

Executive summary

To achieve the multiple objectives of the European Climate and Energy policy, the European Union should adopt an integrated climate and energy framework with ambitious and legally binding targets for Renewable Energy Sources (RES), Energy Efficiency (EE) and reduction of Greenhouse Gas emission (GHG). Those new binding minimum targets should be established at European level and broken down at national level for an efficient and legally enforceable implementation. Such a framework would bring more benefits for European citizens and industries than a one-legged policy based on a supposedly “technology-neutral” “GHG-only” approach. This multi-target approach is necessary to avoid positive financial incentives for the EU nuclear industry.

The consensus of the 2009 agreement should be preserved and the three targets should be adopted at the same time. For a mutual reinforcement the RES goal plus a separate RES electricity goal and energy efficiency targets should be determined first, then addressing the remaining emissions with a GHG target.

The European Commission should not follow the temptation to first reach an agreement on a GHG emissions targets in view of the international discussions in 2015 at the COP in Paris, and then pursue negotiations on RES and EE targets. This would send the wrong signal to investors and international partners as it would not reflect the EU commitment to comprehensive and an integrated framework for 2030 and could enable a nuclear renaissance in Europe. Due to the long-term investment cycles, investment certainty for RES is needed now as 2020 is already tomorrow.

⇒ **Therefore, the European Commission should propose an integrated climate and energy framework based on RES, EE and GHG ambitious and legally binding targets.**

Key points of the reply

EREF calls on the European Commission to prepare a legislative proposal to:

- Propose four mutually reinforcing 2030 targets for RES, RES el, Energy Efficiency and GHG emissions. The targets should be ambitious, legally binding, set up at national level and broken down into nationally binding targets.
- The four targets for 2030 should be in line with a 100% RES-target for 2050
- Guarantee the continuation of the priority access for RES.
- Give the possibility for the Commission to impose direct penalties on the Member States which do not fully and timely implement the post-2030 framework.
- Resolve some of the malfunctioning of the EU ETS on short term (through the EU ETS allowances back-loading)
- Substitute the EU-ETS by a budget neutral Ecological Tax Reform. A CO₂ tax for all sectors (former EU-ETS and non-ETS) should set an increasing and predictable carbon price to ensure a carbon free EU economy in 2050.
- Ensure a level playing field by making a thorough analysis of subsidies and not internalised external costs given to the energy sector and push the EU Member States to phase out subsidies to fossil fuels and nuclear energy.
- Not allow any new subsidies to nuclear energy and force the nuclear industry to take the full risk of nuclear power plants and nuclear waste treatment.
- Encourage EU Member States to adopt flexible and evolving support frameworks for RES to avoid retrospective changes.
- Develop in parallel to the 2030 framework an industrial policy, a better financing framework for RES and a comprehensive and ambitious R&D policy

4.1. General

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

Success of the 2020 binding RES target

The 20% RES binding targets have shown how long term legally binding targets are successful in giving the necessary incentive to Member States to develop a RES industry. Since the adoption of the RES Directive, the European renewable industry has grown dramatically, creating a very large amount of green jobs in Europe, increasing by 30% since 2009 to reach 1.2 million people in 2011. The binding targets have helped the EU reach a share of 13% RES in final energy consumption in 2011.

In the light of the current disturbances in many EU Member States, using the economic crisis to justify retrospective and damaging changes for support mechanisms to RE, EREF is convinced that without binding commitment under the RE Directive, we may have seen more negative actions and the Commission would not have the authority to bring Member States back in the right way.

The 2020 energy and climate framework has made the renewable energy sector one of the most recession-resistant areas of European economy; renewable energy, energy efficiency and ICT are those sectors which have shown positive growth in the face of the crisis. The renewable energy industry contributed 1% of the EU's GDP.

The binding 20% renewable energy target will lead to a net GDP increase of 0.25% in comparison to a scenario with no renewables policies. By 2030 this could further increase to a minimum net GDP growth of 0.45%.

Success of the comprehensive package

One of the key success factor of the 2020 Climate and Energy policy is that it links the different sectors to ensure that the European Union achieve its ambitious 2050 agenda. In order to reach many objectives (i.e competitiveness, decarbonisation, security of supply, economic and social growth...), many instruments are needed. The EU 2050 agenda cannot be reached with a single CO2 reduction tool.

