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Green Paper on a 2030 framework for climate and energy policies

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

The 2020 targets for renewable energy, energy efficiency and greenhouse gas emission reduction have set a predictable and stable framework for all actors in Europe. Especially investors in renewable energy technologies, such as local energy companies, have profited from the clarity of this political agenda. This was reinforced in the European Commission's European Energy Roadmap 2050 by identifying renewable energy, energy efficiency and infrastructure as the *"no regrets options"* for the European decarbonisation agenda.

Looking at the progress towards the 2020 targets for renewable energy and greenhouse gas emissions, it shows that a binding nature of targets, leaving sufficient room for Member States' flexibility in implementation has been effective. The EU27 on average are on track to meet the two binding targets for renewable energy and greenhouse gas emission reduction.[1] The recently adopted Energy Efficiency Directive, instead of a binding target, includes binding measures for Member States. However, it is currently expected that these efforts will bring the increase in Energy Efficiency to only 17%, leaving a gap of 3% to the overall EU 2020 target. [2]

With regard to renewable energy, individual national binding targets have been successful in triggering efforts for all Member States and avoiding free-riding problems. Framework conditions, such as technological and economic development, availability of natural resources, training, and social acceptance vary greatly between Member States. Taking these differences into account and developing a European framework which sets adequate national targets, allowing for an ambitious but fair effort-sharing seems a reasonable path to maintain for a 2030 framework.

Finally, flexibility for Member States in the implementation of policies to reach their national targets, has been an important feature of the 2020 climate and energy package, which should be continued in its 2030 framework. National Renewable Energy Action Plans (NREAPs) have been important tools for Member States to design and take stock of existing policy measures in all three sectors, electricity, heating and cooling and transport and the contribution of single technologies. Simultaneously, NREAPs have been good instruments to identify progress on national trajectories towards the 2020 targets.

[1] European Commission, Renewable energy progress report, 2013

[2] European Coalition for Energy Savings, 2013

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?

Greenhouse gas emissions

CEDEC explicitly supports a legally binding target for greenhouse gas emission for 2030. The EU's ultimate goal of decreasing its GHG emission by 80-95% by 2050 needs a clear trajectory with ambitious targets.

The European Emission Trading System, due to the currently low price of carbon emission fails to drive the EU's decarbonisation policy. At this point in time, the ETS does not give investment signals in renewable energy and does not encourage a switch from coal- to more flexible and efficient gas-fired power plants. CEDEC is therefore in favour of a reform of the current ETS scheme and has pledged for an increase of the 2020 GHG emission target in combination with a retiring of allowances in phase 3. CEDEC strongly emphasises that an ambitious legally binding target for 2030 is absolutely indispensable to drive the climate policies of the EU.

CEDEC is the opinion that a clear and fair effort-sharing between ETS and non-ETS sectors is needed. Therefore, ambitious targets for both sectors should be set to avoid an asymmetric burden for sectors in direct competition. For example, while district heating plants are covered by the ETS, the traditional heating sector is not. Hence, an ambitious overall GHG reduction target would trigger efforts in both sectors.

Renewable energy

The target for GHG emission should be complemented by a legally binding target for renewable energy. Legally binding targets are an important signal to individuals and companies, such as local energy companies, to invest in renewable energy technologies. Targets deliver a stable political framework, which provides certainty and predictability. From CEDEC's point of view a binding RES target is the basis for a clear long-term political agenda, which is independent of short-term political mood swings. The EC rightly established in its 2012 communication with regards to renewables that renewables growth would slump after 2020 without a further introduction of a specific RES target for 2030.[3]

From CEDEC's point view, setting only a GHG target for 2030 on EU level would not be sufficient to deliver the necessary results for a decarbonisation of Europe's economy and an energy supply, to a large extent based on renewable energy. Moreover, a so-called technology-neutral approach through a GHG emission target would not allow for Member States to optimally develop and exploit all potential resources at their disposal but would only foster deployment of the currently most-competitive renewable energy technologies.

In addition, a single GHG emission target for 2030 would undermine the threefold 2020 policy-framework, as no further actions would be encouraged. Investment decisions for 2020 have largely

[3] European Commission, Communication: Renewable Energy a major player in the European energy market, 2012

been taken and no new impetus would be set for the next decade. Against the background of renewable energy as *no regrets option*, setting only one target for GHG reduction seems a paradox.

