The Chemical Company

02.07.2013

BASF input on the public consultation:
Green Paper on a 2030 framework for climate and energy policies

About BASF

BASF is the world's leading chemical company: The Chemical Company. Its portfolio ranges from chemicals, plastics, performance products and crop protection products to oil and gas. We combine economic success with environmental protection and social responsibility. Through science and innovation, we enable our customers in nearly every industry to meet the current and future needs of society. Our products and solutions contribute to conserving resources, ensuring nutrition and improving quality of life. We have summed up this contribution in our corporate purpose: We create chemistry for a sustainable future.

On our home market Europe, we generate the biggest part of our worldwide sales. With more than 70,000 employees in 34 countries, our business in Europe is the largest of all BASF regions. In addition to numerous larger and smaller production sites, BASF operates Verbund sites in Antwerp, Belgium, and in Ludwigshafen, Germany - the site of the company's global headquarter.

Energy (in the form of hydrocarbons) for us is not only input to drive machines, but also feedstock and raw material. Energy and climate policy therefore affects us as energy intensive industry but also as producer of intelligent materials and solutions for energy efficiency and climate protection products and renewable energy and many other societal challenges.

Transparency Register Nr. 7410939793-88

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Introductory remarks

EU energy and climate policy is at a crossroad. New goals need to be set, but a much stronger focus on all three pillars of sustainability with a better balance between them is needed. We therefore ask the Commission

- To define targets and indicators for competitiveness, security of supply and social aspects in addition to ecological targets
- To introduce a monitoring of these targets/indicators with the aim to adjust targets when the balance is at risk
- To provide together with the respective sectors a bottom-up analysis which climate goal can be reached cost-efficiently by 2030 in absence of a global climate deal.

Sound assumptions and scenarios, taking e.g. (different from the 2011 low carbon and energy roadmaps) the current lack of a global climate agreement, the lower share of nuclear power after the German Energiewende and the U.S. shale gas boom into account, will be required. Setting targets for such a long period until 2030 in times of increasing uncertainties (e.g. development of global and EU crisis, growth developments etc.) is extremely ambitious. Therefore, care will need to be taken to develop a robust framework which is based on some fundamental targets but keeps flexibility to allow for adjustments. Key will be an appropriate GHG target which can be set even in the absence of a global agreement while yet allowing European industry to thrive, create jobs and grow sustainably.

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?

- The aspired leadership role of the EU has not led to more stringent global activities. Therefore, the EU was right to set two 2020 targets: a lower one (20%) in case of unilateral action, and a higher one (30%) in case of a global agreement. The reason why other countries did not follow was not an inappropriate EU climate policy or strategy but purely domestic considerations.
- Political presetting was based on assumptions which turned out wrong (e.g. future energy prices, economic development,…). Legislation needs to be set in a way that reactions from the market to changing external factors are possible without additional interventions.
- Inconsistences between current targets and instruments. Missing hierarchy between competing ecological targets added to uncertainties, as they triggered political discussions about interventions into an already highly regulated market.
- The interference between the ETS and national legislation limited the potential of the ETS to reach GHG targets in the most cost-efficient way. E.g. national funding systems for renewable energy (like the German EEG) favored expensive solutions for GHG abatement, leading to higher overall costs.
- Lack of KPIs for all three pillars of sustainability - for competitiveness, security of supply, social aspects as well as for ecological targets – leads to solutions which are not sustainable in the long term.

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?

Refocus energy and climate policy on the triple objective of cost-competitiveness, energy security and climate protection.
Europe can lead as a best practice region for sustainable climate action only by safeguarding industrial competitiveness. Key targets and indicators for all objectives need to be defined and a monitoring process needs to be set up.

Climate protection is a global task

BASF advocates for global economically efficient, ecologically effective climate protection. Costs and efforts should be fairly distributed between regions, based on their respective responsibilities and capabilities. Ideally a global level playing field with comparable reduction requirements and costs for industry across the world will result. **In case this becomes true, the EU should derive a respective top-down GHG reduction target** for the EU.

Until a respective global deal is reached, the EU should set a 2030 GHG target which is derived bottom-up from sectorial roadmaps which identify GHG reductions in the ETS but also non-ETS sectors that can be realistically achieved by 2030 without further weakening global competitiveness. The result should also be the basis for a new burden sharing between the ETS and non-ETS sector.

Suggested Process to set up a 2030 GHG goal step by step

1. Define all targets for a proper monitoring process

- Develop KPIs to monitor progress on all relevant EU objectives: competitiveness, growth, jobs, security of supply, energy and climate costs, GHG emissions, RES share, etc.
- For the subset of EU energy and climate targets GHG emissions should be the lead KPI, while RES and EnEff are auxiliary measures to help achieve the former. RES and EnEff targets and policies/instruments need to be framed such that they do not interfere with the lead GHG target/instrument.
- Targets should be subject to review if the monitoring yields that the EU is not on track to achieve all relevant objectives.

