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Questions and answers on 2030 framework on climate and energy

1. Why does the EU need a new climate and energy framework for the period up to 2030?

The European Commission is today proposing a framework which provides **predictable and certain energy and climate objectives** applicable beyond 2020 and up to 2030. There are several reasons for proposing the framework now:

- The EU currently has a **climate and energy objective** to reduce its greenhouse gas (GHG) emissions by 80-95% below 1990 levels by 2050[1], and 2020 targets to reduce GHG emissions by 20% below 1990, increase renewable energy to 20%, and achieve energy savings of 20%. The new framework constitutes the next step towards reaching the 2050 goal.
- The **impact of the economic and financial crisis** needs to be taken into account: high energy prices for gas and oil in particular, and the risk of future rises, increase the vulnerability of the EU economy.
- The **security of EU energy supplies** in the medium to long term remains an issue due to the Union's high and increasing dependence on imports from sometimes politically unstable regions.
- At the same time the EU's energy system requires significant investment to replace obsolete infrastructure. Investors urgently need a clear policy framework that provides **predictability and reduced regulatory risk** beyond 2020. This will also stimulate research and development in efficient low-carbon technologies.
- In addition, the EU needs to decide what GHG reduction target it is going to contribute to the **global climate agreement** that is to be adopted at the end of 2015.

2. What progress has been made towards meeting the 2020 targets?

Between 1990 and 2012 the EU succeeded in cutting its **GHG emissions by 18%,** while GDP grew by 45%. **The EU is on track** to meet its 2020 target of reducing emissions by 20% below 1990 levels.

The 2020 target is split between the sectors covered by the **EU Emissions Trading System (ETS)** and the sectors not covered by the ETS. For the sectors covered by the ETS, the EU-wide emissions cap has been set at a level that means emissions in 2020 will be 21% below 2005 levels. For non-ETS sectors each Member State has a national emissions target, ranging between 20% above and 20% below 2005 levels. In total these national targets add up to an EU-wide reduction target of around 10% below 2005 levels

[1] *in the context of necessary reductions by developed countries as a group*

for the non-ETS sectors. The EU as a whole is on track to meet this target, but a number of Member States need to make additional efforts to meet their national targets.

As regards **renewable energy**, the EU has met its interim targets but **more efforts will be needed from Member States** to reach the 20% target in 2020. 12.7% of gross final energy consumption in 2011 was from renewable energy (compared to 8.5% in 2005). In aggregate, the EU 28 has met its interim target for 2011/2012, driven by Member States' efforts to make progress towards the national targets in the Renewable Energy Directive. However, as the trajectory grows steeper, more efforts will be needed from Member States in order to reach it[2].

Regarding the 2020 target to make **energy savings of 20%** in the EU's primary energy consumption (compared to projections made in 2007), **significant progress has been made, despite the fact that this target is not legally binding** for Member States. After years of growth, primary energy consumption peaked in 2005/2006 (at 1,825 Mtoe) and has been slightly decreasing since 2007 (to reach 1,730 Mtoe in 2011)[3], in part due to impacts from the economic crisis, but also due to lowered energy intensity. Nevertheless, the EU is likely to miss its indicative energy savings target.

3. What are the targets for 2030?

The 2030 Framework provides **predictable and certain energy and climate objectives** applicable beyond 2020 up to 2030:

- **A greenhouse gas emissions** reduction target of 40% percent below 1990 levels, to be achieved through domestic measures alone (ie without the use of international credits). This will ensure that the EU is on the cost-effective track, set out in the Commission's low-carbon Roadmap,[4] towards meeting the 2050 objective of an 80-95% emissions cut. The target also sets a strong example to the international community in the negotiations on the new global climate agreement to be adopted in 2015. The target will result in **stronger benefits** in terms of **energy independency**, the EU's **external fuel bill, health impacts, employment** and **competitiveness**. To achieve the target efficiently, it is projected that ETS emissions would need to be cut by around 43% from 2005 levels, whereas the non-ETS sector would reduce less, by around 30% compared with 2005.
- **Renewable energy target** of at least 27% percent of energy consumption above 1990 levels, with flexibility for Member States to set national objectives. This would come with significant benefits in terms of **greater reliance on indigenous energy sources** and in terms of **energy trade**. Such target will also continue to d**rive growth** in the renewables sector, e.g. with a share of renewable energy in the electricity sector increasing from 21% today to at least 45% in 2030.
- **Energy efficiency** is a key component of the 2030 framework, and the Commission will return to this later this year, following its assessment of progress made towards meeting the 2020 target provided for in the Energy Efficiency Directive, to be concluded in 2014.