CEDEC also believes that there is a considerable overspill effect of a specific target for renewable energy to enabling infrastructure, such as smart grids, which should not be underestimated. Today, more than 80% of all renewable energy installations in Europe are connected to the distribution level. Smart grids are indispensable means to optimally balance demand and supply with increasing variable generation from renewable energy in distribution grids. Therefore, a binding RES target would also have clear investment signals for the third *"no regrets option"* identified by the European Commission, namely energy infrastructure at distribution level.

CEDEC believes that an ambitious European RES targets should be set and split up into individual national targets. Legally binding national targets offer to take into account the different national starting points and potentials in RES deployment. Moreover, they minimise the risk of free-riding. Moreover, interim targets like in the 2020 policy framework for renewables should be set for the time leading up to 2030 to provide a clear trajectory for Member States and predictability for industry.

In contrast, CEDEC opposes sectoral renewable targets (for electricity, heating and cooling and transport) as these would limit Member States' flexibility in reaching their targets.

Energy Efficiency

Although in principle supporting a binding energy efficiency target, CEDEC believes that the decision on a target should be postponed until after the evaluation of the effectiveness of the binding energy saving measures prescribed in the Energy Efficiency Directive.

The Directive after lengthy negotiations only recently entered into force. It foresees binding measures for energy efficiency by Member States to be implemented by June 2014. The evaluation of the measures however, is foreseen for the same month. CEDEC therefore suggests postponing the evaluation until a later date, as it is impossible to arrive at a conclusion about the effectiveness of measures put into place in the same month.

In CEDEC's view, energy efficiency is a central driver of Europe's competitiveness and economic growth. Especially also in many public services, such as transport, huge potentials for energy efficiency remain to be tapped.

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

In CEDEC's view there are no inconsistencies in the three targets for GHG emissions, Renewable energy and energy efficiency for 2020. In fact, the three targets work in a complementary manner. The impact of a 20% RES share in the Eu's final energy consumption and 20% Energy Efficiency have been modelled into the 20% GHG reduction target and therefore an achievement of the target will not have an undermining effect on the GHG emission target. The reason for the current surplus of allowances in the ETS and the consequential missing signal for low-carbon investments, results from

the unpredictable economic crisis at the time of target setting and a high influx of international credits, rather than from inconsistencies in the policy framework.

For a 2030 framework, CEDEC believes that in order to avoid inconsistencies, the targets for RES and GHG emission should be set at the same time, so that interactions between them can be taken into account in the modelling. Against the background that some countries, like Germany have already decided for a large share of renewables, it seems much more logical to model the avoided GHG emissions from a renewables target in the target for GHG emission reductions when designing it. Otherwise a GHG target could be undermined by large growth of RES.

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

The aim of targets is to give a poltical direction providing long-term stability and predictability for future policy orientation and investment efforts. Targets are not to be confused with instruments such as support schemes. In fact, legally binding targets will ultimately reduce the need for support schemes for RES technologies, as they reduce investments risks and hence the cost of capital.

CEDEC has always supported technology- and segment-specific support schemes, which take technology developments and price developments into account, without being disruptive and losing their predictability for investors. From CEDEC point of view, only technology-specific support schemes will allow Member States to exploit all resources and potential available on their territory. Moreover, technology-specific support will allow also innovative and still less competitive technologies to unfold their full potential in the energy mix.

Retroactive changes to support schemes as previously witnessed in several Member States (e.g. Spain, France) and discussed in others (Germany) are to be absolutely avoided as they distort investor confidence. Equally, an overcompensation of technologies by support schemes should be avoided. Instead, support schemes should be regularly and predictably adjusted to technology developments, reflecting the decreasing costs of deployment.

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 is a prerequisite for all actions in the energy policy. Harvesting domestic potentials of renewable energy will increase security of supply as it will decrease the dependence on fuel imports. In combination with interconnectors, implementation of the network codes and demand-side instruments, such as smart grids facilitated by storage, demand-response tools, and energy efficiency measures, renewable energy will make a significant contribution to a secure and stable energy supply.