2. Balance targets depending on global developments: EU to set two GHG targets

A. In case of a substantial global deal:

- The GHG target is derived top-down from the EU commitment under a substantial global deal.
- The burden sharing between ETS and non-ETS sector targets would be derived based on macroeconomic modeling of cost curves.

B. In the absence of a global deal:

- For the ETS sector: A GHG target which is derived bottom-up from sectorial roadmaps, agreed upon between COM and respective sectors. Chemical industry has shown that 2020-2030 another 0-10% GHG reduction is possible without carbon leakage. Industry continues to receive free allowances based on benchmarks and recent output data.
- For the non-ETS sectors: Similar exercise, with the appropriate design of instruments (e.g. standards, see below)
- Together this yields the overall EU unilateral GHG target. EU COM is requested to start this exercise that the COM had already announced in 2011.

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

The focus on one GHG target instead of three targets will minimize overlap and incoherencies in existing energy and climate policy instruments, allowing markets to find the most cost-efficient way towards sustainable climate protection. Renewable energy and energy efficiency are both measures to reach greenhouse gas reduction. The targets thus necessarily must interfere - with an influence also on the EU

Emission trading. Auxiliary targets or “Sub-targets” (which rather are tools to achieve the primary GHG target) may be defined, but a clear hierarchy is needed to allow for flexibility to react to market developments and innovation.

A fixed quota for renewable energy and/or energy efficiency or direct subsidies such as feed-in-tariffs for RES limit the possibility to switch between measures to reach the climate target most cost-efficiently. Innovation influencing cost-efficient potentials in both areas is still ongoing, not allowing to define the best quota today. Thus, respective targets are either unnecessary or increase costs. Additional goals, e.g. increase of energy sources in the EU, should be addressed as such in a technology open manner, also allowing for solutions such as shale gas.

Renewable energy – ready for market before 2020.
After years of funding, and according to own expectations, renewables will probably become competitive before 2020. Some technologies already reached competitiveness. These technologies would then penetrate into the markets without the need for a separate fixed target. Instead of a target requiring a particular proportion of renewable energy in the mix, there could be an economic, innovation target to reduce the cost of renewable energy and its integration into the grid.

Absolute saving targets limit European growth and may increase global emissions.
A separate target on absolute energy savings should not be repeated. Limiting the absolute energy usage of the EU may set a limit to economic growth. This applies particularly to all countries with a strong industrial sector and in particular to those with already high efficiency standards. As the demand for goods (incl. energy efficiency products) - is worldwide continuously growing, a cap on the EU’s energy consumption may limit the EU’s share of this production growth and may export the economic growth to other regions of the world.

Both renewable energy and energy efficiency are not generally no-regret-options:
The increase of **renewable energy** production capacity as part of our energy system has to be well orchestrated – regarding the location (esp. for wind and solar), the infrastructure (like grid availability, smart grids, back-up capacities and storage devices) and the timing: Important parts of the whole system (storage capacities) are still at their infancy and innovation, leading to lower prices, is still ongoing. As innovation cannot be enforced by legislation, pushing non-cost-efficient solutions into the mass market instead of fostering innovation is a waste of money urgently needed elsewhere.

Energy efficiency offers large untapped potentials, which would provide much higher GHG savings at lower costs then renewable energy solutions funded today. However, energy efficiency has limitations, too: Energy efficiency means, that energy costs are shifted towards investment and staff costs. In each case it has to be compared whether this is cheaper or more expensive than the use of energy. If measures are taken by industry because they are cost-efficient in a field of politically induced high energy prices, but would not pay off with energy prices of competing regions, this is an additional burden for industry, too. In such a political surrounding, a broader view than just on yearly energy costs of a company has to be taken when discussing about loss of competitiveness due to energy price differences in other regions.

BASF advocates for more harmonization at European level.
The discussion about the 2030 targets should be used to identify in which areas more EU harmonization in targets, instruments and markets would add real value in delivering major potentials for GHG emissions in a more cost-efficient manner.

• 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?

A new burden sharing based on cost-efficient potential in the different sectors is needed to define new ETS and non-ETS targets. Targets for productions sectors need to be set as a range with a certain flexibility, taking into account

- the option to link with other ETS systems (e.g. linkage of EU and Australian ETS), which limits the effect of targets on EU emissions.
- The need to adapt ETS targets to economic developments and thus production volumes

Sector-specific instruments and standards can tap cost-efficient options

Separate targets for sub-sectors may be set where there is a clear point to do so without disturbing market forces. These targets should be set EU-wide, where possible.

