SRU German Advisory Council on the Environment

Energy Efficiency as a Key Driver for Decarbonization and Prosperity

Contribution to the European Commission's public consultation "Progress towards the 2020 energy efficiency objective and a 2030 energy efficiency policy framework"

Comment on Environmental Policy

May 2014 **No. 13**

The Advisory Council on the Environment (SRU) was founded in 1971 to advise on German and European environmental policy. The Council is made up of seven professors from a range of different environment-related disciplines. This ensures an encompassing and independent evaluation from a natural scientific and technical as well as from an economic, legal, and political science perspective. The Council is a member of the network of European Environmental and Sustainable Development Advisory Councils (EEAC). It has currently the following members:

German Advisory Council on the Environment

Luisenstrasse 46

10117 Berlin

Germany

Phone: +49-30 / 26 36 96-0

Website: www.umweltrat.de

E-mail: info@umweltrat.de

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Introduction

This *Comment* documents the contribution of the Advisory Council on the Environment (SRU) to the public consultation of the European Commission “Progress towards the 2020 energy efficiency objective and a 2030 energy efficiency policy framework.”

Participants in the public consultation were asked to reply by answering the online questionnaire. Hence, the structure of this *Comment* mirrors the structure of the questionnaire. Most questions were to be answered by means of a multiple choice menu, providing some space for additional remark. In this Comment

> “X” indicates that a multiple choice response option was ticked,
> “O” indicates that a multiple choice response option was not ticked.

Generally, only brief responses to the questions were possible as the format of the questionnaire restricted additional remarks and written answers to 1000 characters. The answers in this *Comment* are congruent in content to those submitted via the online questionnaire at the consultation website, but the latter were slightly further abbreviated in order to fit the required format.

The positions and arguments outlined in this *Comment* are based on recent work of the SRU in the fields of climate and energy policy, in particular the following publications:

- SRU (German Advisory Council on the Environment) (2013): An Ambitious Triple Target for 2030. Comment to the Commission’s Green Paper “A 2030 Framework for Climate and Energy Policies” (COM(2013) 169 final). Berlin: SRU. Comment on Environmental Policy 12.
- SRU (2013): Shaping the Electricity Market of the Future. Special Report. Berlin: SRU.
- SRU (2012): Güterverkehr und Klimaschutz. In: SRU (Hrsg.): Umweltgutachten 2012. Verantwortung in einer begrenzten Welt. Berlin: Erich Schmidt, S. 135–169.
- SRU (2011): Pathways towards a 100% renewable electricity system. Special report. Berlin: SRU.
- SRU (2009): Sustainable Development, Innovation and Climate Protection: A German Perspective. Selected chapters of the Environmental Report 2008 Volume 1. Berlin: SRU. http://www.umweltrat.de/SharedDocs/Downloads/EN/01_Environmental_Reports/2008_Environmental_Report_Vol_01_selected_chapters.pdf;jsessionid=A5B02CE49043E10A53BDFAC2AA9B99CE.1_cid335?__blob=publicationFile (09.05.2014).

The SRU did not answer questions on issues that the SRU has not addressed in its recent *Reports*, *Statements* and *Comments*.

Consultation website:

- http://ec.europa.eu/energy/efficiency/consultations/20140428_eed_2020_2030_de.htm

A Energy efficiency targets and measures

1 Do you think the right approach in addressing the shortfall is:

a) To define energy efficiency targets: X

b) Reinforced implementation of existing legislation, including active policy on infringements: X

c) Proposing new legislation: X

d) Other: O

1.a.1 How should these targets be expressed?

a) In terms of energy intensity improvements of the economy: O

b) As absolute energy savings: X

c) As a hybrid of the two represents a better benchmark upon which to frame a 2030 objective: O

d) No opinion: O

1.a.2 At what level should they apply?

a) EU: X

b) National: X

c) Sectoral: O

1.a.3 Should they be

a) Legally binding: X

b) Indicative: O

c) No opinion: O

Further Comments on targets

The indicative energy efficiency targets laid down in the EU's 2020 climate and energy package will presumably be missed. Thus, ambitious and legally binding energy saving targets should be developed within the 2030 framework. Studies identify primary energy savings potentials that may reach up to almost 50 percent in 2030 compared to 2010, with most energy saving opportunities being cost-effective; the EU energy efficiency target should strive for tapping the available cost-effective energy saving potential. Based on an EU-wide target, national energy saving obligations should be assigned and Member States should be made legally responsible for achieving their country-specific targets.

The EU should adopt a dual approach to effectively achieve its overall energy saving targets in a manner that ensures economic efficiency and compliance with the internal market: EU-wide harmonized product-related policies should be improved, reinforced and extended for widely standardized energy-consuming products (e.g. vehicles, household appliances),

building on already existing policies such as the EU's ecodesign framework or the CO_2 emissions standards for vehicles. In realms that call for more customized solutions (such as industrial processes), an approach is warranted that follows the subsidiarity principle and allows countries to find their own ways to improve energy efficiency.