Elements to be kept in the 2030 framework

In terms of RES policy, the binding character of the target makes its achievement possible. In addition, the National Renewable Energy Action Plans drafted by the 27 Member States provided the renewable energy industry with a very clear direction up until 2020.

One of the key elements from the 2020 Climate and Energy framework that should remain for 2030 is the grid priority access for RES. Until a change of the market structure and until RES are the dominant sources of energy, continued priority access to the grid will be needed.

Flexibility of support schemes needed

Another lesson learn is that the design of the renewable energy supports schemes is crucial to adapt to the maturity but also to the changing costs of renewable energy technologies and further efforts are needed in terms of streamlining administrative barriers, clarity of planning and permitting procedures.

4.2. 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?

An integrated climate and energy framework

To achieve the multiple objectives of the European Climate and Energy policy, the European Union should adopt an integrated climate and energy framework with ambitious and legally binding:

- RES targets
- RES electricity target
- GHG targets
- Energy Efficiency targets

As shown in the European Commission's 2050 Energy Roadmap, these three targets represent the no-regrets options necessary for a cost-effective and sustainable energy supply in any given scenario.

Although the cost of renewables technology is decreasing very rapidly, the industry is not yet competitive in a multi-distorted energy market. Nuclear and fossil energy external cost are not fully internalized. Therefore, European governments need to give a clear investment signal to the industry by making a long term commitment. Energy market price signals remain distorted in favor of non-RES. Although external costs are partially internalized through the EU's ETS, fiscal instruments or support frameworks for RES, current market prices are still far from reflecting true cost. Fossil and nuclear energy are still receiving four times the level of subsidies of RES.

Requisites for the 2030 RES targets

In order to be efficient, these targets should be:

- Legally binding: The current difficulties to reach the indicative energy efficiency targets (and even to set up policies which would foster achievement) show the importance of binding targets. A binding target is the best way to encourage all Member States to commit to a sufficient level of renewable energy, particularly in emerging and developing markets. The market will have greater certainty for planning and investments: binding targets are trusted by private investors and are bankable. A binding renewables target will - by providing the long-term direction- decrease the costs of uncertainty, and facilitate the achievement of the 2030 targets in the most cost-efficient way.
- Ambitious: A share of 30% - as envisaged by the Commission in the Energy 2050 Roadmap – is definitely not ambitious enough. We support the Renewable industry call for a legally binding renewable energy target of a minimum 45% of final energy consumption in the EU by 2030. This would entail an annual reduction in fossil fuel demand of 556 Mtoe from 2030 onwards. According to European Renewable Energy Council (EREC), a minimum target of 45% by 2030 would provide gross employment of about 4.4 million in the renewable energy sector. The impact would also be of qualitative nature, revitalizing industrial areas and improving social cohesion. It would also improve Europe's security of supply, lower Europe's dependency on fossil fuel imports and massively reduce European energy bill.
- European and national: RES targets should be set at European level and declined in national legally binding targets. Having an EU target only would lift Member States from the legal responsibility to meet their target. Furthermore, renewable energy developments would be

concentrated in the most mature markets leading to disproportionate costs and public acceptance issues in these countries. National binding targets are also necessary to provide Member States with the flexibility they need to meet the target and allow for a fair effort sharing among Member States.

In addition to the regular infringement procedures for violating the European treaties, the Commission should have the possibility to impose direct penalties on the Member States which do not fully and timely implement the targets and policies of the post-2020 framework.

The Commission could also assess the necessity of interim binding targets on Member States. That would avoid the ongoing retrospective changes to national legislations as the Member States would not be able to wait for the end of the period to start their investments, as criticized by the European Commission in its progress report.

GHG target only would fail to achieve the EU objectives

A GHG target only – which with its current level even lacks ambition – has a broad economic impact, but bears the risk of incentivizing the harvest of low-hanging fruits and the re-introduction of old and polluting technologies such as coal and nuclear, thus negatively impacting the strong drive needed for a fundamental energy transition.

A GHG target is well complemented by a RES target, which stimulates technological innovation, thus speeding up the technological learning process and lowering the costs of the technology. The EU ETS, the technology neutral instrument meant to reduce emissions at European level, failed to achieve its objectives, with multiple causes for this failure (such as the impact of the economic crisis and a high influx of CDM credits).

