



EU Energy Intensive Industries' transformation Masterplan



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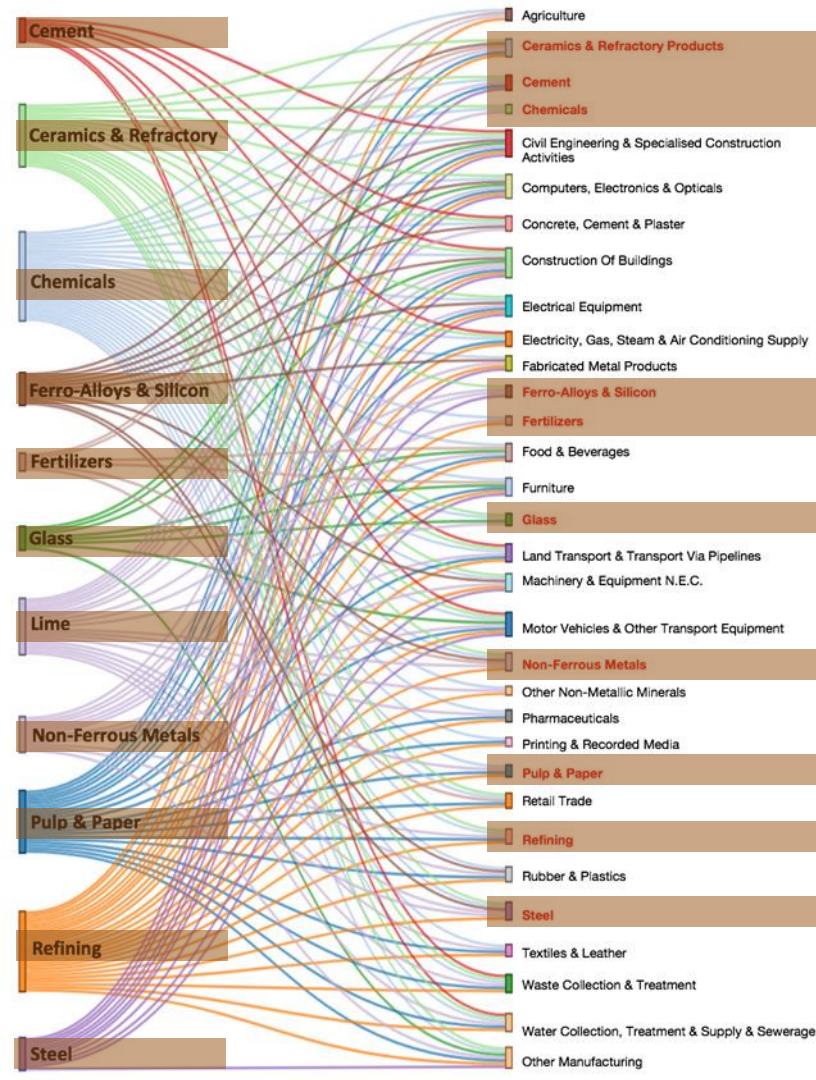
Unit for Energy Intensive Industries
and Raw Materials
Directorate General for Internal Market,
Industry, Entrepreneurship and SMEs



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Energy-Intensive Industries:

1. Make up more than half of the energy consumption of the EU industry.
2. Are at the heart of the EU value chains. Their products are needed for low-carbon solutions enabling the transition to climate-neutrality.
3. Share the ambition of the Paris Agreement, recognise the size of the transformation challenge and the opportunities it brings.



Masterplan for a competitive transformation of EU Energy Intensive Industries enabling a climate neutral, circular economy

Transition to climate-neutrality is a key driver of our economies. The von der Leyen Commission is proposing a new Industrial Strategy and a European Green Deal to make Europe the first climate-neutral continent.

This transition will require transformational efforts in all sectors of the economy. Industry, responsible for 15 % of the EU's emissions, will be an important part of the effort.

The High Level Group on Energy Intensive Industries has developed a Masterplan to advise the European Commission on the enabling policy framework needed to manage the transition to low-emissions while keeping industry competitive.

The Masterplan was published in November 2019. It is well recognized in the European Green Deal.

The European Green Deal



Transforming the EU's economy for a sustainable future

A zero pollution ambition for a toxic-free environment

Increasing the EU's Climate ambition for 2030 and 2050

Supplying clean, affordable and secure energy

Mobilising industry for a clean and circular economy

Building and renovating in an energy and resource efficient way

Designing a set of deeply transformative policies

Preserving and restoring ecosystems and biodiversity

From 'Farm to Fork': a fair, healthy and environmentally friendly food system

Accelerating the shift to sustainable and smart mobility

The European Green Deal

The EU as a global leader

A European Climate Pact

High Level Group on Energy Intensive Industries

Since:

Established in 2015

Role:

Provide advice on best ways to foster competitiveness and renewal of the EU Energy Intensive Industries

Members:

EIIs, EC, Member States, financial institutions (EIB, EBRD), NGOs

See more:

<https://ec.europa.eu/transparency/regexpert/>

Development of the Industrial Transformation Masterplan

September 2018

Industries in the HLG EII presented a cross-sectoral vision on ways towards climate neutrality, contributing to the Strategic Vision “A Clean Planet for All”.

February 2019

The HLG agreed to prepare the Industrial Transformation Masterplan implementing the EIIs’ transition towards a climate neutral and circular EU economy. The Masterplan is the result of a collective work inspired by the shared ambition of seizing the opportunities of the transition to a climate-neutral economy while addressing the challenge of a fragmented international climate action.

