is not. The lesson from 2020 is that *from the outset* the Commission must set an emissions objective for 2030 which is in line with climate science. Research conducted in 2009 by the Stockholm Environment Institute for Friends of the Earth Europe showed the EU should be aiming at a minimum of 60% domestic emissions reduction below 1990 emissions levels[3], and outlined measures to deliver this objective. However, this was based on the premise of increased emission cuts which have not taken place. More recent research shows over 80% cuts by 2030 are needed[4].

Binding targets work well, while member states by their own admission tend to ignore indicative targets[5]. According to Commission analysis, the two binding targets for 2020 (emissions reductions and renewables) are on track to being delivered. The non-binding energy savings target, meanwhile, is unlikely to be met, despite the recent adoption of the Energy Efficiency Directive. This is a clear case for setting a (more ambitious) binding target in the 2014 review of the energy efficiency directive, and three binding targets for 2030.

The EU was correct to set three headline targets for 2020 for greenhouse gas emissions, renewables and energy savings. This model must be repeated for 2030, and all three targets must be made legally binding. The case for emissions is self evident. Energy saving and renewables, meanwhile, are the best options to cut emissions while ensuring maximum benefits for the EU and its citizens (benefits include reduced environmental and health impacts, job creation, cost savings, increased energy security). For more details on why Bund recommends three binding targets see below and the Friends of the Earth' briefing '2030 climate and energy

[1] The IPCC recommends cuts of 25-40% by 2020 for Annex 1 countries. This is in line with GHG concentrations of 450ppm: http://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch13-ens13-3-3-3.html . According to the IEA, 450ppm corresponds to a 50% chance of keeping global warming below 2°C: http://www.iea.org/newsroomandevents/news/2012/may/name,27216,en.html

[2] See 'Roadmap for moving to a low-carbon economy in 2050'

[3] Stockholm Environment Institute (2009): http://www.sei-international.org/mediamanager/documents/Publications/Climate-mitigation-adaptation/europes_share_heaps_09.pdf.pdf

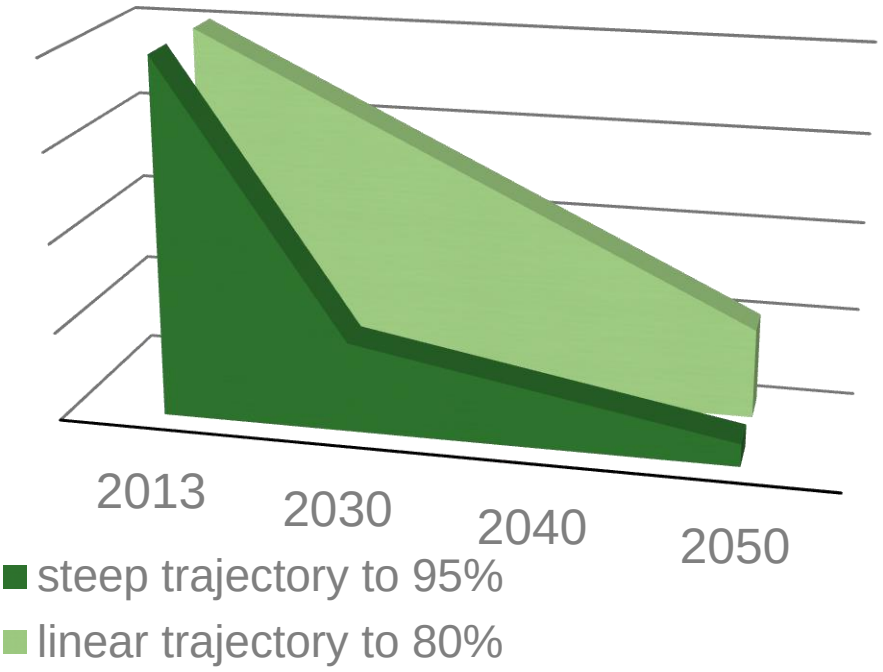
[4] Friends of the Earth (England, Wales and Northern Ireland),'Reckless Gamblers' (2011), based on a Table 4, page 19. http://www.foe.co.uk/resource/reports/reckless_gamblers.pdf

[5] Euractiv: http://www.euractiv.com/energy-efficiency/guenther-oettinger-news-517739

policy[6]'.