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

Several instruments for several objectives

The Climate and Energy policy has several objectives, therefore several instruments are needed to achieve these objectives. EREF does not believe that there is inconsistency between the RES and GHG targets. However, we believe that the mutual reinforcement should be deepened by setting the RES goal first, then an energy efficiency target, then addressing the remaining emissions with a GHG target.

RES policy not responsible for the failure of the EU Emissions Trading Scheme (EU ETS)

The assumption according to which RES development undermined the carbon price is false; other reasons have led to the low carbon prices, such as: the over-allocation of allowances due to grandfathering and the continued impact of the economic crisis (currently a surplus of almost 1 billion allowances).

The impact assessment of the 2007 Climate and Energy package was accurately modeled taking into account various aspects and potential interactions of the different policies. The deployment of RES and its indirect impact on the GHG target for instance was intended. The 2007 impact assessment expected a carbon price of 25-30€/t by 2020 assuming that:

- The RES target of 20% by 2020 would be met, translating into an indicative 34% target for RES-Electricity, 25% for RES-heat and a binding target of 10% for RES in transport
- Electricity consumption and production would grow significantly
- The EU economy, including heavy industry sectors, would grow

However, with the economic downturn, the situation that led to the inefficiency of the EU ETS is that:

- Electricity consumption has gone down by 3% since 2008, instead of increasing as expected
- Heavy industry emissions decreased by over 30% in the last 5 years, due to reduced production
- Renewable electricity production is 1,74% above trajectory, reducing emissions approximately by an additional 39Mt beyond the RES Directive objective.

The European Commission estimates the EU ETS surplus to be around 2000Mt by the end of 2013, making clear that an additional 39 Mt reduction from RES is not to blame. Having over-achieved the RES-E targets is a great achievement in difficult times. This RES-E development represents lasting emission reductions, unlike most of the 2000Mt surplus. This surplus reflects the economic downturn – which has not been foreseen- and the (free) allocation methodology.

2020 targets: mutually reinforcing objectives to be continued

The existing targets, EE, RES and GHG, are delivering mutually reinforcing objectives and have to be continued. To further ensure that they work in a coherent and concerted way and be mutually supportive, we would suggest that priority should be given to a binding renewable energy target and a binding energy efficiency target, given their strategic long-term climate mitigation role and multiple benefits for European citizens and the economy. The GHG emissions target should then be defined ambitiously enough to take the resulting emission reduction into account and provide additional incentives for emissions reductions beyond efficiency and renewable energy.

- **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 CO2 reductions for passenger cars and light commercial vehicles?**

Targets for sub-sectors can certainly be effective, in particular if a sub-sector lags behind in terms of overall development or if a desired change is more challenging to pursue. Therefore, the EU should continue to set binding targets for the power, heating and cooling and transport sector. However at the same time Member States should be encouraged to exploit their respective total potential and to address non-economic barriers in those subsectors which seem to be the most appropriate.

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

Support for RES will be gradually phased out

It is important to stress that increasing the share of renewable energy by setting a 2030 target does not mean a continuation of existing support mechanisms for all renewable energy technologies. A coherent, stable and predictable 2030 framework, including an ambitious binding renewables target, will significantly minimise the costs of uncertainty, lowering the investment risk, reducing the costs

of capital and hence the level of support needed. Post-2020 an increasing number of renewable energy technologies will be able to move away from existing support mechanisms into a fair and properly functioning energy market for electricity, heating & cooling and transport.

Evolving national frameworks are the key to efficiency

Experience has shown that incentives for RES technologies require evolving frameworks, which should be tailored to national specificities and differing levels of market maturity.

The renewable energy sector has proven to be a very dynamic sector, with fast learning curve and effects of scale leading to rapid price decrease of the technologies. In the last years, many Member States have not taken these rapid changes into consideration in the design of their support schemes, leading sometimes to overcompensation and investment bubbles that then lead to retrospective changes to legislations. To avoid this situation and ensure the cost-effectiveness of support, some flexibility clauses should be integrated to the design of support schemes, from the outset, e.g. digressive support, regular revisions, use transitional periods etc.

In this context, the German FiT offers a good example of a transparent and sustainable policy which provides long-term investment security. One of its strengths – together with guaranteed payments and technology specific support – is the digression of FIT rates. This design element has led to a flexible policy that can quickly adapt to the rapid technological advances of renewable energy, thus triggering a reduction in the total costs of the policy and stimulating innovation.