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[2] *See the Commission Renewables Progress Report.*

[3] *Primary energy consumption included non-energy uses which are not considered in the energy savings target for 2020. The figure excluding non-energy uses was 1706 Mtoe in 2006 and 1583 Mtoe in 2011.*

[4] *COM(2011) 112. A Roadmap for moving to a competitive low carbon economy in 2050.*

4. What magnitude of investment is necessary to reach the GHG target?

The **average annual additional investments** needed over the period 2011 to 2030 to meet the targets are projected to amount to 38 billion Euros for the EU as a whole, to a large extent compensated for by fuel savings. More than half of these investments are needed in the residential and tertiary sectors. The **total cost of the energy system** in 2030 is thus projected to increase by 0.15% if targets are met cost-effectively, with the average cost of the energy system over the period 2011 to 2030 projected to increase by 2 billion Euros per year; these costs are projected to shift from operational costs (fuel) to capital costs (investments).

5. What will the benefits be for the economy and citizens in terms of sustainability, energy security and competitiveness?

The framework will have multiple economic and environmental benefits that will make the EU more sustainable. Not only GHG emissions but also air pollution will be cut, benefiting human health. For instance, cuts in particulate matter (PM2.5) concentrations compared to present policies would reduce health damage from air pollution in 2030 by around €5 to 11 billion and air pollution control costs by more than €2 billion.

The EU's energy efficiency would improve more than under current policies, helping to reduce costs, create jobs, enhance competitiveness and bring also energy security benefits linked in particular to lower fossil fuel use and imports. Compared to 2010, energy import volumes would decrease by *at least 10%* and those of natural gas by at least 9%, with benefits increasing with the use of higher levels of energy efficiency to achieve the targets.

In terms of employment, new growth sectors are expected to create opportunities in fields such as engineering, basic manufacturing, transport equipment, construction and business services. Overall job growth is expected to be positive if targets are achieved through ambitious energy efficiency policies that create jobs locally, for instance in the construction sector, and if revenues from carbon pricing, for instance through auctioning, are used to lower labour costs.

6. What will this mean for the European and international carbon markets?

The proposed GHG reduction target would improve the functioning of the European carbon market and increase certainty for investors in the EU ETS about the efforts required within the EU. It would not allow for import of international credits after 2020.

The ETS currently has a large surplus of emission allowances which has built up primarily due to the economic crisis, resulting in emissions well below the ETS cap, as well as the inflow of a large amount of international credits which were allowed under the ETS directive to enter over the period 2008-2020 (with projects often being contested by many stakeholders on environmental grounds). This surplus, which is not expected to reduce soon, has led to a low carbon price which weakens the incentive for emission-saving investments, thus eroding the ETS's role in delivering long-term, cost-effective GHG reductions.

To address the surplus and make the ETS a more robust instrument for 'decarbonising' the EU economy, the Commission today presented a legislative proposal to create a market stability reserve in 2021 (see also MEMO/14/39).

To achieve the proposed 40% GHG reduction target it will also be necessary to change, after 2020, the annual linear reduction factor that determines the 'cap' on ETS emissions. A linear reduction factor of 2.2% per year would be needed from 2021, compared with 1.74% up to 2020.

The Commission continues to see the development of an international carbon market as a major way to reduce GHG emissions and address the risks of 'carbon leakage' (see Q7). The main tool in this regard is linking the European carbon market with other mature and robust carbon markets. This central objective is not affected by the objective of reaching the 40 % reduction target without international credits. To facilitate this, the Commission will continue to engage in technical dialogue and support capacity building in third countries.

Should the 2015 global climate agreement enable the EU to increase its GHG reduction target for 2030 to more than 40%, use of international credits within the EU may become relevant, in which case a decision would be needed on which credits to recognise.

7. What about the potential risks of 'carbon leakage' and how could it be avoided?

'Carbon leakage' refers to the risk of companies moving production out of the EU to third countries where industry would not be subject to comparable carbon constraints. To prevent carbon leakage, energy-intensive sectors in the EU that are exposed to international competition receive ETS emission allowances for free according to a benchmark based on best available technologies. This system is serving as an effective safeguard: analysis for the Commission confirms that there is no evidence that carbon leakage has occurred due to the EU ETS.