Coherence between the three binding targets is extremely important. According to Commission modelling, meeting the renewable energy and energy savings objectives would deliver about 24% emission cuts. Thus the 20% emissions target pulled down the ambition of the other two objectives. What's more, when the Energy Efficiency Directive was being prepared in 2011, energy savings were criticized (including by part of the Commission[7]) because they would reduce emissions faster than expected, and therefore reduce the carbon price. This was twisted logic as the key point is that emissions are cut, not how they are cut. The solution for 2030 is to set higher targets which are mutually supportive. Not targets which due to their lack of ambition discourage higher efficiency, or use of renewables.

Science is clear that action to stop climate change must be based on an assessment of the total amount of greenhouse gas emissions which can be emitted without exceeding the threshold for dangerous temperature rises. For example, to stand an 80% chance of staying below 2°C, the world must emit no more than 565 billion tons of carbon dioxide between now and 2050[8]. This equates to just 15 years of current global emissions. **This argues for a higher end goal for 2050 (95% cuts not 80%) and a steeper reduction curve instead of a linear trajectory (see graph).**



Graph: A steep reduction trajectory to a -95% target markedly reduces the overall amount of emissions over the next decades.

[6] http://www.foeeurope.org/sites/default/files/publications/2030_briefing_may2013.pdf
[7] European Voice: http://www.europeanvoice.com/article/imported/efficiency-directive-no-threat-to-carbon-prices/71491.aspx
[8] Meinhausen et al. (2009) *Greenhouse-gas emission targets for limiting global warming to 2°C.* Data adjusted for the 2010-2050 period

The role of biomass in meeting a renewable energy target should be treated with caution. Biomass is expected to fulfill nearly 50% of the 2020 renewable energy target. **Strong sustainability criteria for biofuels are necessary.** These criteria should prevent destruction of ecosystems, monocultures, burning of tree trunks, increases in the importation of biomass, and direct and indirect land use change. The EU should also calculate the maximum sustainable potential for biofuels, and **avoid a sectoral transport target.**

If the EU is to do its fair share to address climate change, it must carry out ambitious domestic emission cuts and at the same time provide financing to developing countries to cut their own emissions. **Binding guarantees on international climate finance are required to ensure payments are made.**

2. 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?

BUND supports three binding targets for greenhouse gas emission cuts, energy savings and renewable energies[9].

The EU's climate and energy policies are dangerously out of sync with science[10]. This must urgently be addressed. At least 60% cuts in greenhouse gases below 1990 are feasible and necessary. Wheras we know that cuts of 80% are more in line with the scientific proofed high chance to not exceed 2°C global warming In addition the EU needs a 50% reduction in energy use compared to 2005 levels[11], and by 2030 a 45 % share of renewable energies (taking sustainability criteria for biomass into account).

Ambitious targets for 2030 will require that the 2020 targets are also made more ambitious. Otherwise very steep reductions of emissions will be required in the 2020-2030 period to stay within carbon budget (and corresponding efforts for energy savings and renewables). This will be more difficult to achieve compared to reductions which start now.

Why *three* binding targets? Reduced energy consumption (by renovating buildings, for example, and by increasing transport and industrial efficiency) is a precondition for meeting the EU's mid– to long– term emission reduction objectives, according to the European Commission's Roadmap for moving to a competitive low-carbon economy in 2050. Similarly, all decarbonisation scenarios in the Commission's Energy Roadmap 2050 rely on a very significant increase in the share of renewable energies. Besides cutting emissions, energy savings and renewables will also bring us enormous benefits in terms of quality of life, job creation, energy security and economic stability. This is why, as well as setting a greenhouse gas emission reduction target for 2030 in line with science and equity, the EU must also support ambitious targets for energy savings and renewables.