While some exchanges of best practices could bring added value, harmonisation at EU level of support schemes' parameters and especially the nature and level of financial support would actually not deliver an adequate portfolio of renewable technologies. It support should be properly designed in order to reflect a whole set of country-dependent parameters and ensure a sustainable rate of return for potential investors.

- **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 can be captured by the headline targets for RES and EE. While a greenhouse gas target cannot ensure increased independence from imports, renewable energy targets, as well as efficiency targets, reduce Europe's use of fossil fuels, which are the main reason for Europe's energy import dependency.

Indeed, security of supply can be ensured by increasing the share of indigenous energy sources and decreasing energy import. In 2011, the EU's combined trade deficit was €150 billion. At the same time the net import bill for fossil fuels to the EU amounted to €388 billion, more than 3% of EU GDP, and more than twice the trade deficit. Analysis shows that the EU's fossil fuel demand can be reduced by about 550 Mtoe by 2030, representing approximately €370 billion. This is equivalent to the total combined energy consumption of Belgium, Germany, Latvia, Poland, the UK and Spain.

Another aspect to consider to ensure the security of supply is the technical diversity of energy sources. Renewable energy technologies include a large number of different technical options that would foster the security of supply.

4.3. Instruments

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

An EU industrial policy

EU Climate and Energy policy in the future should be addressed in conjunction with EU industrial policy and should recognise and support both current and future opportunities for the industry to provide low carbon technologies and solutions. To keep its front-runner advantage in developing RES on a commercial scale, a real industrial policy would strengthen further local investments. Such a policy should be based on:

- Implementing a transparent and efficient European Energy market that provides an attractive investment climate while respecting general competition rules, through the use of low interest loans and easy access to capital
- Ensuring investment security through a stable and favorable policy framework with long term 2030 binding renewable targets.
- Phasing out subsidies and R&D support to fossil fuel and nuclear as it distorts competition in the energy market.
- Promoting incentives at EU level to attract manufacturing investment
- Simplifying administrative rules by developing sustainable support schemes, streamlining administrative procedures and implementing efficient grid connection processes. All current electricity grid plans should be implemented.

Effective financing instruments

- Creating a European Renewable Energy fund that could provide guarantees to renewable energy projects
- Refocusing the European Investment Bank (EIB) investment policy as in contradiction with the EU policy on climate change, the EIB still finances fossil fuel power plants. The EIB's energy policy should be aligned with the EU's own 2020 and 2050 targets.

Efficient Research and Development policy

- Developing a strong R&D and innovation policy for RES in line with a fast-paced RES industry. Focus on innovation that can be applied quickly in the market.
- Developing skills education for RES jobs
- Implementing and financing the Strategic energy technology plan (SET-Plan), and extended it to other technologies such as renewable heating and cooling technologies. It should be extended post-2020 and be part of a comprehensive industrial strategy for renewable energy technologies.

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

National support mechanisms need to be differentiated per technology to ensure the cost effective deployment of a broad portfolio of renewable energy technologies.

Promoting a convergence of support schemes but no harmonization

Harmonisation of national support schemes is often referred to as a cost-efficient way of integrating RES, since energy would be produced “where it makes sense” from a resource point of view. Such an approach could even lead to sub-optimal solutions in terms of overall systems costs. As shown in the recent Greenpeace report *Battle of the Grids*¹, a more centralised deployment of renewables leads to higher infrastructures costs. The particular benefit of most RES technologies is their ability to join electricity generation and demand in a decentralized system. Therefore, while a convergence of support schemes is welcome in Europe, harmonising the type and the level of financial support would not deliver policy effectiveness. We welcome the Commissions’ support towards developing a set of general design criteria which promote convergence as announced for the guidance paper on support schemes to be published in 2013.

Avoid abrupt and retrospective changes to support schemes

The European renewable energy sector has been suffering for a few years from abrupt retrospective changes introduced to legislations in several EU Member States harming the industry and shattering investors’ confidence. These changes have the characteristic of impacting already existing investments.

