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REINVENT: Pathways to fossil-free basic industries and industrial policy implications

COP25-Side Event: EU Technology Transition for Industry –
The Role of Research and Innovation Programmes

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The H2020: REINVENT – project (Oct. 2016 – Sep. 2020): Realising Innovation in Transitions for Decarbonisation



Deep decarbonisation by innovation means reframing the industrial innovation system:

From a technology focus to an integrated value chain focus.

8 research groups work together with stakeholders from industry and society

- **4 basic industrial sectors** covered (steel, plastics, paper, food; + finance)
- **100 cases** of past and future innovations analysed
- **2 energy system models** applied



REINVENT sectors are crucial to achieve carbon neutrality by 2050

They currently stand for 46% of CO₂ and 55% of industrial energy use in the EU

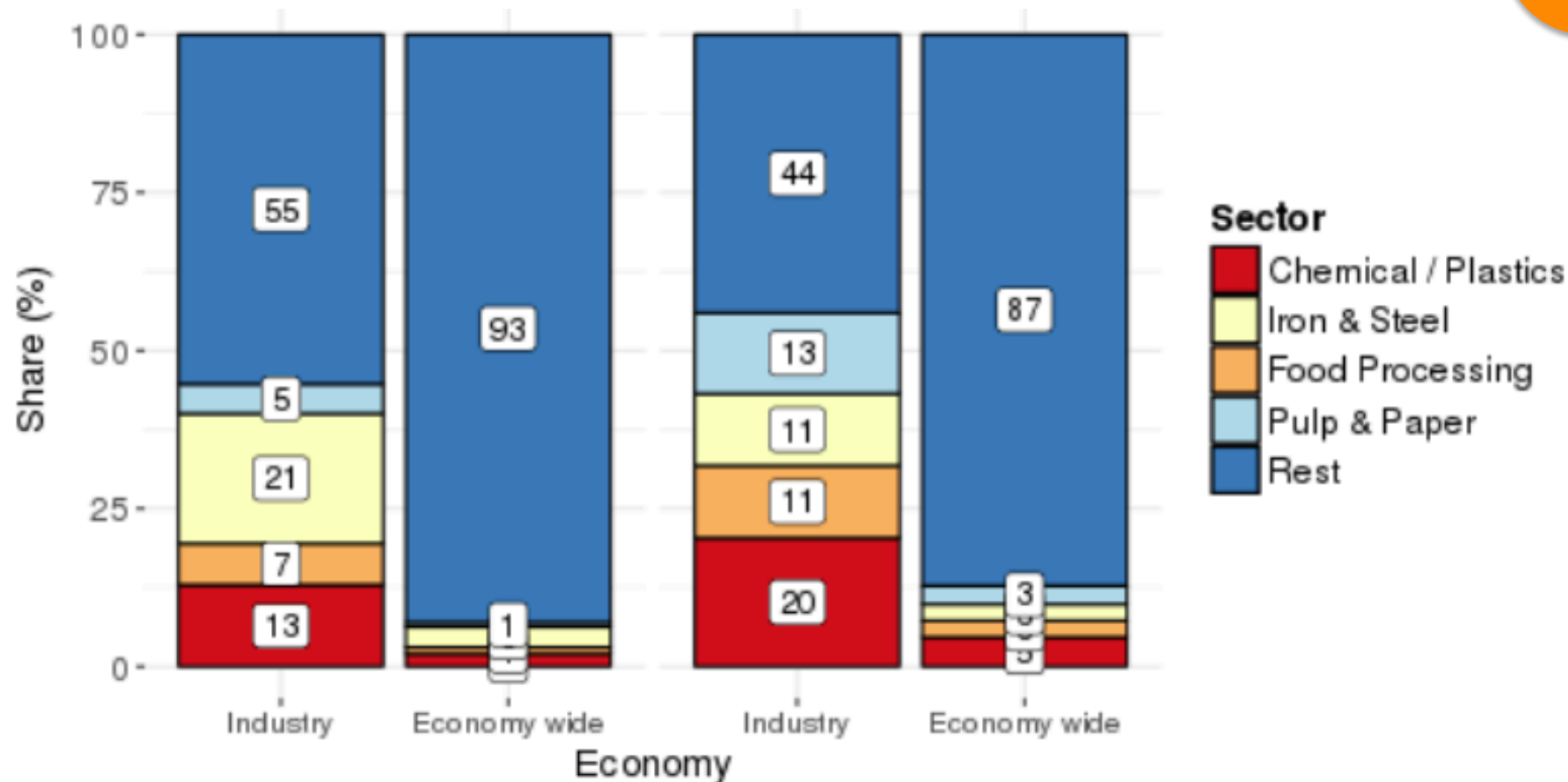


Figure 1. Current EU energy use and direct CO₂ emissions of the REINVENT sectors relative to total economy wide and industry totals