[9] http://www.foeeurope.org/sites/default/files/publications/2030_briefing_may2013.pdf
[10] http://www.foeeurope.org/sites/default/files/publications/foee_europe_climate_gap_briefing_june13.pdf
[11] The EU's potential according to a report by Fraunhofer ISI for the German environment ministry: 'Concrete Paths of the European Union to the 2° Scenario'

Why *binding* targets? Without ambitious, binding targets there is no guarantee energy savings and developments in renewable energy will happen on the required scale, even if they make perfect economic sense. For example, in order for a government to benefit from renovating large parts of its building stock to be more energy efficient, it would need to set out a very clear allocation of responsibility for different levels of government. This would need to include mobilising upfront financing, ensuring the engagement of building owners, having a workforce which is capable of carrying out work to the required level, and so on. And all these things must happen in the right sequence, in order for supply chains to establish themselves and for the programme to take off. While entirely feasible, this is a fairly complex and challenging task. And unless the government has a particular commitment or obligation to deliver a certain amount of energy savings – such as a binding target – it is very likely that the savings will not happen. The EU's indicative target for energy savings by 2020 has resulted in a distinct lack of attention by governments and the private sector alike – with the result that the objective will most probably be missed.

Building up a full programme of renewable energy investment is also far from straightforward. In recognition of this, governments have set themselves a legally binding target to produce 20% of their energy needs from renewable sources by 2020, and adopted an obligation to put in place comprehensive support schemes. Providing investment security and reducing risks can reduce financing costs by up to 50%[12].

Why *energy savings and renewables*, and not other technologies? If we don't give guidance on how emission cuts will be made – by putting in place a coherent set of three targets – the door will be left open for false solutions like nuclear power, the replacement of coal with natural gas and unsustainable bioenergy, or carbon capture and storage. These technologies will not deliver sufficient long-term emissions cuts.

Nuclear is too dangerous, as Fukushima shows us. It is also prohibitively expensive. There are two large-scale nuclear projects underway in the EU: Olkiluoto in Finland and Flamanville in France. Both are five years behind schedule and two or three billion Euros over budget[13]. And there is no safe, long-term solution for the storage of radioactive waste. Nuclear cannot deliver safely, or within the required time period.

Energy companies are currently pursuing several bioenergy sources with a worse carbon footprint than fossil fuels[14]. These also represent a false solution and accelerate instead of mitigate climate change. Burning whole trees for electricity in coal installations is extremely inefficient and makes no environmental sense. And burning crop based biofuels for energy contributes to significant greenhouse gas emissions due to the destruction of natural carbon sinks as a result of agricultural expansion. It also fuels conflicts over land use. New targets for 2030 must exclude such unsustainable forms of bioenergy. The limitations thus placed on renewable energies increase the importance of reducing energy consumption in order to match

[12] Ecofys (2012), Interaction between RES support schemes and the internal electricity market http://www.europarl.europa.eu/document/activities/cont/201211/20121109ATT55209/20121109ATT55209EN.pdf

[13] The Independent, http://www.independent.co.uk/news/uk/politics/government-to-rip-up-rulebook-and-subsidise-new-nuclear-plants-8219870.html

[14] Haberl H. et al. (2012) "Correcting a fundamental error in greenhouse gas accounting related to bioenergy", Energy Policy, 45, Pages 18–23: http://www.sciencedirect.com/science/article/pii/S0301421512001681

up energy supply and demand.

On its own, a greenhouse gas reduction target for 2030 risks encouraging the replacement of coal with unconventional gas sources – such as shale gas. The lifecycle greenhouse gas emissions from burning and extracting shale gas make it even more damaging than coal[15]. The International Energy Agency estimates the development of shale gas would drive climate change 'well above the widely accepted 2°C target'[16]. On top of this, unconventional gas is linked to air and water pollution, and significant health threats. Development of shale gas requires significant investment, which has already reduced available capital for renewables projects in the US.