Those retrospective changes are changing the revenue streams expected by renewable producers which they based their investments on. As a consequence, investors and producers are unable to pay back their bank loans. This has led renewable energy projects to bankruptcy in the past, thereby further destroying the trust and investment climate in the sector. Introducing retrospective changes immediately increases risk premium for new projects. Investors become reluctant to invest in the sector, seeing renewable energy projects as a risky investment. In the same way, banks become more cautious before financing such projects, lend money at higher interest rates and therefore increase the cost of capital, making renewable energy projects “artificially” more expensive.

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

A distorted internal energy market, designed for conventional energies

The current EU energy markets and infrastructures have been developed during state-owned times with centralized, incumbent energy monopolies/oligopolies. Renewable energy cannot be fully integrated into the existing distorted market, where market prices do not account for any negative externalities of conventional energy. While targets unlock private investments, national support for renewables compensates for the flawed market designs and grid codes, which were tailored for centralized conventional power stations. RES targets and support schemes enjoy a broad legitimacy, which has strayed out of focus due to the continuous discussion about energy system transformation costs.

¹ *Battle of the Grids*, report 2011 Greenpeace, based on research by EnergyNautics GmbH.

Concentrated markets, powerful incumbents and regulated prices are only a few of the impediments to the realization of a fully functioning European market. The objective of the renewable energy industry is to be competitive and cost-efficient in a market designed with regard to variable energy at its heart.

A failing EU ETS

In the absence of a functioning EU ETS which can internalize environmental costs and because of existing fossil fuel subsidies and governmental aid and missing fair liability regimes for nuclear energy, support for renewables is necessary to counteract market failures and to create a level playing field.

The EU ETS has not had significant impacts on the investments in the power sector in the next few years. With prices of less than €4/ton CO₂², it is far from the 2020 price spread desired by the European Commission, which ranges from €16.5 to €25/ton CO₂. Priority should be given to the short-term rescue of the EU ETS through the back-loading of allowances, as well as a phase out of the EU-ETS in 2020.

Massive hidden subsidies to the conventional energy industry

According to Dr. Faith Birol, chief economist at the International Energy Agency (IEA), fossil fuel subsidies amounted to 500bn US\$ worldwide in 2011. They are, according to him “public enemy number one to sustainable energy development”³.

Apart from fossil fuel subsidies, subsidies for nuclear power and weak liability regimes are another major distortion of market functioning and the level playing field. They should certainly not be accepted by the European Union. The transition towards a low carbon economy and the nuclear phase out must not become a pretext for further support of this unsustainable technologies which – despite decades of operation and experience – could not prove economic viability. In the contrary, investment in nuclear technology today will result in tremendous future cost burden for tax- and/or rate-payers for waste storage and dismantling of old power plants. And this goes even without taking into account the fact of no or much too low insurance responsibility of nuclear power plant operators.

EREF is therefore calling on the European Union to agree on a binding timetable for the phase out of subsidies to the conventional energy (fossil and nuclear). An important asset in this context would be a public database (transparency platform) which contains reliable information about all forms of support for the energy sector.

In addition, new public support for nuclear power should no longer be permitted, neither under the state aid regime nor for environmental and climate protection reasons. The envisaged United Kingdom’s contracts for difference including support for nuclear power with a guarantee for more than 40 years of support should therefore be ruled unlawful in the EU.

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

² EEX, Emissionsrechte, 2013

³ <http://www.ewea.org/blog/2013/02/fossil-fuel-subsidies-are-public-enemy-number-one/>

Like for renewable energy, long term targets on energy efficiency will stabilize the market and provide the sector with certainty, thereby facilitating the achievement of both 2020 targets and long term ambitions. Investments would be fostered and costs decrease most effectively.

Both renewable energy and energy efficiency have been identified in the EC Energy Roadmap 2050 as no-regret options. Combining renewable energy and energy efficiency measures provide the double benefit of increasing the renewable energy output and reducing primary energy use e.g. in buildings. A functioning EU-ETS in the short run and increasing CO₂-and energy tax rates as proposed in the energy tax directive draft by the EUC (2012) would also promote cogeneration of heat and power which potentials are far from being utilized in Europe yet.

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

Successful innovation and decarbonisation policy needs to focus on no-regret options and provide both a “demand pull” (via markets created) and a “supply push” (via R&D) to develop a broad portfolio of technologies.

Innovation driven only by carbon pricing would narrow the focus of technology deployment to the lowest cost, i.e. closest to market technologies, at the expense of the broad range of critical renewable energy technologies - which could be competitive in the midterm and which are necessary for the long-term cost-effective decarbonisation of the energy sector.

