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From: Presidency  
To: The High Level Working Group on Competitiveness and Growth  
Subject: Energy Intensive Industries

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Delegations will find in Annex a Non-paper on the Competitiveness of the EU Energy Intensive Industries in view of the High Level Working Group on Competitiveness and Growth meeting on 4 May 2017.

**Non-paper:****Competitiveness of the EU Energy Intensive Industries<sup>1</sup>****1. An overview of the EU EII**

Energy intensive industries (EII) are an essential part of our economic and industrial structure. The following sectors can be considered as the core of EII: pulp & paper, chemicals, non-metallic minerals (glass, lime, ceramics, cement, gypsum), iron & steel, and non-ferrous metals (aluminium, copper, etc.). They are closely integrated with the value chain, providing intermediate products for a wide range of industries and services: from construction to household appliances and consumer products, transportation, energy or defence, and agriculture. Strong EU EII are fundamental to the competitiveness of EU industry and of related services, and to allow value creation downwards in the value chain. EII combined provide direct employment to around 2.6 million people and contribute to around 15% of EU manufacturing added value.

The improved consumer confidence and market conditions in the EU have a positive impact on EII. The demand in downstream industries is growing, enabling EU EII to stabilise after the strong recession, to increase production and to regain profitability. At the same time, EU EII have been losing market share on the EU and global markets, and global imbalances in production capacities in steel, aluminium and several other EII risk to strengthen this trend.

EU EII have increasingly shifted to specialise in high added value or niche products and undergone industrial transformation to absorb impacts of crisis, structural adjustments and intensified global competition. Despite this, the EU faces difficulties to attract EII investments. For example, only 9 out of 200 steel capacity investments worldwide are underway or planned within the EU up to 2019; and capital spending in the chemicals in the EU in 2015 (21 bn €) was substantially lower than in the US (33 bn €) or China (96 bn €).

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<sup>1</sup> Non-comprehensive paper providing background information for discussion in the HLG on Competitiveness and Growth

In this context, the Commission set up in 2015 the High-Level Expert Group on Energy Intensive Industries to discuss with key stakeholders and national administrations the most pertinent issues that EII are facing, including upcoming EU initiatives. The identified priorities cover: energy, climate, trade, innovation and environment. Technical discussions focused so far on the Emissions Trading Scheme, the Energy Union package, innovation and global excess capacity. Additionally, in March 2016 the Commission presented the policy measures to support the European steel sector.<sup>2</sup>

## **2. EII main factors of competitiveness**

EII are facing the technological and environmental transitions. The challenges of these transitions urgently and effectively need to be addressed to foster the competitiveness of the EU EII.

- **Innovation and financing investments:**

Innovation and technological advancement – supporting improved efficiency, product quality, differentiation, new value chains – are the main source of EU EII competitiveness and enablers of transformation. This can be supported by the leading number of patent applications from EU EII raw materials sectors, which account for around one third of the overall applications<sup>3</sup>. The shift to decarbonised, ‘green’ industry needs new break-through technologies and business models, such as for carbon capture storage (CCS) and industrial symbiosis. Linking up R&D with commercialisation of new products is also needed to attract new investments. With Horizon 2020, COSME, ESIF and EFSI, there is an unprecedented level of EU financing available:

- EII benefit from innovation projects under Horizon 2020 with its dedicated part, i.e. on raw materials, bio-economy and low carbon technologies. On top of that, innovation in EU EII resource and energy efficiency is supported by SPIRE<sup>4</sup> public-private partnership and development of a new bio-based sector – by Bio-Based Industries Joint Undertaking.

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<sup>2</sup> Communication "Steel: Preserving sustainable jobs and growth in Europe", COM(2016) 155 of 16 March 2016

<sup>3</sup> Source: PATSTAT, 2013, excludes chemical sector.

<sup>4</sup> Sustainable Process Industry through Resource and Energy Efficiency

- The European Fund for Strategic Investments (EFSI) facilitates access to finance for higher-risk projects, for example, in steel (Arvedi: 100 M€, ArcelorMittal: 350 M€, Aperam: 50 M€, Feralpi: 37 M€), pulp & paper (Metsä: 75 M€, Saica: 70 M€), glass (Vidrala: 93.6 M€), chemicals and refining (Novamont: 60 M€, Milazzo: 30 M€).<sup>5</sup>
- EII across EU regions obtain funding under the European Structural and Investment Fund (ESIF), for example for steel plant modernisation or biorefineries infrastructure.
- COSME<sup>6</sup> improved access to finance to more than 16,000 EU manufacturing SMEs (covering EII), amounting to 1 billion € since 2014.

- **Skills and industrial transformation:**

The technological and environmental transformation faced by EII has broad implications for the skills, competences and (all-round) profiles needed, notably linked to digitisation, decarbonisation, innovation, internationalisation and resilience. Access to a qualified workforce with specific and sometimes new skills, throughout regions and sectors, is a prerequisite for realising innovation. In addition to the skills gap and mismatch, EII face various other challenges, such as an ageing workforce, the need to attract and retain young talents and of ensuring the inter-generational transfer of knowledge. The New Skills Agenda for Europe launched the Blueprint for Sectoral Cooperation on Skills to address skills development at the sectoral level. From EII, steel and pulp & paper industries might be among the sectors selected.