Carbon capture and storage (CCS) is not a viable alternative. CCS is a 20th century concept, designed for cheap and plentiful fossil fuels. And because extra energy is needed to capture, transport and store carbon dioxide, CCS increases reliance on fossil fuels.

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

As described above, coherence between the three bindings targets is extremely important and is lacking in the 2020 climate and energy package. According to Commission analysis, 2020 greenhouse gas cuts would be about 24% providing the renewable energy and energy savings objectives were met. Yet when the Energy Efficiency Directive was being prepared in 2011, energy savings were criticized because they would cut emissions faster than expected, and therefore reduce the carbon price. This was of course twisted logic as the main point is plainly to cut emissions. The solution for 2030 is to set higher targets in line with climate science which are mutually supportive – *not* targets which due to their lack of ambition discourage higher efficiency, or a higher use of renewable energies.

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?

Bund believes the focus should be on the three main targets: greenhouse gas cuts, energy savings and renewables. There should be no sectoral targets for renewable energies, especially not for transport, as this encourages overuse of biofuels. Other policies, such as emissions standards and f-gas regulations can be appropriate.

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

Targets must be aspirational. The urgency of dealing with climate change and the need to rapidly switch to energy savings and renewables to cut emissions, means that targets must be set at the upper level or above what is currently judged to be technologically feasible (for example, the Commission is currently working on the basis of 16-20% energy savings by 2030 compared to 2005 levels - yet research by Fraunhofer ISI for the German environment ministry

[15] See for example http://www.eeb.cornell.edu/howarth/Howarth%20et%20al.%20--%20National%20Climate%20Assessment.pdf

[16] IEA(2012), Golden Rules for a Golden Age of Gas, page 91: http://www.worldenergyoutlook.org/media/weowebsite/2012/goldenrules/WEO2012_GoldenRulesReport.pdf

estimates 50% savings are possible[17]). Targets must encourage the development and roll out of new, advanced technologies.

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?

Security of supply, in the sense of energy import dependency, can already be clearly measured. Advances in security of supply within the EU's electricity system, for example, could be assessed by measuring the degree of interconnectivity between member states. More generally, BUND believes the best way to increase security of supply, cut costs and create jobs is to set tougher targets for energy savings and renewable energies.

3. Instruments

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

Explicitly requiring emissions cuts to be made through energy savings and the development of renewable energies will help ensure that reductions are achieved in Europe rather than elsewhere. This is important because the Emissions Trading System (ETS) and the EU's 'Effort Sharing' policy, allow up to 50%[18] and 100%[19] respectively of required emission cuts to be met outside the EU through the international Clean Development Mechanism. The effectiveness of these 'offset' reductions is highly questionable: it is, for example, possible to credit investment in Chinese coal plants as emission 'cuts'[20]. In addition, carbon offsetting is causing significant social and ecological problems across the world[21]. Strong 2030 legislation for energy savings and renewable energies will also help counter the structural failures of the ETS. The EU cannot rely on a market-based approach alone: volatile and unpredictable carbon prices will not ensure a transition to a safe, sustainable and affordable energy system[22].

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

Cost efficiency is important. On a purely technological basis, the EU Commission judges energy

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[17] The EU's potential according to a report by Fraunhofer ISI for the German environment ministry: 'Concrete Paths of the European Union to the 2° Scenario'

[18] See the European Commission's F.A.Q. section on the ETS question 20 : http://ec.europa.eu/clima/policies/ets/faq_en.htm

[19] Estimate based derived from European Commission data on emission reduction requirements under the Effort Sharing Decision (http://ec.europa.eu/clima/policies/effort/framework/docs/draft_decision_aeas_esd_en.pdf), authorised levels of offsetting in the Effort Sharing Decision (question 5 http://ec.europa.eu/clima/policies/effort/faq_en.htm) and 2005 greenhouse gas emissions data provided by the European Environmental Agency (http://www.eea.europa.eu/publications/ghg-trends-and-projections-2012)