Whereas ambitious absolute energy consumption targets are indispensible to guide the required progress towards the EU's long-term climate and energy targets, additional "safety valves" may be warranted to accommodate unforeseen macroeconomic developments. If the actual economic growth exceeds or falls below an anticipated range of growth rates, the energy consumption target may be adjusted upwards or downwards, respectively, in accordance with predefined rules.

Please specify your response b)

According to the Commission's own preliminary analysis, current energy efficiency policies will not be sufficient to achieve the 2020 target. The indicative targets of the climate and energy package as well as the Energy Efficiency Directive of 2012 appear to be insufficient to motivate the required substantial cuts in energy consumption. One step towards achieving the targets is reinforcing current policy approaches.

The Energy Efficiency Directive should contribute to narrow the gap between the EU's energy saving target and the actually observed development. In order not to undermine the actual effectiveness of the directive, ambition-reducing flexibilities (e.g., accounting of early actions) should be reduced to a minimum. To ensure that the measures mandated by the Energy Efficiency Directive are actually taken, effective monitoring and enforcement mechanisms must be established.

With regards to European measures that regulate at the product level, either aiming at mandatory energy efficiency improvements (Ecodesign Directive) or providing consumers with better energy efficiency information (Labelling Directive), faster adjustments of standards and label classes to technological progress would contribute to increasing these measures' effectiveness. Care has to be taken that energy performance standards drive innovation and that today's top-runners set the standards for tomorrow. Furthermore, additional products should be covered.

B Energy efficiency sectors

2 Do you think that further policy measures are needed at EU level to foster energy efficiency in buildings?

a) Yes: O

b) No: O

c) No opinion: X

3 Do you think that further policy measures are needed at EU level to foster energy efficiency in industry?

a) Yes: X

b) No: O

c) No opinion: O

Please give details

As well as other sectors of the economy, the industrial sector needs a strong (marginal) price signal driving innovations and incentivizing companies to tap cost-effective energy saving potentials. Exemptions from energy and climate charges should be considered as environmentally harmful subsidies. Therefore, such exemptions should be granted only to those industries that face severe competitiveness risks and thereby risks of carbon leakage; their magnitude has to be limited to the minimum level required to maintain the competitiveness of the industries at risk. Correspondingly, restrictive criteria have to be established for the EU-wide harmonized guidelines that are applied to exemptions granted by Member States at the national level.

Energy-intensive and electricity-intensive industries that benefit from free allocation of CO_2 emissions allowances under the EU emissions trading scheme (EU ETS) and state aid measures related to EU ETS-induced electricity price increases, respectively, should be obliged – unless economically infeasible – to implement energy management systems to keep these privileges.

“Learning energy efficiency networks” have proven to be a successful instrument to learn about and tap energy saving potentials, particularly in small and medium enterprises. The EU could consider providing financial support for the establishment of such networks in its Member States – for instance, in the context of its cohesion and structural policy.

4 Do you think that further policy measures are needed at EU level to foster energy efficiency in transport?

a) Yes: X

b) No: O

c) No opinion: O

Please give details

Generally, we recommend advancing the renewables-based electrification of the transport sector as electric drivetrains are more energy-efficient than (fossil-fueled) internal combustion engines. In pursuing electrification objectives, more attention should be focused on freight transport. Measures comprise supporting modal switch in freight transport from road to rail transport as well as bringing electric vehicles on the road, both electric light-duty vehicles (LDV) serving urban delivery services and electric trucks (so-called E-Trolleys). European support may be delivered via regulations as well as infrastructure projects. Moreover, ambitious CO_2-emissions standards (and, in the future, energy efficiency standards) should apply not only to LDV, but also to heavy-duty vehicles.

The recent agreement on new 2020 CO_2 emissions targets for passenger cars maintains several weaknesses of the current regulation that should be corrected as soon as possible. Assigning manufacturer-specific CO_2 targets based on vehicle weight disincentivizes cost-effective light-weighting and downsizing efforts. Super credit provisions relax the effective stringency of the targets. The next revision inevitably requires a switch from tailpipe CO_2 emissions standards to more comprehensive efficiency measures that include energy consumption and GHG emissions occurring further upstream in the fuel chain.

A deepened EU-wide harmonization of the design of the LDV fuel economy and CO_2 label can contribute to improving the CO_2 performance of the European fleet via improving the buyers' informational basis. In particular, the EU should ensure that the label grade takes sufficient account of vehicles' absolute CO_2 emissions in order not to undermine fuel saving targets through incentivizing the purchase of ever-larger and heavier vehicles.

