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NOTE

From:	Presidency
To:	The High Level Working Group on Competitiveness and Growth
Subject:	Energy Intensive Industries and the long-term EU Strategy for the reduction of greenhouse gas emissions in accordance with the Paris Agreement

Delegations will find in Annex a note by the Presidency on Energy Intensive Industries and the long-term EU Strategy for the reduction of greenhouse gas emissions in accordance with the Paris Agreement, in view of the meeting of the High Level Working Group on Competitiveness and Growth on 8 November 2018.

ANNEX

Clean Energy Transition as Growth Opportunity

The recent Intergovernmental Panel on Climate Change special report on limiting the global temperature rise to 1.5°C confirmed that climate change is already happening at an alarming rate. To limit the negative impacts of climate change, the Paris Agreement binds ratifying countries to hold global temperature increase to well below 2°C, pursue efforts to limit it to 1.5°C and achieve climate neutrality in the second half of the century.

Achieving the Paris objectives will require deep transformations across key economic sectors such as energy, with its central role as well as transport, industry, buildings and agriculture.

The innovative, safe and sustainable low carbon and circular economy transition and a strong EU industrial base are mutually reinforcing. The innovative, safe and sustainable low-carbon energy transition creates new opportunities for the industry, in particular in the construction and engineering sectors. Many industrial sectors can contribute to the energy transition through more efficient use of energy, enhanced use of waste heat, production of equipment and innovative solutions to curb emissions, improving thus also EU industry's global competitiveness.

The challenge will be to manage the transition to low-emissions while keeping economic sectors competitive so as to secure jobs, growth and investment in Europe and positioning it to exploit the huge potential global market for low-emission technologies and services.

The EU is at the forefront of the global transition towards a innovative, safe and sustainable low-carbon and circular economy and must now capitalise on this leadership, pioneering new green production methods and clean energy technologies. In this way, the EU domestic market will be a springboard to grasp new business opportunities outside the EU. This is one of the main objectives of the Renewed Industrial Policy Strategy adopted in September 2017.

For the transition to happen, industrial energy use should decrease overall but, depending on the scenario, the availability of abundant, affordable innovative, safe and sustainable low carbon energy and relevant infrastructure will be a critical factor for the industry and other sectors of the economy. The right framework conditions need to be in place for the transition to happen including strong support to research and innovation, investment, competition, taxation, regional policy and trade. Resource efficiency in general, industrial symbiosis and circular economy can provide a substantial overall boost to emission reductions.

Energy intensive industries, which make up more than half of industrial energy consumption, are incorporating mid-century energy and climate goals in their long-term strategies; every major industrial sector has a low-carbon roadmap and they have for the first time worked together to produce a common cross-sectoral vision of how they would move towards carbon-neutrality[1]. Also, they have already undergone significant adjustments. Final energy use reduced by 20% between 1990 and 2016. Energy efficiency investments with a short payback time (in some cases as short as 3 to 4 years) delivered considerable benefits to the companies willing to invest. As a result, emissions also decreased considerably in these industrial sectors. In 2015, direct emissions from energy intensive industries were 36% below 1990 level: a deeper reduction than for the rest of the economy (EU28 emission reduction equals to 24% only over the same period).

In the short and mid-term, it is expected that industry will reduce emissions mainly with a combination of improved energy-efficient technologies (e.g. more efficient processes, motors, combustion, etc.) and increased electrification of industrial processes. However, breakthrough technologies are needed to replace fossil fuels in order to reach carbon neutrality for the energy intensive industries. This calls for a strong research and innovation support including large-scale demonstration.

[1] T. Wyns *et al.* (2018): Industrial Value Chain: A Bridge towards a Carbon Neutral Europe, Brussels: IES-VUB

Long-Term Trends and Drivers

Current energy efficiency and electrification options have limits and further innovative technological and business solutions will have to be developed and implemented. Examples of such potential solutions include the use of hydrogen, green methane, synthetic gases and sustainable biomass in industry, Carbon Capture Use and Storage (CCUS), industrial symbiosis and more generally industrial synergies throughout the industrial value chain.

Close cooperation with energy suppliers and network operators should help to cost-effectively use existing energy infrastructure (e.g. gas grid for renewable gases), to expand necessary energy infrastructure (e.g. electrolyzers for hydrogen production) and most effectively use energy (e.g. use of waste heat).

Several other overarching trends will affect European industry in the 2050 horizon. These meta-trends include notably: demographic trends, digitalization (including robotics, artificial intelligence and big data), geopolitical changes, changes in the availability and production of natural resources, the implementation of circular economy and the effects of climate change. Such changes give rise to significant challenges. But at the same time, if competitiveness of EU industries is ensured at global level through a truly fair and level playing field, they can also offer great opportunities. Companies who are able to successfully lead the energy and resources transition could develop a significant competitive advantage.

A Long- Term Strategy to Seize this Opportunity

Seizing these opportunities and preparing well for the challenges linked to these transitions requires a strategy based on an integrated vision. In response to the calls by the European Council[2] and the European Parliament[3], the Commission is preparing the long-term EU Strategy for the reduction of greenhouse gas emissions in accordance with the Paris Agreement. The Strategy will guide our future reductions of emissions in line with a modern, prosperous and competitive economy. It will look at multiple pathways, including achievement of net-zero greenhouse gas emissions in 2050. The Commission intends to present the Strategy in November 2018, ahead of the UN Climate Change Conference (COP 24) in Katowice, in early December 2018.

Today, the EU is on its way to achieve its 2020 energy targets on emissions reduction, renewable energy and energy efficiency. Moreover, the Energy Union is being completed and the Clean Energy for all Europeans proposals are being agreed[4]. As required by the Governance of the Energy Union, Member States are now developing their draft national energy and climate plans in close collaboration with the services of the Commission.

The Long-Term Strategy will look much wider - at the interaction and interdependency of the clean energy, low-carbon, circular economy and digital transition among others. It will take a comprehensive look at the contribution of key economic sectors such as industry, transport, construction or agriculture. A key principle guiding this strategy will be support to growth and jobs across the EU and fostering a modern, competitive, sustainable and socially fair European economy, including in regions that stand to be negatively affected by the transition towards innovative, safe and sustainable low-carbon economy.

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2 EUCO 1/2018, 22 March 2018

3 On 4 October 2017 the European Parliament invited the Commission "to prepare by COP24 a mid-century zero emissions strategy for the EU".

4 Agreements on the Energy Efficiency Directive, the Energy Performance of Buildings Directive, the Renewable Energy Directive and the Regulation on the Governance of the Energy Union and Climate Action. The Electricity Market design proposals and the Rules for the ACER regulator are currently under negotiation.

The Long-Term Strategy will notably underline the framework needed to channel investment and enable synergies in research, development and innovation to decarbonise energy intensive industries along vertical and horizontal value chains by the implementation of break-through technologies. The main challenge will be to move from the lab to large-scale demonstration and market roll-out of the most promising and affordable low carbon solutions inside and outside the EU.

Questions for discussion:

1) *Promoting competitiveness of the European economy and re-industrialisation will be a key guiding principle of the Long Term Strategy. How can this best be achieved while moving towards the goals of the Paris Agreement? How do Member States see the role of hydrogen and its market potential on the pathway to decarbonise industry?*

2) *What are the main instruments at the Member State level that could be used in order to exploit the opportunities and prepare for the challenges?*