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<sup>5</sup> Source: <http://www.eib.org/efsi/efsi-projects/index.htm?c=&se=>

<sup>6</sup> EU programme for the Competitiveness of Enterprises and SMEs, source: [www.eif.org](http://www.eif.org)

- **Raw materials and energy costs:**

For their production EII depend on primary and secondary raw materials, such as mineral and metal ores and scrap, biomass and fossil feedstocks. Raw materials represent a substantial share of EII production costs, mostly varying between 20-40% and, overall, EII have little margin to pass on price volatility of raw materials. The main challenges faced by EII are volatility of raw materials prices and, in certain cases, security of supply. The demand for raw materials is growing all around the world, for both raw materials from primary and secondary sources. This is mainly driven by the growing demand from emerging economies (e.g. increased production levels in China) and also due to the development of ‘green’ and advanced technologies that push the demand for various minerals, metals and biomass. Moreover, export restrictions across raw materials increased dramatically over the last decade. Over 900 measures were introduced or tightened in 2009-2014<sup>7</sup>. In addition, EII using biomass face increased competition to this feedstock from the growing bio-energy sector. The Circular Economy Action Plan is key to support industry in securing reliable and unhindered raw materials supply.

EII are also sensitive to energy price volatility; their average energy share ranges between 4-20% of production costs, with a maximum up to 7-42%.<sup>8</sup> The decline in energy commodity prices in recent years improved EII competitiveness temporarily. However, as EII face international competition, price differences between regions matter: EU gas prices are higher than for most competitors (except for Asia); while EU industrial electricity prices are still much higher than for some global competitors (US and Russia), despite a narrowing gap. Some MS compensate the high European energy prices through tax reductions and exemptions granted to certain EII, in accordance with state aid rules. EU EII also managed to reduce their energy costs to some extent through energy efficiency, shift in production to less energy-intensive products and energy supply strategies. Adopting and implementing the Energy Union package is essential for EII to foster affordable and secure access to energy.

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<sup>7</sup> At the HS6 product level, source OECD: <http://www.oecd.org/tad/benefitlib/export-restrictions-raw-materials-2014.pdf>

<sup>8</sup> COM(2016) 769 final of 30.11.2016 on Energy prices and costs in Europe

- **Regulatory framework and level playing field on global markets:**

EII investments in the EU depend on a predictable and stable regulatory framework. The Commission has recently studied a ‘cumulative cost assessment’ (CCA) of the relevant EU legislation for: aluminium, steel, chemicals, forest-based, ceramics and glass industries.

Being large greenhouse gas emitters, EII are among the main sectors impacted by climate policies. Consequently, they can play a major role in addressing climate change by reducing greenhouse gas emissions. The EU has been at the forefront of international efforts towards a global climate deal<sup>9</sup>. So far, the impact of the EU Emission Trading Scheme (ETS) on the carbon price has been limited. Nevertheless, in absolute terms, EII have contributed significantly to EU emission reductions; for instance, the metal sector decreased its greenhouse gas emissions by 45% and the paper industry by 24%<sup>10</sup> in fifteen years. Yet, they are still large emitters and as such sensitive to the carbon price. The ETS, following the adoption of its revision, can be a driver for innovation in EII, but also a decisive factor for the (re)location of new investments, given the fact that most EII are highly exposed to international trade.

The market downturn, in both the EU and on international markets, following to the crisis and market-distorting interventions contributed to capacity imbalances and associated market consolidation, to a varied degree, observed in most EII. Industry profitability has suffered, most seriously in steel industry. The use of trade defence instruments (TDI) has significantly increased, providing a temporary relief against unfair trade. WTO data show that steel and base metals account for 30% of total anti-dumping initiations during 1995-2015, followed by chemicals (20%) and paper and wood (7%). TDI Modernisation and trade policies upholding the commitment to open markets is hence of high relevance to EU EII.

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<sup>9</sup> At the Paris Agreement of December 2015 195 countries adopted the first-ever universal, legally binding global climate deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C.

<sup>10</sup> Sources: for metals, the Raw Materials Scoreboard by the Commission; for paper, CEPI.

### 3. Conclusions

The capability to reduce costs and offer innovative solutions is essential for competitive EII and thus for European industry as a whole. The challenge remains to attract EU EII investments and maintain their position on global markets, while at the same time making progress in addressing climate change by reducing total greenhouse gas emissions. Breakthrough technologies will be needed from an economic and ecological (climate) point of view.

### 4. Questions:

1. The technological and environmental transformation faced by EII needs to be addressed urgently and effectively to remain competitive. What can be done at European, national or regional level to:
  - a. motivate EII to take part in innovation projects that mobilize private financing, additional to European financing (EFSI, Horizon 2020, ESIF, COSME), in order to make a cost-effective transition to CO<sub>2</sub>-low economy possible?
  - b. enable breakthrough technologies to make production compatible with climate and energy policy objectives and foster competitiveness?
  - c. encourage the uptake and success of the New Skills Agenda for Europe, in particular for EU EII?
2. Are there any specific topics you would like to see being addressed by the High-Level Group on Energy Intensive Industries? How would you see it being reflected in the Council (and HLG) discussions?

## Annex to ANNEX:

	Direct jobs (in 1000)			Estimated indirect jobs (in 1000)	Turnover/sales (in billion €)		
	2005	2010	2015		2005	2010	2015
<b>EII sector:</b>							
Pulp & paper	247	195	178	1,200	75	76	79
Chemicals	1,290	1,170	1,160	3,000	457	495	520
Non-metallic minerals, out of which:							
- Glass	250	197	185		54	45	~44
- Lime	20	16	15.5		4.65	4.09	4.2
- Ceramics	226	205	200		27.3	27.7	28
- Cement	64	54	47		24	17.5	15
- Gypsum		28	28			7.7	7
Iron & steel	408	364	321	1,300	163	131	124
Non-ferrous metals, out of which			500	3,000			120
- Aluminium			200	1,000			40
<b>Total:</b>			<b>2,634</b>				<b>941</b>