# Energy Intensive Industries' Contribution to the European Commission "Clean Planet for All" Strategic Vision


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*On behalf of 11 Energy Intensive Industries*


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# High Level Group Energy Intensive Industries

Background:

In September 2018, the 11 Energy Intensive Industries(*) presented a report by the VUB – IES as their contribution to the EC long term strategic vision “A Clean Planet for All” (published on 28/11/2018).


(*) Cefic, Cembureau, Cerame-Unie, CEPI, EuLA, EuroAlliages, Eurofer, Eurometaux, FertilizersEurope, FuelsEurope and Glass Alliance Europe

# Profiling EIIs

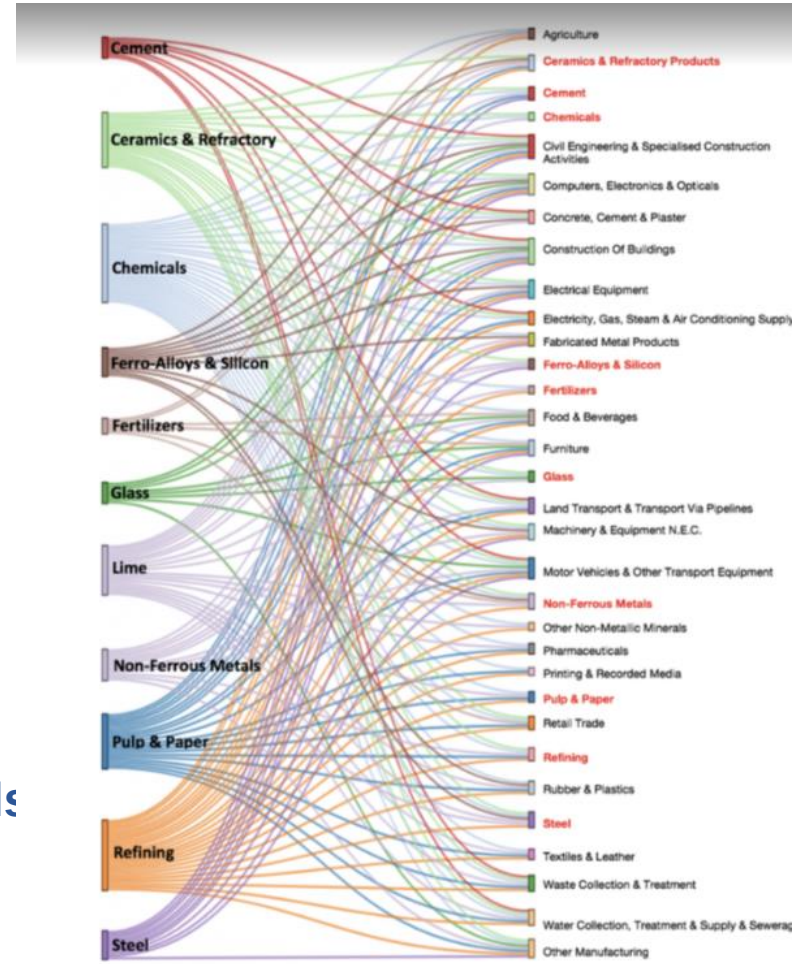
Big efforts have been already made to reduce our GHG impact over time.

EIIs reduced greenhouse gas emissions by 36% between 1990 and 2015 and contributed significantly to the EUs overall emission reductions in same period (-24% in 2015 ref. 1990).

EII exposed to a high-level international competition.

EII are deeply interconnected.

**EIIs are the lifeblood of key value chains in EU but als their supply chains are linked to other EIIs.**

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# Summary of Technology Options

| | 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<br>Recycling high quality steel: xxx |
| **Chemicals fertilizers** | xxx | xxx | xxx | xxx | xxx | xxx(*) | Use of waste streams (chemical recycling): xxx |
| **Cement Lime** | xx (cement)<br>x (lime) | o (cement)<br>o (lime) | x (cement)<br>x (lime) | xxx (cement and lime) | **xxx** (cement)<br>x (lime) | xxx (cement and lime) | Alternative binders (cement): xxx<br>Efficient use of cement in concrete by improving concrete mix design: xxx<br>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**<br>Recycling high quality non-ferrous: xxx<br>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*[116]

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# Framework conditions

## Two Horizontal Challenges

### SPACE

*The industrial transition will have to happen in highly competitive and dynamic international environment.*

### TIME

*For most energy intensive companies, 2050 is just one (large) investment cycle away from today.*