**March - August
2019**

Three thematic subgroups met to develop the Masterplan:

1. Creation of markets for climate-neutral, circular economy products
2. Developing climate-neutral solutions and financing their uptake
3. Resources and deployment

Social dimension of industrial transformation is a cross-cutting issue.

Strategic priorities

| Creation of Markets for Climate-neutral, Circular Economy Products | Developing Climate-neutral Solutions and Financing their Uptake | Resources and Deployment | Social Dimension |
|--|--|---|---|
| Demand-side measures fostering demand and competitiveness | Developing industrial demonstrators of breakthrough technologies | Availability of climate-neutral energy at globally competitive prices | Empowering consumers to make informed choices |
| Alternative or complementary options for carbon pricing mechanisms | R&D&I programmes bringing solutions closer to the market | Access to alternative feedstock sources | Equipping workers with new skills to deal with the transformation |
| Empowering customers and consumers | Facilitating access to private capital | Mapping of energy and non-energy infrastructure and supply | Helping communities dependent on the EIs to face the transition |

Taking account of relevant ongoing work:

the Strategic Forum on Important Projects of Common European Interest and its work on strategic value chains

the Strategic Plan for Horizon Europe

the Technical Expert Group on sustainable finance

the Roundtable on Industry 2030

the Integrated National Energy and Climate Plans

Key recommendations of the High Level Group



Creation of Markets



Innovation



Investment



Energy and Raw Materials



Circular Economy



Social Dimension



Next Steps

Key recommendations of the High Level Group



Creation of Markets

- Use full life-cycle approach to measure greenhouse gas footprint of products and materials
- Make strategic use of public procurement to select sustainable products and services
- Develop an enabling framework to support the cost competitiveness of climate neutral, circular economy products

Key recommendations of the High Level Group



Innovation

- Develop large scale pilots to showcase clean technologies by 2025-2030 and foster large scale deployment thereafter
- Develop Horizon Europe Partnerships on Climate-Neutral, Circular Industry and on Clean Steel
- Align eligibility criteria between different funds, both on EU level (e.g. Horizon Europe, or InvestEU) and national level and also interoperability of funding mechanisms

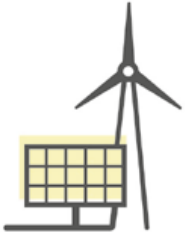
Key recommendations of the High Level Group



Investment

- Identify pipeline of technology projects to be funded by private sector and public funds
- Facilitate access to private capital at affordable cost, including through de-risking instruments
- The Commission's Action Plan on Financing Sustainable Growth should support competitiveness of the EU industry and its transition to climate-neutrality

Key recommendations of the High Level Group



Energy and Raw Materials

- Ensure access and availability of climate-neutral energy at globally competitive prices
- Develop supply and infrastructure for low emission alternative feedstock sources such as hydrogen
- Develop infrastructure reflecting an integrated approach including energy, transport and digital networks
- More strategic approach needed in ensuring access to supply of sustainable raw materials, including development of economic partnerships with resource-rich countries and better use of domestic resources

Key recommendations of the High Level Group



Circular Economy

- Accelerate the move to circular economy to reduce greenhouse gas emissions through better material and resource efficiency across value chains
- Introduce measures to assess products based on the appropriate and standardised life-cycle approach
- Develop infrastructure reflecting an integrated approach including energy, transport and digital networks
- Develop technological solutions and design products that help achieve circularity
- Exploit underused potential for use of secondary raw materials
- Promote use of renewable and (carbon-based) recyclables beyond energy production

Key recommendations of the High Level Group



Social Dimension

- Equip workers with new skills to deal with the transformation
- Communicate better to help consumers make more informed choices
- Support the transition of coal and carbon-intensive communities and regions, including through the future Just Transition Fund

Key recommendations of the High Level Group



Next Steps

Set up an industrial transition observatory involving relevant industry and civil society stakeholders to monitor industry's progress towards climate-neutrality and circularity and advice course corrections.





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Annex slides



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For each sector multiple technology options are being developed towards significant GHG reductions

| Technology Sector | Electrification (heat and mechanical) | Electrification (processes: electrolysis/ Electrochemistry excl. H2) | Hydrogen (heat and-or process) | CCU | Biomass (heat and feedstock) /biofuels | CCS | Other (including process integration) |
|---|---|--|--------------------------------------|---|---|-----------------------------|--|
| Steel | xxx | xx | xxx | xxx | x | xxx | Avoidance of intermediate process steps and recycling of process gases: xxx Recycling high quality steel: xxx |
| Chemicals & fertilisers | xxx | xxx | xxx | xxx | xxx | xxx (*) | Use of waste streams (chemical recycling): xxx |
| Cement lime | xxx | o (cement) o (lime) | x (cement) x (lime) | xxx (cement, lime) | xxx (cement) x (lime) | xxx (cement and lime) | Alternative binders (cement): xxx Efficient use of cement in concrete by improving concrete mix design: xxx Use of waste streams (cement): xxx |
| Refining | xx | o | xxx | xxx | xxx | xxx | Efficiency: xxx |
| Ceramics | xxx | o | xx | x | x | o | Efficiency: xxx |
| Paper | xx | o | o | o | xxx | o | Efficiency: xxx |
| Glass | xxx | o | x | o | xxx | o | Higher glass recycling: xx |
| Non-ferrous metals/alloys | xxx | xxx | x | x | xxx | x | Efficiency: xxx Recycling high quality non-ferrous: xxx Inert anodes: xxx |
| o: Limited or no significant application foreseen x: Possible application but not main route or wide scale application xx: Medium potential | | | | xxx: high potential xxx : Sector already applies technology on large scale (can be expanded in some cases) (*): In particular for ammonia and ethylene oxide | | | |