In a system with new technologies such as electric vehicles and variable energy sources, more flexibility is needed, which should be reflected in a future energy market design. Local energy companies as operators of distribution networks close to these sources are in a key position to facilitate a smooth functioning and non-discriminatory access for all actors to the European retail

market. As neutral market facilitators they provide a level playing field for established actors, such as suppliers, and new ones, such as ESCOs and aggregators. With a variety of actors offering innovative system services, security of supply and system stability can be maintained. A clear recognition of roles and responsibilities of regulated and commercial actors is therefore needed to ensure a smooth functioning of the system, which accelerates the transition towards a sustainable energy system.

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

In CEDEC's view, the ETS is a crucial instrument to reduce GHG emissions and should be reformed as soon as possible. In CEDEC's opinion, the backloading of 900 million should be approved by European policy-makers.

In CEDEC's view a structural change to the ETS is necessary in order to re-store the carbon price and therewith investment signals in safe and sustainable low-carbon technologies. CEDEC has therefore welcomed the discussion of a structural reform of the ETS, which was initiated in the carbon market report and to which CEDEC has contributed in the framework of the public consultation.

CEDEC recommends an increase of the emission target for greenhouse gases to at least 25% compared to 2005 level by 2020. This measure would entail a combined effort by the industrial sectors covered by the ETS and the non-ETS sectors. As an implementation mechanism within the sectors covered by the ETS, CEDEC suggests a single permanent set-aside of the necessary allowances. This measure would have an immediate effect on the number of certificates on the market and therefore have an immediate upward impact on the carbon price.

The move to a 25-30% domestic emission reduction would entail several benefits. Not only would it help to achieve the EU's 2050 decarbonisation agenda and achieve the envisaged goal of limiting the global temperature increase to about 2° Celsius. It would encourage a fuel switch from coal to gas and drive investments in renewable energy technologies, which allow for the exploitation of domestic resources, and decrease the dependency on energy imports and the costs for imported fuel.

However, the ETS is a market-based instrument and will remain subject to volatility due to economic developments etc. It hence does not suffice as a single instrument to drive the EU's climate and energy objectives and needs to be supplemented by support schemes for i.e. renewables and high-efficiency CHP.

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

In the coming years, an important focus should be put on the demand side. The cheapest kWh is the one that is not consumed. Besides intensifying the energy efficiency efforts, effective demand-side management through innovative technology and behavioural shift among customers will contribute to reaching the EU's climate and energy objectives at lowest cost. With instruments to shift, curtail or even avoid loads, immense cost-savings can be achieved at generation and infrastructure level.

Therefore, EU and national policies should encourage the research, development and deployment of innovative demand-side management technologies. Regulatory frameworks should create incentives for companies to develop DSM programmes and consumers should be encouraged to participate in them.

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

While the completion of the internal energy market is a declared goal of the EU and actively supported by CEDEC, the energy mix remains within the responsibility of the Member States. Also the starting points and national framework conditions for the deployment of sustainable low-carbon technologies vary greatly.

Support mechanisms have proven very successful to trigger deployment of renewables and to bring down the costs for technologies. The projections for price reduction of the currently most competitive technologies, PV and onshore wind, have been reached or even exceeded expectations. Especially technology-specific feed-in tariffs have shown positive results for RES deployment due to the security provided to investors and comparatively lower windfall profits for more mature technologies than technology neutral support schemes.[4]

Member States should also in the future be able to design targeted, technology-specific support schemes for renewable energy and high-efficiency CHP which take technology maturity, local conditions available, resources and starting points into account. Effective support schemes should be regularly and predictably adjusted to decreasing technology costs. Experience shows that renewable technologies have gone down considerable in price due to technology learning and economies of scale. Therefore, not only the most competitive but also promising innovative technologies should be supported.

Nevertheless, some convergence in national policies for renewable energy has been observed in recent years. More and more Member States have opted for feed-in tariffs instead of quota systems and have installed a regular adaptation of support schemes following market developments.

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

Energy savings are the cheapest way to ensure security supply and reduce GHG emission. Hence, additional measures to ensure energy efficiency should be taken by all Member States.

Smart grids and demand-response tools can make a significant contribution to energy savings. Therefore, the deployment of smart grids should be encouraged by investment- and innovation-friendly national regulatory frameworks, which allow network operators, bearing the majority of the costs, to recuperate their investments without time lag.