Industry has a long track record of improving its energy and resource efficiency, thereby lowering energy and GHG intensity. We support ETS as a EU wide harmonized and market-based instrument, but a reasonable cap reflecting global developments and free allocation and compensation to prevent from carbon leakage are an essential part as long as there is no global carbon price to avoid unilateral cost burden and a distortion of competitiveness.

To safeguard industrial competitiveness, ETS revenues from industry should completely stay in the sector to finance industry research and efficiency projects instead of co-financing non-ETS sector improvements.

Energy efficient renovations of **buildings** have repeatedly been shown to have, by far, the biggest cost-effective energy savings and emissions reduction potential of any sector in the EU. Long-term strategies for ambitious energy efficiency renovation of the building stock may best be incorporated through binding sectorial standards for the energy efficiency of buildings and by addressing market barriers. Building renovation is good for the environment by saving energy and GHG emissions, it is good for employment, the economy and business alike.

Similarly, **standards for vehicles**, including standards to harmonize infrastructural installations e.g. for electro-mobility, may be appropriate for the transport sector.

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

- By setting realistic targets. Unrealistic targets can never form a robust basis for a framework for such a long time period.

- By setting up the above suggested monitoring of the targets/indicators of the various sustainability dimensions – with the aim to adjust targets when the aspired balance is at risk.
- By not regulating too many details, but leaving it to the market which will be able to react flexible much quicker than policy.
- By recognizing the full amount of burdens which is not necessarily reflected in energy or GHG costs.
- Target setting should include an impact assessment from a macroeconomic point of view, reflecting the economy of measures without policy-induced costs.

• 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?

A set of KPIs covering competitiveness and security of supply with enough flexibility in climate targets to assure prosperity and growth in the EU will best foster global climate protection – even when absolute EU emissions would be reduced less due to prevented carbon leakage. Any scenario with overambitious or unilateral EU climate policy leading to carbon leakage will discourage others to follow and weaken the EU's position in global climate agreements.

Targets/indicators need to be defined to make changes visible. The COM's ambitious target of 20% industry share of EU GDP is a positive signal. Additional parameters may be

- An ambitious absolute growth target for industry to deliver new jobs
- comparing energy prices relative to other world regions. Having fair energy prices is not only essential for competitiveness of industry, but also a social question.
- reporting secure gas supply and electricity black-outs on a second-basis, taking sensitivity of industrial processes into account which need a stable 24/7 electricity supply .

Improvements may include

- Harmonization of EU and national policies by full implementation of existing policies such as energy market liberalisation and completion of the internal energy market.
- A technology-open approach including development of unconventional energy sources including shale gas. All technology exclusions may increase policy cost burdens for European companies.
- Balancing the speed of increased renewable energy production with necessary grid extensions and storage capacities.

4.3. Instruments

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

A European policy coordination on energy generation and security of supply is needed. To achieve a globally competitive low-carbon economy will require an effective, synergistic effort between environmental policy, industrial policy, research policy and energy policy. All measures for emission reduction must be oriented to minimize macroeconomic costs. This can be reached best by allowing measures technology-

open to compete under fair market conditions. Interventions into the market have to be reduced to a minimum.

For the energy sector and the industry, a well designed ETS should remain the main EU wide harmonized and market-based instrument to reduce GHG emissions and to promote investments in low carbon technologies. But changes are necessary: Free allocation and compensation to prevent carbon leakage beyond 2020 are an essential part to safeguard industrial competitiveness.

The coexistence of national funding schemes for expensive solutions (e.g. German EEG) and ETS must come to an end, to allow to reach climate goals most cost-efficient.

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

Sector-specific requirements have to be taken into account. Instead of specific measures, standards can be set. The Energy performance of buildings directive or standards for cars are positive examples – still leaving freedom to reach goals in a technology-open way.

With an ETS in place, there is no need to define additional measures or goals for industry. Especially for energy efficiency, as we see no option for a proper definition. A shift from energy intensive to less energy intensive industries would pretend improvements in direct GHG emission, while hidden)carbon leakage would set the whole value chain at stake and causing indirect GHG emission by importing respective products. Product-based targets are unrealistic due to disproportionate bureaucratic burden.

Transparent, independently verified impact assessments, which take a broader set of scenarios into account should accompany any legislation. The effect on other policy objectives (see above) must be analyzed and taken into account.

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

European harmonization of renewable energy policies and completion of the internal market for energy (electricity and gas) is a key strategy for minimizing the cost of energy and securing supply.

