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# Submission by the German Federal Environment Agency (Umweltbundesamt) regarding the Green Paper "A 2030 framework for climate and energy policies"

We welcome the possibility to submit considerations at an early stage of deliberations regarding the 2030 targets. Some considerations also concern the parallel stakeholder consultation regarding the international agreement post 2020. Our comments are submitted in the format of a summarized text, oriented to the questions of the Green Paper. Find below our views, comments and additional information on the future framework for climate and energy policies.

## 1. Experiences and important lessons

To achieve the EU's climate and energy objectives we need a stable and long-term policy framework including ambitious long-term targets for climate, renewable energy and energy efficiency.

The earlier decisive steps are taken towards reaching the mitigation goals, the lower the long-term costs of climate change will be. Also, 2030 goals will not be applicable to the Kyoto protocol review process. Therefore, we would encourage the continuing active consideration of structural options to strengthen the ambition of EU climate policies already in the timeframe until 2020. The objective should be to get the EU emission reduction pathway to shift towards the long term necessary reduction path as early as possible. Therefore effective measures to the current Emission Trading System´s surplus serves as an opportunity to increase the ambition already before 2020 (see below, Emission Trading System (ETS) and 2030 Framework).

As to renewable energy, binding long-term targets have proven key success factor for driving investments and cost-reductions in renewable technologies. This was also concluded by the Commissions Assessment on target achievement which regards the binding target the key driver for RES deployment across Europe compared to the unsatisfying experiences with indicative targets for renewables as under the 2010 framework. This can also be seen from the experience with indicative 2020 target for energy efficiency which has led to many member states missing their indicative target as well as a comparatively slow uptake of technologies and development in the respective sectors.

As regards the framework for instruments, continued but decreasing support for RES will be necessary also after 2020. The EU RES framework should aim for a diversified deployment of renewable energies with respect to both, the types and locations throughout all of Europe since this enhances steadiness and reliability of RES generation across Europe.

Member States will follow different pathways as regards technology mixes in the light of Article 194 of the Lisbon treaty. Nevertheless, the national energy policies will have to be further converged and aligned if we want to achieve the long term climate targets. The EU energy roadmap for 2050 showed that there are certain no regrets for all Member States. This applies most and for all for a RES share of at least 30% by 2030 and increasing energy efficiency.

This is also true for certain principles of RES support such as continuous digression of support and increasing market responsiveness of renewables.

## 2. Targets for 2030: level and degree of legal stringency, consistency

For the moment the EU adheres to its current unilateral climate target of 20 percent below 1990 emission levels by 2020 which sends out an extremely weak signal both to the international community and to the actors involved in the EU itself. It calls the credibility of the EU's climate change mitigation efforts into question, for even the EU's own projections show that this would remove any incentive for continuing those efforts. Raising the EU 2020 climate target is therefore crucial, with regard to both, efforts within the EU and vis-à-vis the international community. That is why the EU must now raise its 2020 climate target to a reduction of 30 percent by 2020 compared to 1990.

Note: current German Government position is to support an EU 30 percent target in 2020 based on the national 40 percent target if other member states also take appropriate efforts.

The formulation of a more stringent 2020 target would be preferable in order to enable the long term emission reduction of at least 80 percent until 2050. At the very least, the targets for 2030 should be adopted soon and in a stringent manner.

### *Emission Trading System (ETS):*

Ambitious long term targets to be adopted before 2020 would provide an important signal for the EU ETS, as this would imply reduced caps at least post 2020, implemented e.g. by a significantly more stringent linear reduction factor for the EU ETS. For the current Effort Sharing sectors, emission targets are also necessary prerequisites to improve and monitor policy instruments.

However, while a more stringent linear reduction factor pre 2020 is desirable in our assessment, it would not to remove per se the surpluses from the markets in a timely manner. With no removal of the surplus it is likely that the reduction targets for 2020 and 2030 will be reached on paper but give no sufficient signal for reduction, making it harder to get back on the long-term reduction path.

### *2030 Framework:*

With the 2030 climate and energy framework the EU has the unique opportunity to set a strong impulse into the international debate on climate policy, in particular in regard to a comprehensive global post2020 climate agreement under UNFCCC. Therefore this framework must include a binding ambitious target for green house gas emissions, which should be in line with the higher end of the long-term goal for 2050, which was given by AR4 of IPCC in 2007 for industrialized countries.