[20] Following a decision by the CDM executive board - see meeting report under 81(g): http://cdm.unfccc.int/filestorage/r/8/K3OB5VGAQ1J4RU0PMTC8WISNL2XYFE.pdf/eb69_report.pdf?t=V298bWRxcW45fDCfl42XktPiL6SAPWsuhDEz

[21] Friends of the Earth (2009), 'Dangerous Distractions': http://www.foe.co.uk/resource/briefing_notes/dangerous_distraction.pdf

[22] Complementary policies to the ETS are needed. See for the example the IEA report 'Summing up the parts': http://goo.gl/t8HHn

efficiency and renewables no more expensive than fossil fuels and nuclear. And this is without factoring in the costs of oil, gas and coal imports. A report by research group Ecofys concluded that the EU could save €250 billion per year with ambitious energy savings policies[23].

However, we believe the biggest priority is to give guidance on how emission cuts will be made, by putting in place a coherent set of three ambitious targets for greenhouse gas cuts, energy savings and renewables. Otherwise the door will be left open for false solutions like nuclear power, shale gas or carbon capture and storage for fossil fuels. These technologies are *billed* as viable decarbonisation solutions, but will not deliver sufficient long-term emissions cuts.

Our point is that concerns about 'deliverability' - the risks of not meeting the 2030 objectives, which vary depending on which technologies are selected - must be fully factored into the analysis for 2030. Moreover, the economic cost of not meeting emission reduction objectives will - due to climate change impacts - be very great and must also be taken into account.

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

Friends of the Earth Europe published a briefing in 2011[24] which identified 10 solutions for financing energy savings and increasing cost effectiveness. Here are two examples:

Energy Service Companies and third party financing: Third party financing is a potent idea that is gaining a lot of ground. How does it work? An energy service company or local authority measures a house's energy use; it then signs a deal to reduce - at its own expense - monthly energy bills by installing better insulation, or by fitting smarter heating systems. The household gains from a higher standard of living, and the investor uses some of the money saved on the homeowner's bills to cover its costs and pay profits over a medium-term contract period. A win-win situation.

Sharing the financing – and the profits: When Denmark launched the idea of feed- in-tariffs (guaranteed long-term prices) for wind power, development quickly ran into public opposition. Unsupportive of new wind farms that changed the landscape, people blocked projects and delayed planning permission. In response, the government offered guaranteed 'buy ins': communities within a 2.5km radius were given the chance to co-invest in wind farm development. Because feed-in-tariffs paid better rates of return than banks and were safer than the stock markets, public response was extremely enthusiastic. Today, wind power provides close to 30% of Denmark's electricity and people can invest in projects all over the country. The same model is now being developed for energy savings. Town halls, schools and other public buildings can all get a makeover with private capital - and the money saved on the energy bills goes to repay the local investors and give them a profit.

[23] Ecofys estimate €200bn annual net savings by 2020, assuming the EU's 20% by 2020 energy savings target is met, and €250bn annual net savings by 2030, assuming a reduction in energy use of roughly 35% below 2005 leves. See page 4, http://www.ecofys.com/en/news/energy-efficiency-will-trigger-250-billion-yearly-net-savings-by-2030/

[24] http://www.foeeurope.org/publications/2011/FoEE_Paying_for_Europes_cheapest_energy_source_Sept2011.pdf

4. 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?

The Commission must not lose sight of the principal objective of its climate and energy policies: to prevent dangerous climate change.

However, there is clear evidence that strong backing for energy savings and renewables - in the form of binding targets - offers the best chance for cutting emissions *and* delivering economic and geopolitical benefits.