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

- Taking cost-curves into account
- Foster innovation and give time to innovation. This should rather be the focus then highly subsidized role-out of non-cost effective solutions in a large scale.
- Less overlap between sector-specific and overarching legislation (E.g. buildings in EED, EPBD)
- Last but not least: The limits of energy efficiency need to be taken into account when targets are set.

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

Chemistry is the basis for solutions in many sectors, as materials are the basis of any product. The Chemical industry provides a broad spectrum of solutions for energy efficiency and renewable energy alike. A strong Chemical industry in Europe will help to provide solutions.

Innovation policy should not only focus on good R&D programs, but should focus more on easing regulation on innovative products and solutions. In this context, the EU needs urgently a more proportionate application of the precautionary principle which encourages innovation rather than hinders innovation as is the case often today.

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?

Most important: Targets need to be set for all aspects touching industry, energy and climate policy: Economy, ecology and security of supply - see above. These targets must be used to steer and correct climate targets, if competitiveness of industry is at stake. Unilateral targets should be focused on cost-efficient measures.

Exploration and – dependent on results – exploitation of shale oil and shale gas as well as LNG imports can play an important role.

Innovation needs less regulation stopping innovations from penetrating the markets.

• 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?

Carbon leakage today is mainly investment leakage due to more favorable conditions in other world regions, including increasing energy costs in the EU or decreasing energy costs elsewhere (e.g. by shale gas in the US). This already can be seen by investment patterns today.

Statistics also show, that increasing amounts of products are imported into the EU, where CO2 emissions have been made elsewhere.

Until today, the EU and member states introduced largely appropriate measures to dampen the risk of carbon leakage (i.e. free allocation of allowances, certain industry provisions in the German EEG). It is therefore of utmost importance, that these rules are continued until 2030, and if necessary extended. Benchmarks should not only consider best 10%, but the average installations. Free allocation must be provided dynamically, taking real production into account.

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

Drivers of energy costs:
The renewables target – in ignorance of the resulting system costs -, incomplete energy market liberalization, incomplete internal energy market lacking cross-border connections and competition, national targets and policy mix decisions (e.g. ban on domestic nuclear in Germany, exclusion of exploration of unconventional energy, etc.)

Possible improvements:

- Better timing: less money for renewable production capacity, more for energy efficient buildings as long as major issues regarding storage and grid extension are still unsolved.
- Develop renewables at a speed that meets the adjacent development of market integration delivering energy for economic demand
- Harmonization of support schemes towards temporary support leading to market competition much before 2030.
- The EU should encourage sustainable exploration of unconventional energy sources

• 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 to set a top-down target as a conditional target only. In case of the absence of a global agreement, a bottom-up derived target based on cost-efficiency must safeguard long-term competitiveness and growth in the EU.

A high unilateral 2030 target leads to higher burdens for the EU (relative to other countries) and puts a higher strain on industry as well as on general public. Especially with regard to necessary innovations, the EU is in need of a strong industry that requires a level playing field to compete with other parts of the world.

The EU emission share in 2020 will only be half as high as in 1990, decreasing from about 16 to 8 %. This is showing the vigorous efforts already realized by the EU. Assuming, that the EU will reduce its emissions by 80 % in 2050 and global action will lead to an overall decrease in worldwide emissions by 50% (2°-Scenario), the EU would have an emission share of 5-6% in 2050. With a 40 % reduction goal - as suggested in the EU Low Carbon Roadmap – and observed GHG emission trends, the EU will very likely reach this relative share of emissions already in 2030.

Early action must be kept attractive to encourage countries which have the potential to go further ahead. But often the opposite happens, as early action is not taken into account sufficiently.

• 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)?

Companies are used to adjust to changing market conditions. Economic conditions, major steps in innovation and external effects form other regions (shale gas) cannot be planned by politics. Political targets must be realistic, monitored and adjusted if necessary (see above).

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

No unilateral cost burdens for industry

- With respect to ETS: Adequate benchmarks (based on average instead of best 10%) and compensation of indirect costs would limit the amount of available revenues. ETS revenues from industry should completely stay in the sector to finance industry research and efficiency projects instead of financing non-ETS sector improvements or any other unrelated government projects.
- With respect to other instruments: As mitigation of climate change is a societal task, using public money for funding of research or defined segments where it has been proven to be beneficial (buildings) might make sense.

• 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?

- Communicate on opportunities
- Address risks in a risk management approach
- Clear framework to stimulate investments

• 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?

- Functioning of the internal energy market and diversification including exploitation of unconventional gas are major steps.
- Security of supply also includes continuous supply on a second basis, which some industrial installations need. This needs to be monitored especially when increasing the share of intermittent renewable energy.

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?

• 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?

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

- Revolving EU-funds, e.g. for energy efficient buildings.
- Exchange of information, education
- EU harmonization of sector-specific regulation