In the context of the respective Impact Assessment of the EU's 2030 framework a number of political and technical issues should be considered more comprehensively: Recent studies[1],[2] show that a "fair share" of 2030 ambition for the EU would probably more ambitious than the mitigation corridor which was elaborated as cost-efficient in the EU COM Impact Assessment of the 2050 road map in 2011.

Also this mitigation corridor of 40 to 45 percent identified as cost optimal lies significantly above a linear reduction path of savings in relation to targets in relations to the baseline between 2010 and 2030[3], making more stringent reductions later on necessary (1 percent of reductions per year on average between 1990 and 2030, 2 percent per year between 2030 and 2050). The possibility must be taken into consideration that the later part of the emission reductions after 2030 will be more expensive and technologically harder to implement than the first half. A transparent analysis of the assumption that such a distribution of reductions over time would be economical is needed, especially regarding the assumptions of the underlying models regarding technological progress, investment cycles and degressive costs as 2050 approaches. This assessment should consider more ambitious start and end points, i.e. (2020: -30%; 2050: -95%), of the respective emission pathways. Potential lock-in effects that can still be avoided by prudent short-term policy changes should be highlighted and their avoidance should be assumed in at least one scenario. Also, in not moving faster until 2030, important early mover advantages would be missed. Therefore it makes much sense to adopt steeper reduction paths for the two decades until 2030 than for the decades from 2030 until 2050 and beyond. Therefore an option is advisable a reduction target of at least 50% until 2030.

Based on the existing energy saving mitigation potentials the overall target of greenhouse gas emissions reductions and possible energy saving targets should reflect the energy saving potentials of the sectors Industry, Households, Trade and Services as well as electricity and fossil fuels.

### *Renewable Energy System (RES) Target:*

It is key that the 2030 framework also contains a binding RES target.

A THG-reduction target alone doesn´t give the necessary long term investment signals for renewables.

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[1] Höhne, N. et al: The next step in Europe's climate action: setting targets for 2030; Ecofys, Policy Brief, 2013

[2] Hagemann, M. et al: Description of the effort sharing approaches as presented in the Ecofys' policy brief: "The next step in Europe's climate action: setting targets for 2030" Ecofys, 2013

The EU energy roadmap 2050 clearly shows that in all scenarios a minimum-share of 30 percent RES across the EU is necessary in order to reduce the THG emissions by 80-95% by 2050 (up to 1990). This means that the challenges of increasing shares of fluctuating electricity generation from renewables will have to be faced by all Member States anyway. A minimum share of 30% of RES therefore is a no-regret-option for all Member States irrespectively of what energy mix they rely beyond. Thus, solutions should be found in a transparent and coordinated way allowing for synergies.

The experience with the indicative 2010 target as well as with the indicative energy efficiency target showed that a binding target is necessary to ensure the necessary long term investments. This is also important to avoid lock-in-effects which will lead to much higher "regret-costs" in the long run.

An EU-RES target will also help to ensure a diversified RES deployment all over Europe thereby making use of many different sites making use of as much resources as possible. This will increase steadiness and reliability of RES generation across Europe and thus energy security from RES if also grids will be further reinforced, markets further coupled and liberalized and Renewables become more market responsive.

### *Energy Efficiency Target:*

EU is struggling to meet its ambition concerning energy efficiency. The consequence however should not be to abandon ambition but to strengthen efforts. Especially since efficiency plays a vital role for innovation, security of supply and competitiveness. The Impact Assessment should therefore include a range of possible binding efficiency targets.

Studies are available which show potentials between 21 percent - 47 percent primary energy savings compared to the PRIMES 2009 baseline. The energy roadmap is at the lower end. A target of around 30 percent primary energy savings compared to 2009 baseline seems ambitious enough to drive innovation and yet well below a target comprising the whole economic potential.

A clear roadmap for efficiency and renewables can contribute to predictable price developments in the ETS as well.

### *International context:*

The reduction path should refer to internal reductions in the EU. However, international co-operation might continue to play an important role also in the form of international market-based co-operation. The access to international mechanisms should be assessed regarding their potential to enable reductions beyond the necessary EU internal reduction paths for reasons of international solidarity. Experience has shown that international credits can be regarded as a functional equivalent to an enlarged cap. Based on this principle, the effects of options for the use of offsets and other international quantified mechanisms with access to the EU carbon markets might be assessed in a transparent manner. This includes transparency of model assumptions regarding the convergence of international carbon prices. In order to enable certain minimum reductions internally even in the event that windows for international demand are opened

in the EU ETS, those could be designed as x percent (domestic target, e.g. 40 percent or above) + y (international solidarity target, e.g. 10 percent).