5 Do you think that further policy measures are needed at EU level to foster energy efficiency in electrical equipment?

a) Yes: X

b) No: O

c) No opinion: O

Please give details

With regards to European measures that regulate the energy efficiency of electrical equipment, either via mandatory efficiency standards (Ecodesign Directive) or by providing consumers with better energy efficiency information (Labelling Directive), faster adjustment of standards and label classes to technological progress can contribute to increasing the effectiveness of these measures. European regulation has to ensure that energy performance standards drive innovation and that today's most-efficient appliances set the standards for tomorrow. Thus, we suggest adopting the more dynamic top-runner approach (as it has been implemented in Japan). Furthermore, additional product groups should be covered.

More care needs to be taken that minimum energy performance standards and labelling rules do not give disproportionate credit to appliances with larger utility factors (e.g. TVs with larger screens). Otherwise, energy saving targets will be undermined through incentivizing the purchase of ever-larger appliances.

6 Do you think that further policy measures are needed at EU level to foster energy efficiency in generation and distribution?

a) Yes: X

b) No: O

c) No opinion: O

Please give details

A strong carbon price signal is indispensible to incentivize efficiency improvements in generation and distribution. Therefore, we strongly recommend taking effective measures to restore the incentive function of the EU ETS. In particular, the EU should set itself an ambitious European climate objective for 2030; the currently proposed GHG reduction target of 40 percent is by no means sufficient to revive the EU ETS. Given the enormous surplus of emissions allowances, recent studies show that an overall GHG reduction target of at least 55 percent along with a significantly increased EU ETS annual reduction factor are required to yield allowance prices that can incentivize energy efficiency investments.

Given the absence of conversion losses, an increased growth of renewable energy sources for electricity generation (RES-E) contributes to achieving energy efficiency targets defined in terms of primary energy. Hence, the EU should set ambitious and legally binding targets to foster the further expansion of renewable energy sources (RES) of no less than 40 percent; a separate target for RES-E may be considered (50-70 percent). The EU-wide RES target should be broken down into legally binding national obligations so that individual Member States are held responsible for assuring compliance with their assigned targets. Jointly with energy savings and GHG targets, RES targets should form part of a consistent overall climate and energy policy package, which must also be compatible with the long-term objectives for 2050.

7 Do you think that further financial mechanisms and instruments are needed at EU level to mobilise energy efficiency investments?

a) Yes: O

b) No: O

c) No opinion: X

8 Do you think that further measures are needed to build the capacity of actors in the energy efficiency sector?

a) Yes: X

b) No: O

c) No opinion: O

Please give details

In accordance with the subsidiary principle, Member States should take measures adapted to their specific national circumstances, based on legally binding energy efficiency targets.

The setup of national energy saving agencies and improved energy saving consultancy constitute important building blocks of national strategies for tapping available energy saving potentials. The EU may consider financial support for such capacity building measures.

9 What are the most promising technology solutions that can help deliver energy savings in the 2020 and 2030 time horizon? How can their development and uptake be supported at EU level?

Generally, we deem an intensified electrification of energy use – based on increasing RES shares – a promising approach to decarbonize the economy and to improve (primary) energy efficiency. Electrification is a strategy that can be applied to several forms of energy use across all sectors of the economy.

Promising specific technologies with high energy saving potentials include, for instance, combined heat and power (CHP) plants, micro CHP, high-efficiency electric motors, LED, bivalent electrical heating.

10 Further comments

Energy efficiency and RES expansion are the essential building blocks to achieve the EU's decarbonization targets. For its future energy and climate policy, the EU should thus maintain a three-pillar approach consisting of separate – but mutually supportive – targets for GHG mitigation, RES expansion, and energy efficiency improvements. To underscore their equal importance, all should be made legally binding with compliance responsibility at the Member State level. The synergies and interdependencies among the three pillars can be anticipated in order to define a coherent EU climate and energy policy package. The currently proposed levels of ambition are not sufficient for any of the three domains to steer the transition towards a low-carbon economy.

Ambitious energy efficiency policy will not do harm to Europe's competitiveness. Instead, maintaining or rather reclaiming a vanguard role will trigger low-carbon innovation, boost competitiveness in future-oriented industries, create sustainable jobs, reduce dependence on imported fuels, attenuate vulnerability to fossil fuel price volatility, and contribute to a reduc-

tion of the EU's trade deficit. Thus, timely investments in energy efficiency enhancements will have positive macroeconomic impacts especially in the most fossil fuel import-dependent countries. A sufficiently strong carbon price signal is needed to motivate these investments – in all sectors of the economy.

Taking account of heterogeneous national circumstances and in accordance with the subsidiary principle, Member States should be given flexibility to pursue their national energy saving targets. Full EU-wide harmonization of measures is warranted only for some domains of energy efficiency policy (such as appliances standards).

German Advisory Council on the Environment
Luisenstrasse 46, 10117 Berlin, Germany
Phone +49 (0)30 / 26 36 96-0, Fax +49 (0)30 / 26 36 96-109
Website: www.umweltrat.de, E-mail: info@umweltrat.de