The Commission therefore proposes to continue the system of free allocation after 2020 if other major economies do not take comparable climate action. The system would be improved so that it focuses on those sectors at most risk of carbon leakage.

8. What has the Commission decided on carbon leakage for the current decade?

The ETS Directive mandates the Commission to determine a new carbon leakage list in 2009 and every five years thereafter. Therefore, the current list expires at the end of this year and needs to be replaced by a new list valid for the period 2015 to 2019.

To comply with this legal obligation, while guaranteeing continuity on the composition of the list, the Commission intends to present a proposal to the EU Climate Change Committee which would maintain the current criteria and existing assumptions (including an assumed carbon price of €30).

9. What is the impact on energy prices and energy costs?

The Impact Assessment published alongside the 2030 Energy and Climate Framework shows that the costs of a low carbon transition do not differ substantially from the costs that will be incurred in any event due to the need to renew an ageing energy system.

Energy system costs (largely investment costs, including investments in the transport sector, and fuel costs) are expected to rise from about 12.8% in 2010 to around 14% of GDP by 2030. There will, however, be a major shift away from expenditure on fuels towards innovative equipment with high added value that will stimulate investments and economic competitiveness.

Upward pressures on energy prices in the EU will continue, also driven by increasing fossil fuel prices determined in international markets. On the other hand, the gradual completion of the internal energy market will help to keep EU wholesale electricity and gas prices in check.

10. Why is only a renewable energy target at EU level, rather than individual targets for Member States, proposed? Does this mean a change in EU policy toward Renewable Energy?

Renewable energy will continue to play a **fundamental role** in the transition towards a more competitive, secure and sustainable system: the Commission considers that the EU should set a European target for the share of renewable energy in final energy consumption of at least 27%.

Experience with the current 2020 framework nonetheless indicates the way to proceed: renewable energy policies are key to reduce the EU's trade deficit in energy commodities, EU exposure to supply disruption and to volatile fossil fuel prices – but they require **market integration, high levels of investment, cost-efficiency and undistorted competition**.

The sustainable development of renewable energy to the full benefit of EU citizens entails a rigorous **enforcement of competition** and **state aid rules,** as well as a fundamental transformation of the **EU energy infrastructure**. This includes more cross-border interconnections, storage potential and smart grids to manage demand in order to ensure a secure electricity supplies in a system with higher shares of intermittent renewable energy sources.

Unlike in the current framework the EU target for the share of renewable energy consumed in the EU would not be translated into national targets via EU legislation. This leaves **greater flexibility for Member States** and gives them the possibility to take advantage of the most cost-effective means of achieving a more sustainable, secure and competitive energy system. This increased flexibility will be combined with a strong European governance framework meant to ensure overall consistency with European targets and coherence with the wider principles of European energy policy.

11. What will be proposed regarding energy efficiency?

Energy efficiency is a vital component of the future energy and climate framework. The proposals assume major improvements in energy efficiency, as demonstrated in the Energy Roadmap 2050. The EU will continue to promote energy efficiency across all its energy and economic policies.

It is essential that Member States do the same.

The current EU framework for energy efficiency policy will be analysed in greater detail in the **assessment of progress made** towards meeting the 2020 target provided for in the Energy Efficiency Directive, to be concluded later in 2014. Meanwhile energy efficiency legislation and standards agreed at the EU level are starting to bring important energy savings:

- The **adopted ecodesign and labelling measures**, representing around 90 Mtoe of energy savings in 2020.
- **EU Regulations relating to CO2, cars and vans**, which have led to an accelerated improvement of fuel efficiency in new cars and vans; CO2 emissions from new cars were reduced from 172 g per kilometre in 2000 to 136 g per kilometre in 2011.
- The revised **Energy Performance of Buildings Directive (EPBD), which will** ensure Member States apply minimum energy performance requirements for new buildings; if there are no delays in implementation, this Directive could provide the EU with up to 65 Mtoe savings in the buildings sector by 2020.

- The Energy Efficiency Directive will lead to improvements in public building standards, energy auditing and consumer awareness of the benefits of energy efficiency.

12. Why is there no new target as regards transport?

The future of EU transport development should be based on alternative, sustainable fuels as an integrated part of a more holistic approach to the transport sector.