Example Steel making: Investment & policy gap to achieve GHG mitigation targets

Results from model comparison

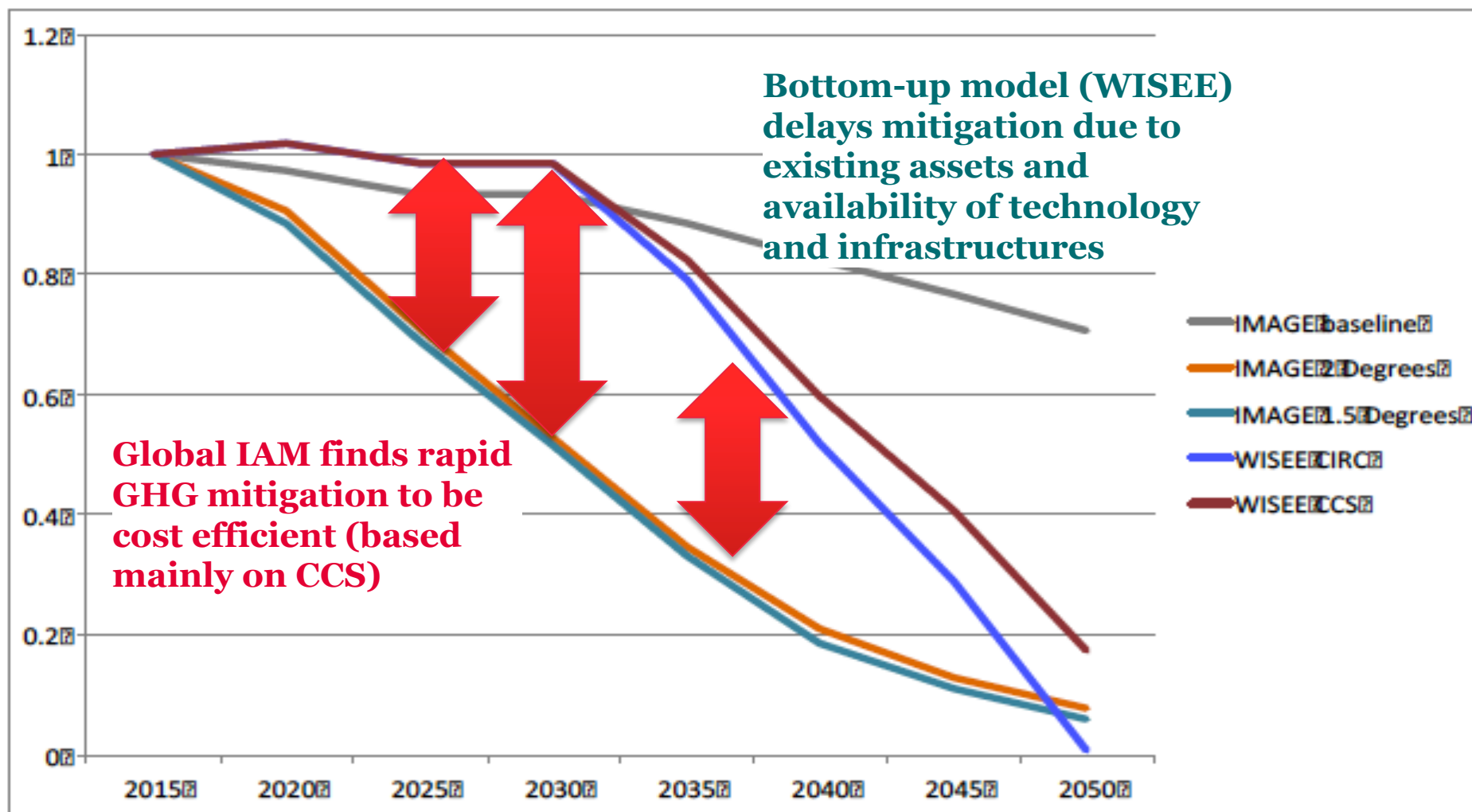