[4] Mario Ragwitz, Fraunhofer ISI, Presentation given at stakeholder workshop on State Aid, 12 April 2013

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

Administrative procedures for R&D projects- in the application and implementation phases – should be minimised to a practical level. The existing high and complicated bureaucracy is an obstacle, especially for small and medium sized investors like local energy companies. Beyond that increased funding should be made available both at national and EU level for R&D for infant technologies, with potential for large-scale deployment and for new implementation of new technologies, such as components for smart grids mainly on distribution level. Large-scale application of technology creates economies of scale and technological innovation.

Funding and research activities should especially focus on critical enabling technologies at the demand side, such as smart distribution grids, demand-side management tools and energy storage. In this field not only should research and innovation policy foster the development of technologies but focus on how to encourage changes in consumer behaviour, which is needed for demand-side management. The EU should ensure in any case that new initiatives and research policies are coherent with EU network codes (and do not discriminate against local energy companies as currently only cross-border projects are eligible for funding).

Which elements of the framework for climate and energy policies could be strengthened to better promote job creation, growth and competitiveness.

Renewable energy and energy efficiency sectors have been among the only ones to witness positive economic growth and employment during the lasting economic crisis; targets for these sectors will constitute a further positive signal. The renewables sector could employ up to 2.7 million people by 2020. Setting a binding RES target for 2030 could create employment for up to 3.4 million people. [5]

The Energy Efficiency sector also has enormous potential for job creation. The European Commission stipulates that by increasing energy efficiency in buildings through the necessary investments, translates to retaining and creating 850.00 jobs annually in the EU. [6]

As most jobs in renewable energy and energy efficiency sectors are in project development, construction, installation, operation and maintenance, many of them will be created by small-and medium-sized local companies. Hence, employment will be created at local level, also in structurally weaker areas thereby contributing to EU regional cohesion.

Moreover through the deployment of smart grids and energy services such as demand-side management, new markets will be created for companies, providing specialised services and technologies, such as Energy Service Companies (ESCOs) and aggregators. By creating new business opportunities, the internal energy market will be strengthened and competitiveness will be enhanced. DSOs play a crucial role here in taking responsibility for metering and communication of

[5] Fraunhofer ISI et al, EmployRES, the impact of renewable energy policy on economic growth and employment in the European Union,2009

[6] European Commission, Consultation Paper on Financial Support for Energy Efficiency in Buidlings, 2012

necessary technical and consumer data, thereby facilitating the provision of services while maintaining a level playing field between all market players.

Therefore, ambitious binding targets for greenhouse gas emission reduction and renewable energy deployment will contribute to Europe's competitiveness and to the creation of growth and employment.

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

As recently established by nine European environment ministers in a common declaration, the main driver of the EU's energy bill apart from taxes, public charges and apportionments, are high and volatile prices for fossil fuel imports. [7] In 2012 alone, the EU-27 spent 406 billion on imports. According to the International Energy Agency, the EU's dependence on fossil fuel imports and therewith high prices will continue to increase until 2030. [8]

With an ambitious renewable energy target and efforts for energy efficiency, the EU could save up to €370 billion for fossil fuel imports in the same time horizon. [9] This is due to quickly decreasing prices of renewable energy technologies. Hence, CEDEC demands to end all subsidies to fossil fuels and nuclear energy, and to set ambitious targets for RES and GHG emissions which will reduce the costs of fuel imports while reducing GHG emissions.

Another decisive component in the energy bills are taxes and levies. While the wholesale prices of energy have actually decreased over the last years, due to the low marginal costs of renewable energy sources, retail prices, especially for household consumers have increased, due to rising taxes and levies. These surcharges are often not distributed equally among customer groups, and exemptions or limitations for industry customers are leading to proportionately higher burdens for household customers.

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?

European targets should be set on the basis of the avoided costs for fossil fuel imports in the long-run (see above) and the competitiveness of the EU industry through the development of new energy related technologies, such as renewables and enabling technologies like smart distribution grids. Only with strong political targets for renewable energy and greenhouse gas emission can Europe continue to be a leader for international climate negotiations.