*Non-$CO_2$ greenhouse gases:*

Besides reductions of $CO_2$-emissions, reductions of Non-$CO_2$ greenhouse gases, e.g. fluorinated greenhouse gases, should not be neglected.

### 3. Legal certainty, flexibility and innovation

Companies require a political-regulatory framework for energy policy to get certainty and liability for planning and investment. That should be provided by:

- Quantitative, and binding medium- and long-term-targets;
- durable and reliable policy also under changing circumstances, for instance changing energy markets. That creates a predictable frame for actors in the markets to react flexible;
- avoidance of economic adaption frictions; for instance continuously and projectable long-term development of the renewable energy sector to create liability for planning and investment for renewable energy industry sectors and their suppliers. The aim should be to create a solid technical and industrial basis; no stop- and go-policies; no investment for coal-based power plants; avoidance of lock-in affects by deficient fossil-based long-term investment;
- durable financial promotion of energy efficiency measures.

A legally binding future EU-framework in the form of EU-legal acts will provide such a reliable basis for companies to create and keep competitiveness, and thus would be the preferable way forward for the EU climate and energy policy.

*Corrections in the ETS:*

The EU ETS should be designed in a way that in the future no structural surpluses can accumulate. Options for corrections should be considered when underlying assumptions and projections for determining the cap turn out to deviate from actual economic developments in order to ensure the effectiveness of the EU ETS. If based on predictable and transparent criteria, this could contribute to long-term investment certainty for market participants, especially for low carbon technologies. The long-term internalization of external costs of emissions by market mechanisms must be sufficiently predictable. A situation where the effects of market mechanisms become negligible so that remaining fundamental external costs of emissions are not internalized should be avoided. Options for supply side measures enabling reactions to unforeseen demand should be assessed in a transparent and criteria-based manner. Such mechanisms could be explicitly price-based (with implicit consequences for the quantities traded on the markets) or, preferably, explicitly quantity-based (with implicit consequences for market prices). The options could also include variations in the quantities accessible via international mechanisms based on specific criteria.

## 4. Assessing interactions and consistency of instruments

In general, the consistency of the targets and instruments is very important. It should be further assessed how this can be optimized. Especially the cumulative effects of reductions on the supply side (e.g. renewable energies) and on the demand side (e.g. energy efficiency) should be assessed regarding their potential to address specific financial and non-financial barriers for implementing emission reduction and to strengthen the level of ambition.

An EU-wide RES target helps to ensure consistency with the ETS and the Climate target. In the 2020 package the RES pathway driven by the RES target and RES support schemes was taken into account when defining the carbon reduction pathway driven by the ETS and consequently the allocation of certificates. The current RES deployment across Europe remains within this calculated pathway. Thus, the current low certificate price is driven by other factors, such as the economic crisis. Without an EU-wide RES target, ensuring consistency of RES support and the ETS will be much more difficult since there will be no EU wide RES pathway which can be taken into account when assessing the cap and the amounts of certificates.

Interactions of international instruments, e.g. the combination of climate finance and market based mechanisms, should also be assessed in the context of considerations for the post 2020 international agreement. In some cases, the combination of means for specific measures from different sources might be necessary if each source on its own would be insufficient but additional if cumulated with other sources. The options to co-ordinate contributions of climate finance in a criteria-based way with the use of quantity-based international market mechanisms should therefore be assessed, e.g. by flexibly adjusting direct financial contributions to remaining cost gaps for defined technologies.

**A reform of Energy subsidies** is needed to promote the use of renewable energy and energy-efficient technologies. On the one hand it is necessary to eliminate market distortions by phasing out subsidies which encourage the use of fossil fuels for instance subsidies for the use of company cars or for coal mining. On the other hand subsidies should be granted for the market introduction and diffusion of climate technologies.

Also the debate on energy security and capacity markets/payments is to be seen in the context of consistency of instruments.