Post 2020 research and innovation policies at EU and member state levels

They will be critical to support the achievement of the 2030 framework. This means at the EU level:

- The EU should implement and finance the Strategic energy technology plan (SET-Plan).
- The SET-Plan should be extended to renewable heating and cooling technologies.
- The SET-plan should be extended post-2020 and be part of a comprehensive industrial strategy for renewable energy technologies.
- Energy research funding within the overall EU R&D funding has declined from 34% in FP1 to 7% in FP7. Future EU research and innovation policy should increase the share of energy in the overall EU research funding programme.

4.4. 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?**

Competitiveness should not be narrowed only to electricity prices: Europe can only become competitive if its economy grows again, if new opportunities for investment are created, if it creates new jobs and promotes its technology exports. The final objective of EU energy policy should be to replace fossil fuel imports with technology exports.

Investments, growth and jobs: The renewable energy industry is a recession-busting industry and a capital intensive industry which can provide a safe haven for investments in European growth. The EU renewables sector directly and indirectly employs more than 1.2 million people constituting an increase of 30% on the 2009 figure. By 2020, 2.7 million people in the EU will be employed by the renewables sector. Ambitious 2030 renewable energy targets could result in 4.4 million jobs in the EU.

Renewable energy is not only as a solution to climate change and a way to improve energy security, but also a way to boost economic growth and competitiveness; investment in the sector is a way to restore Europe's economy to health and stable legislative frameworks to promote the development of the renewable industry should be maintained and enhanced, even in times of austerity.

Energy Independence: In 2011, the EU imported 54% of its energy and this could increase to 70% by 2030. In 2012 Europe imported fossil fuels at a cost of €470Bn. Investments in renewable energy reduce the need to import fuels. The EU should aim at reinvesting energy import bills into the European economy. Investing in renewable energy can considerably contribute to improving Europe's energy independence.

Technology exports: Europe remains one of the world's biggest renewable markets. But China is now the biggest national market and the U.S., South Korea, Japan, India, are also increasing investments. Europe needs to keep its competitive edge in technologies in which it excels.

Fossil fuel subsidies continue to prevail, including in the EU: in 2011 the total amount of fossil fuel subsidies in the 21 EU Member States of the OECD was €26.5bn, €10.1bn (38%) more than global support to wind energy €16.4bn (IEA). Phasing out fossil fuel subsidies can help decrease energy prices and increase the competitiveness of RES.

- **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 proof that carbon leakage happened at all for the following reasons:

- Free allocation has been used to avoid carbon leakage.
- Most companies passed all or most of the carbon price onto their customers

As a consequence, the list of economic sectors considered as high risk of carbon leakage should be updated: Indeed, the list established by the European Commission assumed a carbon price of 30 euros a tonne while the carbon price is currently about 3 euros a tonne. The list features 60% of sectors representing 95% of industry emissions. Revising the list to take account of lower than expected carbon prices could mean that only 33% of sectors accounting for just 10% of industry's greenhouse gas emissions would fit the criteria, a CE Delft study⁴ indicates.

There may be exceptional cases of carbon leakage limited to new investments in power plants made in countries bordering the EU (e.g. Bosnia) and not in EU Member States (e.g. Italy) producing

⁴ CE Delft Report, 2011

electricity outside of the EU but importing it in the EU. However, such cases are limited by the fact that physical power lines are a bottleneck for importing electricity from outside Europe.

If such plans to build power stations in the Balkan for electricity imports materialise, there will be a need to include CO₂-emitting plants in the EU ETS to avoid carbon leakage. This should prove easy as the source of emission is well identified and quantifiable.

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

Energy costs bound to rise as the EU is at the end of an investment cycle

Investments in new capacity always have an effect on energy prices. With many of the EU's power plants due to be decommissioned in the coming decade, Europe needs to replace its ageing power system and this has a cost, whatever the technologies installed are.

The novelty with RES support mechanisms is their transparency and accountability. The effect of support mechanisms for renewable energy on energy prices therefore needs to be put in a context.

Fossil fuels as main drivers of energy price increases

Until today, fossil fuels have been the main drivers of energy price increases in the EU. The EU has little margin for manoeuvre to influence world trends in energy costs: It is a price-taker, not a price-maker.