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[7] Joint Statement on the ETS, by environment ministers from Denmark, Finland, France, Germany, Sweden, Portugal, Slovenia, The Netherlands, UK, 2013

[8] International Energy Agency, World Energy Outlook 2012

[9] EREC, 45% by 2030. Towards a truly sustainable energy system in the EU, 2011

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?

Prior to the consideration of the extraction of any unconventional forms of energy, such as shale gas, is considered in Europe, a comprehensive environmental impact assessment, especially with regard to the effect on drinking water supplies must be undertaken. Member States should remain free to ban the exploitation of certain forms of unconventional sources, especially in sensitive areas.

If unconventional energy extraction was considered non-hazardous in some areas, due to limited amount of shale gas in the EU and considering the alternative of strengthening RES, Member States should weigh up their alternatives taking into account all long term aspects.

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?

Internally, the EU policies should aim at supporting smart distribution grids alongside the development, reinforcement and expansion of conventional distribution grids and all demand side technologies, such as demand response technologies, microgeneration and storage. With increasing amounts of distributed generation from mainly renewable sources connected to the distribution networks, smart distribution grids constitute a central means to ensure security of supply while exploiting domestic generation potential. Partially upgrading of distribution networks with innovate technologies is the socio-economic cheaper alternative to purely traditional grid upgrading.[10] An efficient network management on distribution level can moreover avoid the often more costly and socially opposed extension of transmission networks.

Consequently, in order to maintain high levels of security of supply, support for downstream technologies, i.e. smart grids and demand response, should be significantly increased at EU and national level. This can be achieved through R&D activities, innovation and industrial policy, support mechanisms and adaptations of regulatory frameworks towards more innovation and investment-friendliness.

With regard to infrastructure, the decisions about investments in assets that will be in place in 2030 and 2050 are made today. As infrastructure has a long-term life-time, a clear decision about the energy mix of the future must be made today, for distribution system operators to determine the needs for future electricity, gas and heat infrastructure. This will also provide DSOs with better means to calculate their grid losses. If they were to generate these themselves by deploying renewables they could contribute even more to the accomplishment of the renewable energy target. CEDEC therefore emphasises the need for a swift and clear agreement on a policy framework for 2030 and 2050 in order to avoid stranded assets.

[10] Netbeheer Nederland, Smart Grids Roadmap 2011, Verband Kommunaler Unternehmen Deutschlands, Integriertes Energiemarktdesign, 2013

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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?

The European Commission with help of Member States should carry out a comprehensive impact assessment outlining the Member States potentials for the deployment of all renewable energy technologies and for the reduction of greenhouse gas emissions. Based on this analysis, an approach with a fair sharing of efforts should be defined.

Another area for further assessment is the interaction between different targets. A climate and energy framework needs to be stringent and comprehensive in order to ensure the support from all stakeholders and not stand in contrast with the completion of the single market.

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?

As outlined above, binding national RES targets are advantageous in finding a fair effort sharing between Member States. Departing from nationally specific resource, technological, economic and geographic potentials, an ambitious but feasible national target can be set. This allows for effort sharing while requiring action from everyone and therefore avoiding free-riding.

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

Actions reducing greenhouse gas emission and promoting renewable energy and energy effiency should be streamlined and made a priority in all EU funding activities.

A multitude of funding opportunities at European, national and regional level should be made available reflecting the manifoldness of projects that will be realised. For example, EU funds for smart cities and communities should be used primarily for smart distribution grids, ensuring an integration of renewable sources and local balancing of supply and demand. With national and regional funding schemes, the subsidiarity principle is guarded and a pro-active role of cities in energy investments is fostered.

As mentioned above, lean and speedy administrative procedures are necessary for local energy companies, which are often medium-to small size and face a scarcity of resources, to facilitate their application for funding.

CEDEC Background information

CEDEC represents the interests of local and regional energy companies.

CEDEC represents 1500 companies with a total turnover of 120 billion Euros, serving 85 million electricity and gas customers & connections, with more than 350.000 employees. These predominantly medium-sized local and regional energy companies have developed activities as electricity and heat generators, electricity and gas distribution grid & metering operators and energy (services) suppliers.

The wide range of services provided by local utility companies is reliable, environmentally compatible and affordable for the consumer. Through their high investments, they make a significant contribution to local and regional economic development.

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