New subsidies for capacity payments should be considered as last option since this would massively hamper the flexibilisation potentials of the internal market and also hinder the consistency of instruments. Flexibilisation of the whole energy system both on the supply as well as on the demand side will be key to ensure energy security in an electricity market determined by increasing shares of renewables. Therefore, the EU-wide market price signal is necessary to give incentives for innovation and developing new concepts. Thus it will be key to explore and make use of all flexibilisation options of the internal market first before considering new subsidies. These options are most and for all: liberalization of the energy market, EU-wide grid reinforcement, demand-side-management, making renewalbes market responsive, increasing energy efficiency.

Another very important issue for ensuring energy security is a diversified RES deployment on as many different sites as possible. This will increase steadiness and reliability of RES generation

across Europe and thus energy security from RES if also grids will be further reinforced, markets further coupled and liberalized and Renewables become more market responsive.

For the same reason the EU- framework for RES should aim for increasing convergence of national energy policies instead of full harmonization of support schemes. A uniform support level across Europe does not seem to be a suitable option since it would concentrate deployment only on the best sites thereby increasing fluctuating effect of RES generation. And this would lead to oversubsidisation of best sites when exploring less favourable sites becomes necessary for achieving the targets.

Therefore, the EU framework should concentrate on aligning main principles of national support schemes such as continuous digression of support and increasing market responsiveness as the most important principles of ensuring consistency of RES deployment with the internal market.

However, the EU-framework for RES support should allow Member States to adjust their support to national potentials in order to ensure for a diversified deployment all over Europe and avoiding over-subsidisation.

For the same reason, the EU-wide RES target should be translated into binding national targets.

The cooperation mechanisms as laid out under Directive 2009/28/EC offer the necessary flexibility for Member States to fulfill their targets. They allow exploring foreign potentials as supplementation to the national RES-deployment which avoid oversubsidisations and allow for tailored solutions addressing the varying challenges of cross-border support. The cooperation mechanism are being used rarely so far. However, the main reason for this is the rather flat indicative target trajectory in the first years. Nevertheless, the incentives for making use of the cooperation mechanism should be improved.

## 5. Sectoral distribution and specific measures

**In general, an economy-wide target for greenhouse gas emission reductions should be the main goal.**

**In general, an economy-wide target for greenhouse gas emission reductions should be the overriding goal. The RES and efficiency targets should be derived from the THG target.**

In any case, potential sector-specific targets should best be implemented on a national level, since member states have a more thorough understanding of their emission sources. In addition, potential sector specific targets would have to take into account possible future interactions within the energy system, e.g. the direct or indirect use of temporary electricity surpluses from renewable sources for mobility or heating. Greenhouse gas emission targets on the European level should not impede additional or stronger national targets or efforts for emission reductions. Therefore flexible and transparent mechanisms should be implemented on how to adapt climate targets to new circumstances.

One useful sector-specific target would be self sufficient energy supply for municipal sewage treatment plants with capacities larger than 10.000 inhabitant equivalents.

In general, all **sectoral targets** have to be assessed and monitored to ensure that they do not lead to environmental or social degradation in the EU and beyond.

An improvidently conceived renewable target for the transport sector, for example, would lead to a large scale provision of biofuels and subsequent environmental problems and conflicts, e.g. direct and indirect land use changes.

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For the **field of energy related products** the Top Runner or Best Performer Approach provides a broad concept to focus on significant higher energy – and especially electricity – efficiency improvements. An EU Best Performer Approach could be established by improvements of existing product policy instruments. A key issue of a functional Best Performer concept is:

Staged Minimum Energy Performance Standards (MEPS) of the implementing measures of the Ecodesign Directive shall not primarily focus on the Least Life Cycle Costs (LLCC) but shall aim for the highest feasible energy efficiency level as long as the life cycle cost does not exceed the life cycle cost of the base case (highest feasible efficiency without exceeding base case life cycle cost, BLCC). For this purpose, in particular the provisions in Annex II of the Ecodesign Directive (2009/125/EC) and the standardized assessment methodology applied in the preparatory studies for the Ecodesign Directive need to be changed. This approach would however still be in line with the legal corridor provided by article 15 (5) (c) of the Ecodesign Directive.

Due to a not negligible percentage of emissions from the use of fluorinated greenhouse gases as refrigerants in energy related refrigeration and air-conditioning products, this aspect should be considered in all outstanding lots of the Ecodesign Directive.