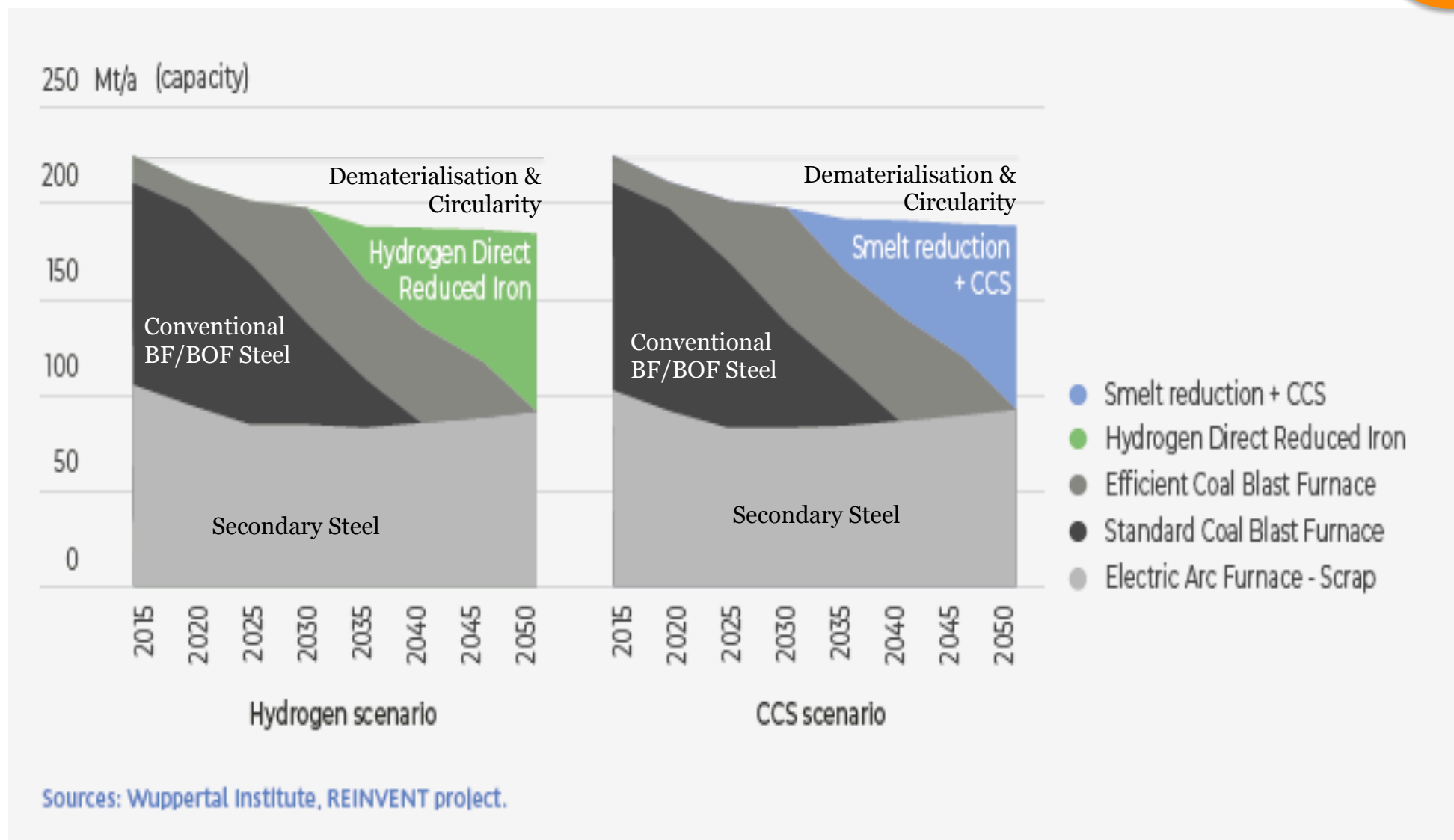


Figure 32. Projected CO₂ emissions in the iron & steel sector in the four decarbonisation scenarios and baseline, Europe (IMAGE and WISEE)