Energy price increases in the EU in the past years were mostly driven by fossil fuel increases, in particular gas prices:

- According to an analysis by the UK Committee on Climate Change published in December 2011, over 80% of the increase in fuel bills since 2004 was unrelated to low-carbon measures, with funding for renewables accounting for less than 7% of rises.⁵
- In Germany, while the renewables surcharge will represent 19% of the German electricity price in 2013, this will still remain only 5% of the overall energy price paid by final consumers. Gas prices have increased steadily in the past years, and by 50% in 2012⁶
- In Denmark, with almost 30% wind penetration, support mechanisms only constitute 3.5% of the final electricity price paid by consumers^[2]

Renewable energy limits the increase of electricity prices via the merit order effect

Because wholesale market power prices are solely determined by marginal costs and because renewable power from solar and wind has almost zero marginal costs, when the wind blows and the sun shines, it pushes out from the market the power plants which use the most expensive primary energy resources, namely gas, coal and oil, thus decreasing the overall electricity price.

Stable legislative frameworks reduce energy prices

By enabling lower capital costs, stable legislative frameworks reduce energy prices. Political stability by the means of long term, stable but dynamic policies enhances investors' confidence and

⁵http://downloads.theccc.org.uk/s3.amazonaws.com/Household%20Energy%20Bills/CCC_Energy%20Note%20Bill_bookmarked_1.pdf

⁶ BMWi German Economics Ministry

^[2] Danish Ministry for Climate and Energy

minimizes the risk premium for financial investors which is critical for capital intensive technologies such as renewable energy.

- **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?**

EU benefits from climate and energy agenda unlinked to international agreement

There is a need to decouple discussions and decisions about the EU climate and energy framework from the international climate negotiations. The EU climate framework helps to price technologies at their true cost for society and to limit the EU dependency for fuel imports, benefits that are disconnected from any international framework. HEAL recently estimated that cost for EU coal fired plants at €43bn/year. It is not linked to any international commitment.

Competition for technology leadership

Dedicated and binding policies for renewable energy helped the EU to establish a first-mover advantage in global markets and made it a front runner in renewable technology innovation. Europe used to be and still remains one of the world's biggest renewable market. But actions of other countries should not be underestimated. China already has a CO2 reduction target, the US is talking about it. In 2012, 118 countries had renewable energy targets in place (in 2010 only 109 countries) and engaged in a competition for technology leadership in tomorrow's markets. European policy-makers should ensure that the EU is fully equipped for this competition, even in times of austerity. Europe needs to keep its competitive edge in technologies in which it excels.

- **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)?**

By providing the necessary long-term predictability of market volumes and direction, a binding 2030 renewables target will decrease the costs of uncertainty while at the same time facilitating the achievement of the existing 2020 targets in the most efficient way.

Investments in the energy sector have become significantly more difficult due to the uncertainty about the mid and long-term policy perspectives. Policies which ensure stability and predictability mitigate risk and increase the confidence of market actors. This in turn reduces the cost of capital and helps to unlock private investments.

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

Necessity of an industrial strategy

The EU should stimulate the innovation capacity of the renewable energy manufacturing industry by developing and implementing an industrial strategy. The EU should bridge market and innovation by looking at the whole supply chain for each sector and focusing on manufacturing. As part of this

industrial strategy, the EU should develop flagship projects of European manufacturing based on Member States cooperation on industrial policy e.g. similar to the development of Airbus, hereby providing international visibility for the EU on the sectors of tomorrow.

EU ETS auctioning revenues to support climate investments

100% of the EU ETS auctioning revenues should be earmarked to climate mitigation and if needed, adaptation. It is the only way to ensure that this revenue stream will be used to price CO₂ and reduce emissions. The EU ETS should use all its intrinsic tools to reach that objective. Auctioning revenue is one of these tools. The current commitment by EU Member States to use 50% of that auctioning revenue for climate mitigation and adaptation is welcome, but does not go far enough. It integrates several loopholes, not least its non-mandatory nature.

At least part of this revenue should be used and managed at EU level. This would ensure a better traceability of used funds and transparency of allocation process. The “NER300” scheme is a good example of how revenues can benefit the EU at large, instead of a single Member State. A repetition of such a programme, albeit with some modifications to ensure a closer reflection of current technologies, should certainly be considered.