## 6. Cost-effective energy savings

Most desirable would be that energy savings are fast-selling, as they should be economically profitable. There are several measures to make energy savings more cost effective: Abolishing environmental harmful subsidies and providing information to consumers, which addresses a market failure, makes further energy savings more cost effective. Increasing qualifications is another way to leverage energy savings.

Policy action is needed to reach an ecological fiscal reform that internalizes climate and other environmental externalities. A recent study of the International Energy Agency (IEA) shows the significant positive climate effects of abolishing energy subsidies. Phasing out fossil fuel subsidies gradually allows for GDP-neutral climate protection up to 2020. Moderate additional efforts compared to the IEA new policy scenario would contribute 12 percent of the required emission reductions to keep the 2 degree target alive.[4]

Environmental harmful subsidies, which are in most cases closely related to energy use, also play a crucial role in Germany, since they amount to 48 billion Euros in 2008.[5] E.g., companies from the manufacturing, agriculture and forestry sector are charged only 75 percent of the sta-

[4] IEA (2013): Redrawing the Energy-Climate Map, http://www.worldenergyoutlook.org/media/weowebsite/2013/energyclimatemap/RedrawingEnergyClimateMap.pdf

[5] Federal Environment Agency (2010): Environmentally Harmful Subsidies in Germany – Update 2010

tutory tax rates for electricity, natural gas and LPG and heating oil. Low statutory tax rates reduce the incentives to save energy and invest in energy saving technologies. Energy tax credits could be justified for companies facing international (price) competition to avoid carbon leakage. However, a differentiation between companies that have high specific energy costs and face international competition does not occur. Examples are the so called "Spitzenausgleich" for environmental taxation or the tax relief for certain energy-intensive processes.

Providing information helps to increase the awareness of energy saving potentials. It is particularly important in the housing sector. It can be done by detailed heating bills, energy use classification of buildings, or electric appliances. Also better communication of co-benefits of renovated buildings raises awareness of energy efficient solutions. Increasing awareness is not enough. To support consumers in energy-saving renovations, professional advice and guidance plays a crucial role. It can help to focus on comprehensive energy upgrades instead of minor short term improvements. In the medium and long term also education, training and certification of skilled crafts and trades improve the quality of energetic renovation and determine whether they are simple, successful and efficient.[6]

## 7. Promoting job creation, growth and competitiveness

Ambitious climate protection creates opportunities for considerable economic advantages. A clear signal from policy can generate incentives for investment within the EU and encounter the weak growth forecasts and cope with the increasing regional imbalances.

Some studies confirm positive effects for employment in the dimension of 5 million[7]jobs. They show that climate protection generates working places in spite of costs.

Investment costs up to 270 billion Euro per year for decarbonisation (according to EU Commission) are considerable, having in mind, that these are 1.5 percent of the EU GDP in addition to the 19 percent EU GDP/2009. Altogether this investment is profitable. Studies show, that about 90 percent of all saving measures are economically rewarding, because savings in energy costs are higher than the investment costs needed[8].

A policy promoting higher energy efficiency, reduces on the other hand the dependency on imports of fossil energy sources. Facing, that prices for fossil fuels will increase in future, it supports the competitiveness for future markets as well. Thus the investment in energy efficiency pays off in impulses for employment.

The extension of the renewable energy sector also will generate a positive development. In Germany between 2004 and 2011 employment could be doubled in this field from 160.000 up to 382.000 jobs; 70.000 up to 90.000 jobs in 2009. By 2020 is predicted, that lost jobs in energy-

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6 IÖW (2011): Employment effects and needs for vocational training and qualification in the field of energy - saving building refurbishment, http://www.umweltdaten.de/publikationen/fpdf-k/k4148.pdf

7 Jaeger, C; Paroussos, L.; Mangala-giu, D.; Kupers, R.; Mandel, A. und Tàbara, J. (2011): A New Growth Path for Europe. Generating Prosperity and Jobs in the Low-Carbon Economy. http://www.pikpotsdam.de/members/cjaeger/a_new_growth_path_for_europe__synthesis_report.pdf

8 Boßmann, Tobias; Eichhammer, Wolfgang; Elsland, Rainer (2012): Concrete Paths of the European Union to the 2°C Scenario: Achieving the Climate Protection Targets of the EU by 2050 through Structural Change, Energy Savings and Energy Efficiency Technologies. Fraunhofer Institute for Systems and Innovation Research (ISI), Karlsruhe, http://www.isi.fraunhofer.de/isi-en/e/projekte/bmu_eu-energy-roadmap_315192_ei.php.

intensive branches will be compensated by new created. In the building sector investment of 20 billion Euro per year by 2020 will create 500.000 jobs; in the energy sector 400.000 by 2020 in addition[9].