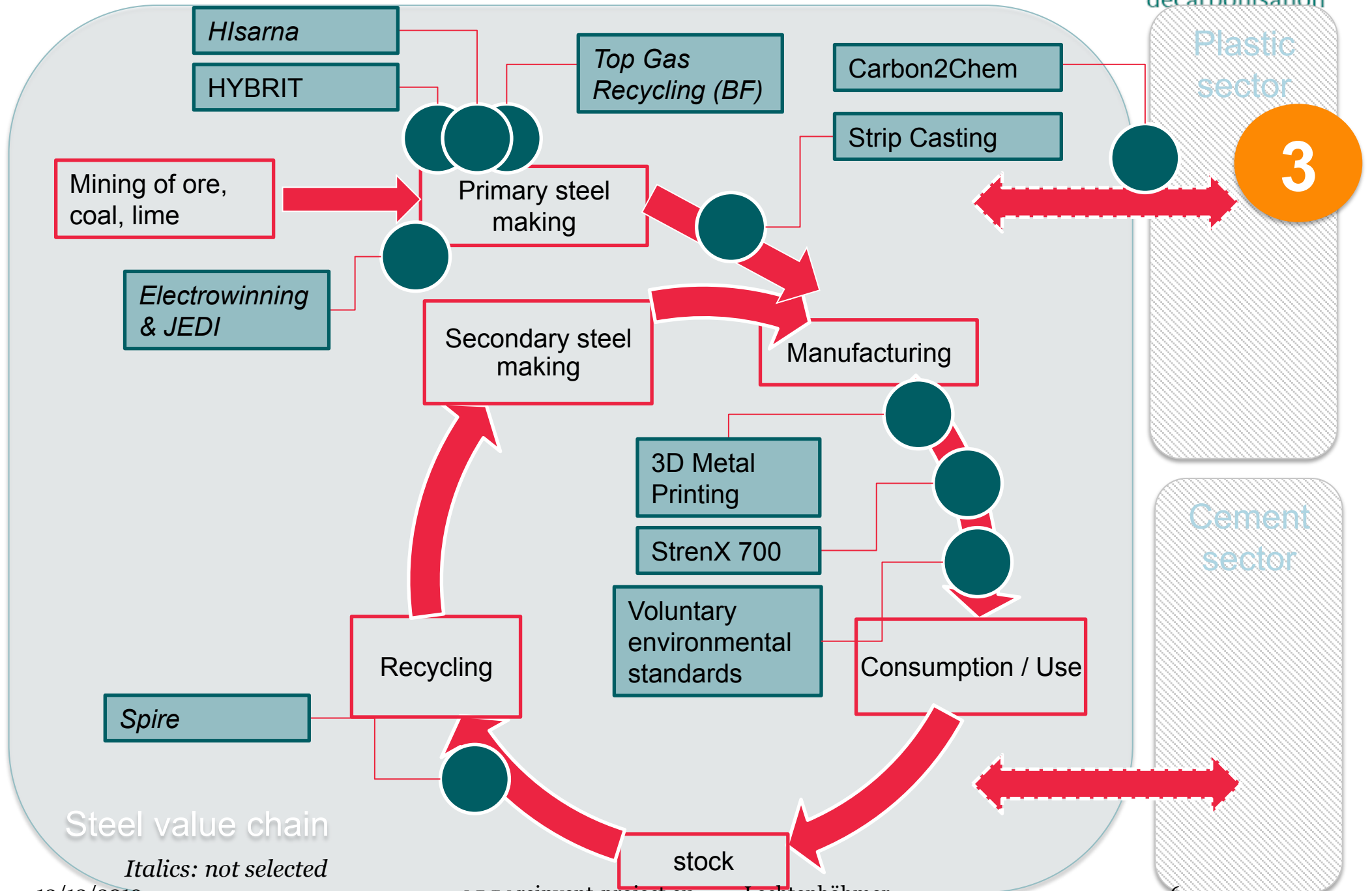
Example: Steel – A long term strategy is needed for reinvesting the EU's industrial stock

No blast furnace will be (re)invested in the EU from 2030 (at the latest)

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Take a value chain perspective (REINVENT cases)



Steel value chain

Italics: not selected

Regional and cross industrial cooperation are important institutional innovations

Innovation in basic materials industries needs **cross-industrial cooperation and industrial symbiosis** at regional scale

This means cooperative collaboration between companies, administration, science and society in industrial regions.