The Commission has therefore not proposed new targets for the transport sector after 2020 (current targets: 10% renewable energy for the transport sector. The share of renewables in transport rose to 4.7% in 2010 from 1.2% in 2005).

Based on the lessons of the existing target and on the assessment of how to minimise indirect land-use change emissions, it is clear that **first generation biofuels** have a **limited role in decarbonising** the transport sector. A **range of alternative renewable fuels** and a mix of targeted policy measures building on the Transport White Paper are thus needed to address the challenges of the transport sector in a 2030 perspective and beyond.

13. What is the main purpose of the indicators for a competitive and secure energy system?

The EU lacks common benchmarks to provide a factual base for potential policy responses. Therefore the Commission comes forward with a set of key indicators to assess progress over time. These indicators are:

- **Energy price differentials** between the EU and major trading partners.
- **Diversification of energy imports** and the share of indigenous energy sources used in energy consumption over the period up to 2030.
- Deployment of **smart grids and interconnections** between Member States, with particular urgency for those between countries that are furthest away from meeting the already agreed objective for Member States to ensure a level of electricity interconnections beyond 10% of their installed **production capacity.**
- **Intra-EU coupling of energy markets**, building on the liberalisation of gas and electricity markets already achieved by EU legislation.
- **Competition and market concentration** in energy markets at the national level and in regions with functioning coupling at the wholesale level.
- **Technological innovation** (R&D expenditure, EU patents, competitive situation on technologies compared to third countries).

The Commission will come forward with periodic reporting and, where appropriate, accompanying measures on these indicators.

Moreover, the attainment of the 2030 targets will be ensured by a new governance framework based on national plans for competitive, secure and sustainable energy that will have to be prepared by the Member States.

14. How will national plans for competitive, secure and sustainable energy contribute to the achievement of the targets and the improvement of the EU energy system?

These plans should set out a **clear approach to achieve domestic objectives**, regarding: non-ETS GHG emissions, renewable energy, energy savings, energy security and other important choices such as nuclear energy, shale gas, carbon capture and storage, interconnections as well a transition towards less carbon intensive fuels. The explicit aim of these plans will be to create more **investor certainty**, greater transparency, enhance coherence, **EU coordination** and surveillance, including the assessment of such plans against Union level climate and energy objectives, and progress towards the objectives of the internal energy market.

To **ensure consistency and compliance** over time, the Commission proposes to monitor the preparation of Member State plans through an **iterative process** well before 2020.

In order to **ensure the achievement of the targets,** the Commission proposes to introduce a **revision procedure** of national plans in order to assess over time if these are sufficient to deliver the Union's climate and energy targets recommending corrective measures.

15. How does the proposed GHG reduction target contribute to the global climate agreement due to be adopted in 2015?

Countries have been invited to come forward by early next year with the GHG emission reductions they intend to contribute to the global agreement. The EU thus needs to decide its target in the coming months. A 40% reduction target would set a strong example to the international community.

The Commission sees no merit in proposing, in addition, a higher, conditional target ahead of the international negotiations. It would rather assess the possibility of increasing the proposed target in the light of other countries' contributions. Should the outcome of the negotiations warrant a more ambitious EU target, the additional effort could come from international credits.

16. What are the next steps?

The adoption of the Commission's Communication is a first important step of an extensive inter-institutional process. The European Council is expected to consider the 2030 framework at its spring meeting on 20-21 March.

The Commission is asking the Council and the European Parliament to endorse the framework's overall approach to future climate and energy policies, the EU-level target for renewable energy and the proposal to establish a new governance system. It also invites the two legislative bodies to adopt the proposed ETS market stability reserve and to agree by the end of this year that the EU should pledge a 2030 GHG reduction of 40% in early 2015 as part of the international negotiations on a new global climate agreement.

Such action would allow the EU to contribute constructively to the international negotiations and increase predictability for investors by creating greater clarity about the required level and type of efforts needed after 2020.

Before 2021, the 2030 GHG reduction target would need to be translated into national GHG targets for the non-ETS sectors and Member States would need to draw up their national plans for competitive, secure and sustainable energy for the period up to 2030.

The Commission will provide more detailed guidance on how these plans will have to be formulated.

Energy efficiency must continue play a significant role in delivering the Union's climate and energy objectives and this will be the subject of a review of progress in energy efficiency which the Commission will conclude later in 2014.

Building on the experience developed with the Report on energy prices and costs, the Commission will come forward with periodic reporting on the new proposed indicators.

See also IP/14/54