### *Subsidy reduction:*

Taxes on services using climate and environment are a source of revenues for the state and create incentives for climate protection and energy savings. On the other hand subsidies distort competition, resulting in suboptimal functioning of input and product markets and leading to market results that are environmentally inefficient or harmful.

Public-sector finances would benefit very considerably from a reduction in these subsidies. Environmentally harmful subsidies place a double burden on public-sector finances: today, due to increased state expenditure and reduced state revenue, and tomorrow, due to increased costs for dealing with the harm done to human health and the environment.

In Germany subsidies are estimated totalling a good 48 billion Euro have to be classified as environmentally harmful[10], having in mind, that their proportion is hardly quantifiable. This sum consists largely of federal subsidies. It also includes subsidies which the German government grants jointly with the *Länder* – in the context of Community taxes and co-financing – or in which it participates under framework legislation.

Subsidies of 17.7 billion Euro are provided to assist the energy supply and use sector. This applies not only to extraction of the energy sources (e.g. coal and lignite), but also to energy generation. The subsidies lower the price of energy and thereby reduce the incentive to make economical and efficient use of energy. This results in higher energy consumption, combined with greater energyinduced environmental pollution.

In the transport sector, subsidies amounting to 23 billion Euro contributed to environmental pollution in 2008. Nearly half the environmentally harmful transport subsidies, 11.5 billion Euro, were due to air transport. Other major items of quantitative significance are the energy tax reductions for diesel fuel, the distance- based income tax allowance, and the privileges in the taxation of company cars.

The construction and housing sector received environmentally harmful subsidies totaling 7.2 billion Euro in 2008. The subsidies reduce the cost of building new housing or developing new industrial, commercial and transport areas. The state funds tend to strengthen the incentive to build, and in most cases they do not differentiate between previously used land and newly developed “greenfields” sites.

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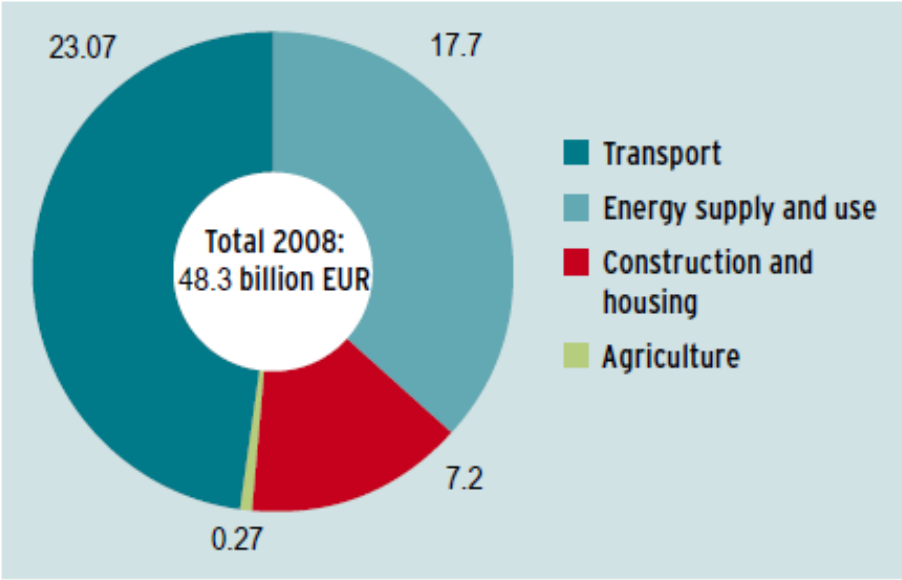
[9] EU Komission (2011) Impact Assessment. A Roadmap for moving to a competitive low carbon economy in 2050, S. 90

[10] UBA (2010b): Umweltschädliche Subventionen in Deutschland – Aktualisierte Ausgabe 2010, Dessau- Roßlau.