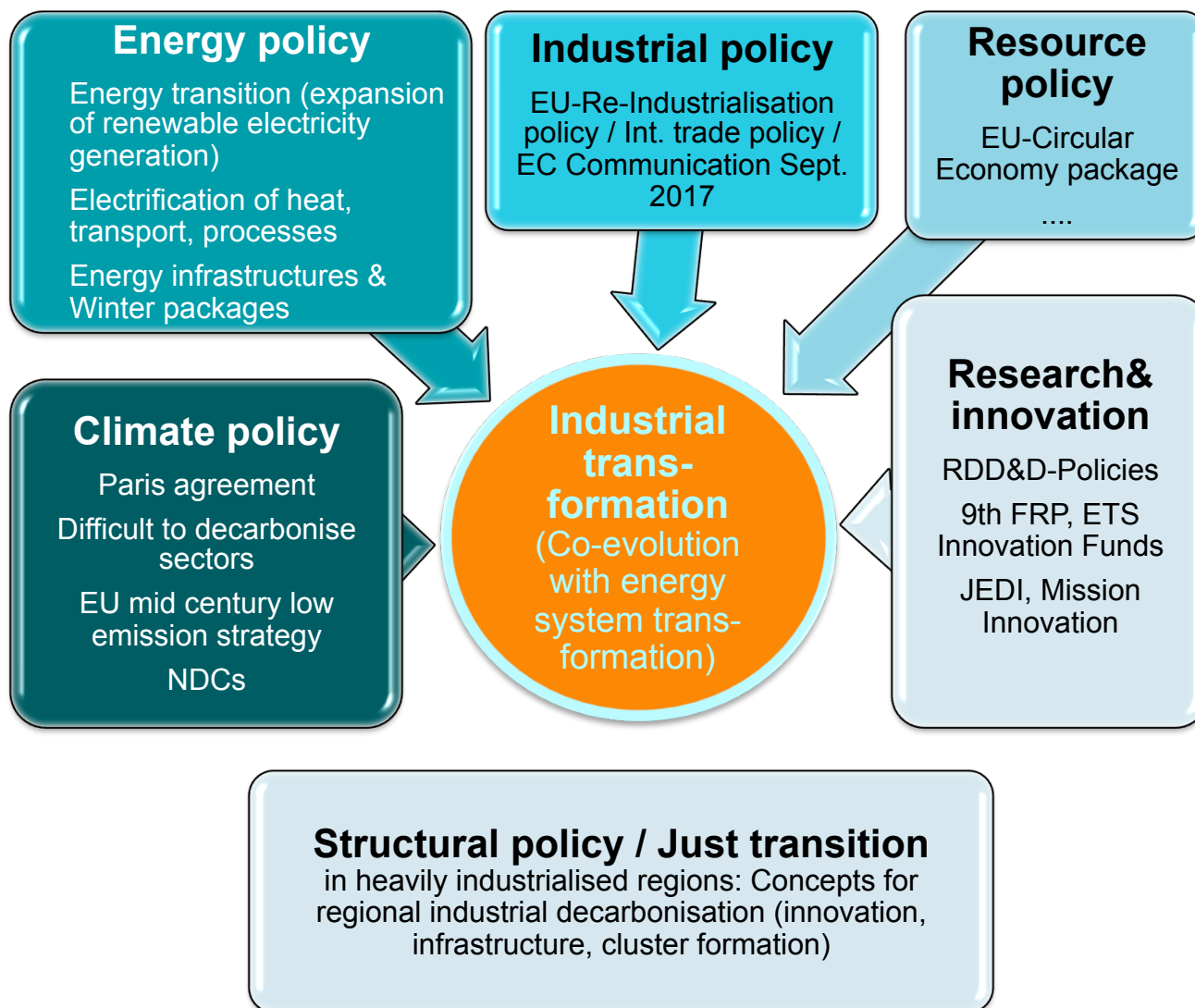
Examples are the initiatives

- › **IN4climate.NRW** in Germany or
- › **HYBRIT** in Sweden.

Via important roles of REINVENT consortium members in these projects there has been intensive exchange of ideas and concepts and the findings from REINVENT are feed into and informed from these initiatives.



The EU Long term Strategy and the European Green Deal have to go hand in hand to make „Zero Carbon by 2050“ a driver for innovation and competitiveness



A new paradigm of industrial policy needs to be

- *Clearly target oriented* towards sustainability and deep decarbonization as core long term targets
- *Integrating* policies for climate, energy, innovation and resource efficiency with trade, growth and structural policies
- And *including* all steps of the value chain and all societal stakeholders



Thank you!

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www.reinvent-project.eu

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PBL Netherlands Environmental Assessment Agency