Because wind, solar and water resources are free, there are no fuel costs to these renewables. This means that once up-front investment costs have been paid off, energy prices can be lowered well below present levels while still paying renewable energy producers a fair income. This is in contrast with fossil fuels: the UK Climate Change Committee has found that up to 90% of price rises since 2004 are due to rises in gas prices[25]. And fossil fuel prices are only getting higher and more volatile. In Australia, the cost of wind has fallen to below that of coal[26].

Cutting EU energy demand and switching to renewables will also be a boon for energy security, business opportunities and new jobs. The EU spends roughly €400 billion per year on oil and gas imports. Putting this money towards measures to reduce energy consumption and develop renewables would not only eliminate import dependency, it would be a huge stimulus for European businesses and jobs. For example, the Commission estimates roughly 400,000 net new jobs will be created if the EU meets its 2020 energy savings target.

The EU should ensure its emission reduction targets are 100% domestic. Not only is there often no guarantee that clean development mechanism projects would not have happened without EU money, but offsetting is also bad for the EU economy. As noted by the Commission in the background document for this consultation, by crediting external emission cuts, EU governments and businesses are in fact financing improvements to rival industries. Domestic targets, by contrast, stimulate EU business, for example by encouraging energy efficiency improvements.

Energy savings would also create revenue streams for governments. For every 1 euro which the German government invests in the KFW lending scheme (to households to make efficiency investments) it gets 5 euros back[27]. This is due to the spin off effects of job creation, higher consumer spending, lower costs for unemployment benefits etc.

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?

There is little evidence of carbon leakage, according to the International Energy Agency[28],

[25] Price rises due to non-renewables/climate factors were 90% for consumers, 85% for industry and 66% for commercial impacts of meeting carbon budgets http://hmccc.s3.amazonaws.com/ENERGYbill12/1672_CCC_Energy-Bills_bookmarked.pdf

[26] Bloomberg New Energy Finance. http://www.bloomberg.com/news/2013-02-06/australia-wind-energy-cheaper-than-coal-natural-gas-bnef-says.html

[27] Study (in German): http://www.kfw.de/kfw/de/KfW-Konzern/Research/Evaluationen/PDF-Dokumente_Evaluationen/STE_Research_Report_10_2011%2c_Juelich.pdf

[28] http://www.iea.org/publications/freepublications/publication/name,3791,en.html

despite industry's exaggerated claims.

We believe it is essential to resist industry scaremongering on the economic impact of ambitious climate and energy policies. Already in 2006, the Stern Review concluded that the costs of climate change (5% GDP per annum) outweighed the costs of avoiding it (2% GDP per annum). The President of the World Bank has said "we need to be shocked into action"[29].

It seems clear that the intention of lobby groups such as BusinessEurope is to ensure as little change to business as usual practices as possible. Yet further delay and insufficient ambition will make it exceedingly difficult to avoid dangerous or even catastrophic global warming.

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

It is essential to realise that reliance on fossil fuels and nuclear will push up costs compared to policies which emphasise energy savings and renewables (see also above).

There is much hype about the use of shale gas to cut energy prices. But it is crucial to note that prices have fallen in the United States because - as the energy industry itself admits - shale gas is being exploited at below cost[30]. This is before getting to the climate, health and local environmental issues associated with shale gas.

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 recent GLOBE Climate Legislation Study shows that it is a myth that the rest of the world is not taking action against climate change. 32 out of 33 major economies have progressed or are progressing with climate policies[31], and more than 100 countries have announced to take action within the UNFCCC framework. The Climate Action Tracker[32] rates the EU's current UNFCCC emission reduction pledge as 'inadequate', and ranks it lower than Mexico, Brazil, South Korea, India, South Africa, Indonesia, Norway, and Japan.

Meanwhile the climate crisis worsens: we need to be 'shocked into action', writes the President of the World Bank. His organisation has concluded that the world is on track to a '4 degree warmer world', with 'devastating' consequences. There is neither time nor justification to delay while lamenting the supposed inaction of other nations.