**Figure: Environmentally harmful subsidies – distribution according to sectors (in billion Euro)[11]**




## 8. Evidence for and minimization of carbon leakage

Scenarios investigating unilateral climate policy up to 2020 find an average leakage rate of 12 percent with a minimum of 5 and a maximum of 19 percent. This is the result of a model comparison[12]. Thus, carbon leakage is an issue for climate policy, but it does not undermine the general effectiveness of unilateral mitigation efforts. The political debate focuses on carbon leakage in energy intensive industries. However, it has to be kept in mind that the main channels of carbon leakage are international energy markets (oil, coal and gas) and not commodity markets[13]. Thus, rather than measures like border tax adjustments or free allocation it is a global climate treaty that can address the problem of carbon leakage.

One also has to bear in mind the impact of global trade on emissions. Even though it is difficult to clearly identify drivers and adequate policy responses, it is important to be aware of unbalanced carbon flows in the global economy. In many industrialized countries greenhouse gas emissions connected to consumption are much higher than reported according to IPCC guidelines[14].

European climate policy needs to re-evaluate the risk of carbon leakage and adapt its policy answers, especially in the EU Emissions Trading System. For energy-intensive and trade-exposed industries a more realistic approach is needed to focus free allocation on critical industries.

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11 UBA/BMU (2012): Umweltwirtschaftsbericht 2011

12 Böhringer, Rutherford, Balistreric (2012): The Role of Border Carbon Adjustment in Unilateral Climate Policy. Insights From An EMF Model Comparison, http://www.rff.org/Documents/Events/120904_BCA_Workshop/border_carbon_adjustments_paper.pdf

13 IPCC (2011: 622): TAR, WG III

14 Vgl. u.a. Peters, Minx, Weber and Edenhoferc (2011): Growth in emission transfers via international trade from 1990 to 2008, http://www.pnas.org/content/early/2011/04/19/1006388108.full.pdf+html

As a recent study points out[15], due to flawed assumptions free allocation is much too generous for specific industries. EUA-prices were assumed to be 30 Euro per allowance – which has turned out to be much too high. The Commission's review of the industries subject to a carbon leakage risk, which is scheduled for finalization until 31 December 2014, should more carefully consider realistic assumptions.

It is also necessary to account for progress in climate policies in countries outside the EU-ETS. Step by step a level playing field has been created to a number of countries, so that trade to those countries cannot be considered as a channel of carbon leakage. This needs to be taken into account when calculating the intensity of international competition with unregulated foreign industries.

## 9. Influencing drivers for energy costs

In the past two decades the import prices of crude oil, natural gas and coal where rising. The financial crisis of 2007–2008 caused a short term decline in the demand for fossil fuels. With the recovery of the world economy, however, the prices pulled back sharply. In the long term, limited volumes of fossil fuels together with increasing global demand will lead to further price increases of these raw materials. According to IEA projections for the EU there is a tripling to quadrupling of the annual import bill for fossil fuels from 2000 to 2035 to over 600 billion U.S. dollars.[16] This is the case despite the assumption of considerable improvements of energy efficiency.

However, there are effective ways to lower the impact of rising fossil fuels prices on energy costs. Despite the fact Europe is rather resource-poor regarding fossil fuel reserves, more renewable energies and energy efficiency are the two key pillars of a sustainable and economically feasible energy system. Rather than solely focusing on short term energy prices, Europe should focus on energy costs per unit of output. It is quite established with regard to the labor market that a suitable indicator for international comparison are unit labor costs rather than wages. This also should hold for energy, where an indicator of unit energy costs should be developed.

This could help to bring the example of the increasing shale gas production in the U.S. into proportion. The current over-supply of unconventional gas in the U.S. leads to a collapse of the local gas prices on the spot market. Since January 2010, prices at the spot market have fallen by up to two thirds (peak April 2012)[17]. In contrast, the price for imported natural gas in the EU has increased over the same period. The enormous difference in energy prices, however, hardly influences competitiveness. Since 2010 the producer price indices in the U.S. and Germany show a similar development (approximately +10 percent ). Reasons for this are the greater energy efficiency in Europe and a relatively low share of energy costs in the total cost of manufacturing.[18]

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

[16] IEA, World Energy Outlook 2012, S. 73

[17] The EIA (U.S. Energy Information Administration) expects rising production costs for shale gas in the U.S., as the most productive quarries are increasingly exploited.