- **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 Green Paper rightly stresses the role of Europe’s indigenous energy resources. It however, fails to acknowledge that energy saving and renewable energy are our only significant and long-term indigenous energy resources, to achieve greater energy independence and realise major macroeconomic benefits, including new local jobs, reduced sovereign debts and EU industrial leadership. Moreover, renewable energy sources are the only indigenous sources in which the EU has a competitive advantage.

- **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?**

Improved security of supply will be improved if the EU:

- Increasingly invest in renewable energy and energy efficiency: this will help ensure a diversified portfolio of technologies and hence improve security of supply.
- Ensure that a sufficient infrastructure, grid and interconnectors are in place. This increased grid and interconnection capacity could be used for balancing purposes. Greater balancing areas will help ensuring better security of supply.
- Move away from national generation adequacy assessments to an EU integrated system adequacy assessment that comprises all forms of flexibility: generation, demand, interconnection capacity and, in the future, storage is required.
- Promote demand response and storage.

4.5. 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?**

Targets should be set at EU level, broken down at national level and be binding upon Member States under an effort sharing calculation. Member States are thus given the flexibility to meet their targets with the technologies they prefer and in the sectors they prefer according to their renewable energy potentials.

Cooperation mechanisms should be reinforced to facilitate target achievements while ensuring a fair distribution of efforts among Member States.

- **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 Renewables Directive includes cooperation mechanisms available to the Member States: statistical transfers, joint projects and joint support mechanisms. Norway and Sweden implemented their joint support mechanism over several years. This was made possible by the fact that these two countries have very similar and integrated electricity markets. The industry would welcome an approach building on this bottom-up regional integration.

Based on the experience gained until 2020, the EU will be able to draw lessons and develop further these cooperation mechanisms post-2020. Cooperation mechanisms together with a target-sharing (based on efforts by all Member States and taking GDP into account hence based on a fair-effort sharing) will promote cooperation among Member States in the most cost-efficient way.

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

Creating a European Renewable Energy fund could provide guarantees to renewable energy projects

In addition, it is necessary to refocus the European Investment Bank (EIB) investment policy as in contradiction with the EU policy on climate change, the EIB still finances fossil fuel power plants. The EIB's energy policy should be aligned with the EU's own 2020 and 2050 targets.

The European Commission should fully explore with the European Investment Bank and national public institutions possibilities to dedicate funds and innovative financial instruments within the EU budget towards the financing of energy and climate priorities for 2030. National green public banks

should provide additional loans to the renewable energy sector possibly on the model of the German Kreditanstalt für Wiederaufbau (KfW).

Conclusion:

A well-designed, integrated energy and climate policy framework for 2030 – with an ambitious and binding RES target playing a central role – would have a number of economic and social benefits, such as:

- **It is effective and cost-efficient** – Conventional energy technologies have benefitted from decades of direct and indirect subsidies, as well as under-priced externalities. In the case of nuclear energy for example, instead of leading to cost reductions, these subsidies have kept the price artificially low and distorted the market. On the other hand, renewable energy technologies – which are still at an early stage in their learning process and have a lot of development potential left – have already experienced tremendous innovations and cost reductions. Large scale market deployment – driven by ambitious targets and policies – has been essential in unlocking this potential and should be continued if we want to reduce the long-term costs of decarbonization.
- **It promotes green growth** – In 2011, the European economic activity related to the renewable energy industry was valued at more than €137 billion.
- **It offers a significant potential for job creation** - In 2012, more than 5 million people worldwide and more than 1 million people in the European Union were employed in the RES sector.
- **It fosters competitiveness** – As opposed to conventional energy, the prices for renewable energy tell the truth – there are no carbon or external costs that require subsidizing. A policy approach which sets renewable energy at the center of our energy supply system and creates a level playing field is needed to diminish the power of the incumbents, to allow the ownership structure to diversify and to combat the existing market distortions.
- **It enhances Europe's technological leadership** – Due to the early adoption of ambitious and binding targets, European companies are world leaders in renewable energy technology. A continuation of this policy approach will lead to a further technology diversification which will allow European companies to maintain and strengthen their competitive edge.
- **It replaces fossil fuel imports** – It is assumed that in 2012 the EU paid more than €500 billion for the net import of fossil fuels. An ambitious target of 45% RES use in gross energy consumption by 2030 as proposed by EREC would reduce the European fossil fuel demand by approx. €370 billion annually.