## Three main R&D challenges

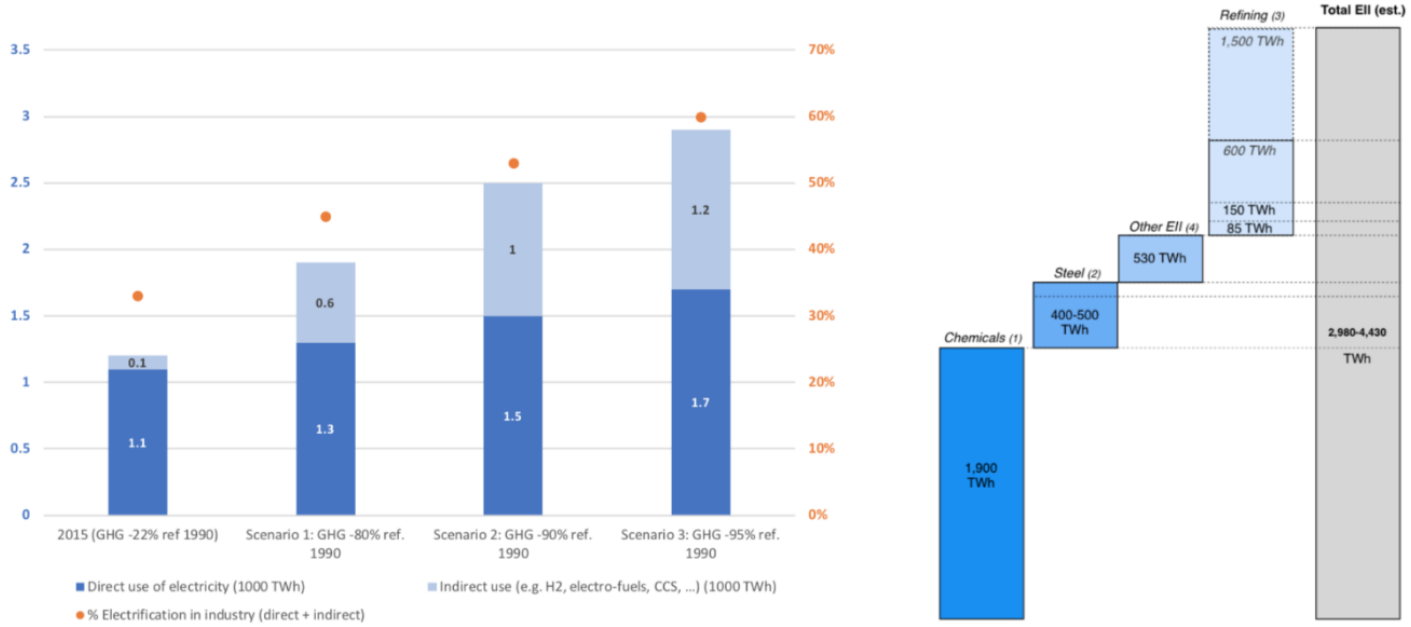
1. The need to scale up breakthrough technologies towards demonstration and commercialisation.
2. Optimal combination and integration of technologies (incl. Breakthrough technologies).
3. An inreased focus on cost reduction (OPEX).

# Framework conditions

Other (non minor!) challenges…

- **Accessibility to a high amount of low $CO_2$ electricity at a competitive cost**

## Low-CO2 electricity challenges: access + cost




Estimates on future electricity demand by industry (left: Eurelectric, right: aggregation of EII sectoral

# EII as part of solution

- Design and implementation of **a EU flagship mission oriented R&D programme** addressing main challenges towards competitive low-$CO_2$ processes in EIIs. Adequate support for demonstration of advanced low-$CO_2$ technologies towards market readiness.
- **Strategic alignment of the EU's energy and industry transitions** in particular (ample and competitive supply of low-$CO_2$ electricity to EIIs).
- Development of **adequate financing mechanisms for high CAPEX (low-$CO_2$) investments** including support for replacement of existing and productive assets. A state aid regime that acknowledges the size and scope of the industrial low-$CO_2$ transition.
- **Strategic industrial low-$CO_2$ infrastructure planning** with a focus on regional and transnational industry clusters and industrial symbiosis & development of EU industrial projects of common interests.
- **Smart regulatory instruments** that can assist with lead market creation for low-$CO_2$ products and processes (e.g. public procurement & development of low-$CO_2$ standards for products).
- During the transition **continued protection** for energy intensive industries to safeguard competitiveness and investments in Europe.

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# THANK YOU FOR YOUR ATTENTION

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