[18] KFW ECONOMIC RESEARCH, „Fracking: Wer nicht „frackt", verliert?", 9. April 2013

A switch to renewable energy will lead to a more cost-effective energy supply in the future. Depending on the price expectation this effect is predicted for the 2030s, 2040s at the latest.[19]

The EU should therefore meet the rising cost of raw materials with an accelerated expansion of renewable energy and measures to increase energy efficiency. The EU-wide exploitation of unconventional gas resources would most likely only have a small impact on energy prices. Shale gas and oil is not a promising future for the densely populated Europe, since the economic potential is uncertain[20] and impairing effects on the environment are possible.

## 10. Considering contributions of other parties, continuing leadership in international co-operation

Given the urgency to mitigate climate change, the historical responsibility and the still high per capita emissions of many of the EU member states, we believe that the EU should try to lead the way and commit itself to strong emission reductions regardless of the efforts of other countries. Leading by example is the most promising approach to convince other countries to commit to ambitious reduction goals.

While recognizing the importance of the interaction between types of commitment and level of ambition of the largest emitters worldwide, we would also like to stress the importance of continued signals of EU leadership regarding international co-operation. Regarding options for granting access to the EU ETS for international carbon markets, the framework for acceptable international supply should be defined as robustly as possible. As a minimum, this would be contingent on the international framework being sufficiently robust to support quantity-based approaches, which would enable bottom up approaches with the necessary high degree of transparency and verifiability.

In this context, criteria to assess adequate eligible mechanisms should be defined (e.g. project basis / (cross-)sectoral basis, voluntary or mandatory participation, crediting / trading, level of ambition reflected in baselines or cap-setting). Those criteria should be as consistent as possible with criteria used to define the future spectrum of commitments. Low carbon intensive development pathways should be incentivized, and potential lock-in effects and perverse incentives should be avoided, e.g. by qualitative selections. Also, potential undue distortions on international product markets as shown in the case of some methodologies in existing project-based mechanisms should be avoided based on transparent criteria.

Therefore, regarding the use of existing (but also future) international mechanisms eligible the EU ETS, options of existing legislation pre 2020 to implement quality criteria for projects starting from 2013 onwards according to Article 11a(9) of the Emissions Trading Directive should be actively considered. Counterproductive long-term lock-in effects even in prima facie short term reduction measures should be avoided. It could e.g. be considered to close windows of additional demand for fossil fuel generation in the CDM and other mechanisms except in combination with carbon capture technologies and bundled with useful concepts for carbon recycling.

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[19] SRU Stellungnahme „Fracking zur Schiefergasgewinnung“, Mai 2013

[20] The EIA estimated in 2010 a technically recoverable shale gas resource in Poland of about 5 trillion. $m^3$, the Polish Geological Institute (PGI) in 2011 estimated 560 billion cubic meters of shale gas resources, and the U.S. Geological Agency (USGS) in 2012 even only 38 billion cubic meters. (SRU Stellungnahme „Fracking zur Schiefergasgewinnung“, Mai 2013)

The aspect of storage in the conventional Carbon Capture and Storage (CCS) needs further assessment regarding its sustainability. If CCS is to be applied, preferably industrial or other non fossil carbon sources should be considered.

Existing quantity-based (market) mechanisms show approaches for assessing results which can be built on to strengthen evidence- and result-based climate finance mechanisms. Specifically, the CDM with its vast methodological basis covering all sectors of the economy could serve as a blueprint for allocation / baseline setting and monitoring, reporting and verification (MRV) Systems in all sectors. However, the options to be assessed should draw on the lessons from experiences gained with the existing crediting mechanisms. Strong safeguards need to be implemented to ensure the environmental integrity of credits and other international quantified mechanisms. In this manner, suitably designed and reformed international mechanisms and bilateral agreements of the EU with third countries according to Article 11a(5 and 6) of the emissions trading directive could support regional and sectoral approaches.

### *Exploiting conventional and unconventional fossil fuels in the EU*

Even if the high emission factors that are associated with many unconventional energy sources are ignored, we do not believe that the exploitation of indigenous fossil energy sources is compatible with long term greenhouse gas mitigation targets and a pioneering role in the fight against climate change. Apart from very risky technologies such as Carbon Capture and Storage (CCS) or geo-engineering, the only effective way to reduce greenhouse gas emissions is for fossil fuel resources to remain untouched.