Furthermore, advancing energy savings and renewables in order to reduce emissions in the EU is a 'no regrets' policy. What Europe will regret is a failure to invest in the clean economy. The EU's economic competitors are catching up. China plans to invest $372 billion into energy conservation projects and anti- pollution measures over the next three-and-a-half years[33]. In

[29] World Bank (2012), Turn down the Heat, Why a 4 degree warmer word must be avoided http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf

[30] In 2012 ExxonMobil's CEO, Rex Tillerson, complained that the lower prices due to the US natural gas glut, although reducing energy costs for consumers, were depressing prices and were thus often insufficient to cover production costs resulting in dramatically decreased profits. Le Monde Diplomatique: http://mondediplo.com/2013/03/09gaz

[31] http://www.globeinternational.org/index.php/legislation---policy/studies/climate

[32] http://climateactiontracker.org/countries.html

[33] http://www.reuters.com/article/2012/08/22/us---china---energy---idUSBRE87L01920120822

August 2012, the Obama administration issued new rules that require automakers to nearly double the average fuel economy of new cars and trucks by 2025[34].

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)?

Investors (be they banks, funds, businesses or citizens) need to know that a commitment, once made, will be respected and followed up on. Binding targets provide this reassurance.

The case for a binding greenhouse gas target is plain. Here are the principal arguments (as noted above) for binding targets for energy savings and renewables:

Without ambitious, binding targets there is no guarantee energy savings and developments in renewable energy will happen on the required scale, even if they make perfect economic sense.

For example, in order for a government to benefit from renovating large parts of its building stock to be more energy efficient, it would need to set out a very clear allocation of responsibility for different levels of government. This would need to include mobilising upfront financing, ensuring the engagement of building owners, having a workforce which is capable of carrying out work to the required level, and so on. And all these things must happen in the right sequence, in order for supply chains to establish themselves and for the programme to take off.

While entirely feasible, this is a fairly complex and challenging task. And unless the government has a particular commitment or obligation to deliver a certain amount of energy savings – such as a binding target – it is very likely that the savings will not happen.

The EU's indicative target for energy savings by 2020 has resulted in a distinct lack of attention by governments and the private sector alike – with the result that the objective will most probably be missed.

Building up a full programme of renewable energy investment is also far from straightforward. In recognition of this, governments have set themselves a legally binding target to produce 20% of their energy needs from renewable sources by 2020, and adopted an obligation to put in place comprehensive support schemes. Providing investment security and reducing risks can reduce financing costs by up to 50%.

Regarding flexibility, the huge challenge of addressing climate change makes its plain that targets for greenhouse gas emissions, energy savings and renewables (the only viable solutions to cutting emissions), once decided, should be subject to upward-only reviews, so as to retain coherence with international agreements if necessary or greater scientific understanding of climate change.

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?

The maths of climate change is chillingly simple. The amount of carbon dioxide which can be safely emitted into the atmosphere is about four times less than the emissions contained in

[34] http://www.nytimes.com/2012/08/29/business/energy---environment/obama---unveils---tighter---fuel---efficiency---
standards.html

currently indicated fossil fuel reserves[35]. An honest risk assessment of the EU's climate and energy policies can have only one conclusion: the rapid replacement of fossil fuels with renewable energies and energy efficiency. This is the key point the EU and individual member states must consider before developing indigenous resources. Only renewable energies and energy savings will cut costs, create jobs, and reduce energy dependence without greenhouse gas emissions.

5. 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 believe effort sharing should be based on following principles:

- A recognition of the need to take dramatic action to address climate change
- A willingness to put in place the extremely ambitious targets, measures and policies needed to speed up the transition to a sustainable energy system based on energy savings and renewable energies
- A reappraisal of the potential to cut emissions, save energy and develop renewables. For example, the Commission is currently working on the basis of cutting energy use by about 20% by 2030 (compared to 2005) levels. Yet as noted above report by Fraunhofer ISI for the German environment ministry estimates 50% savings are possible.

[35] Carbon tracker (2013) *Unburnable carbon 2013:Wasted capital and stranded assets*