

Climate Friendly Materials Platform

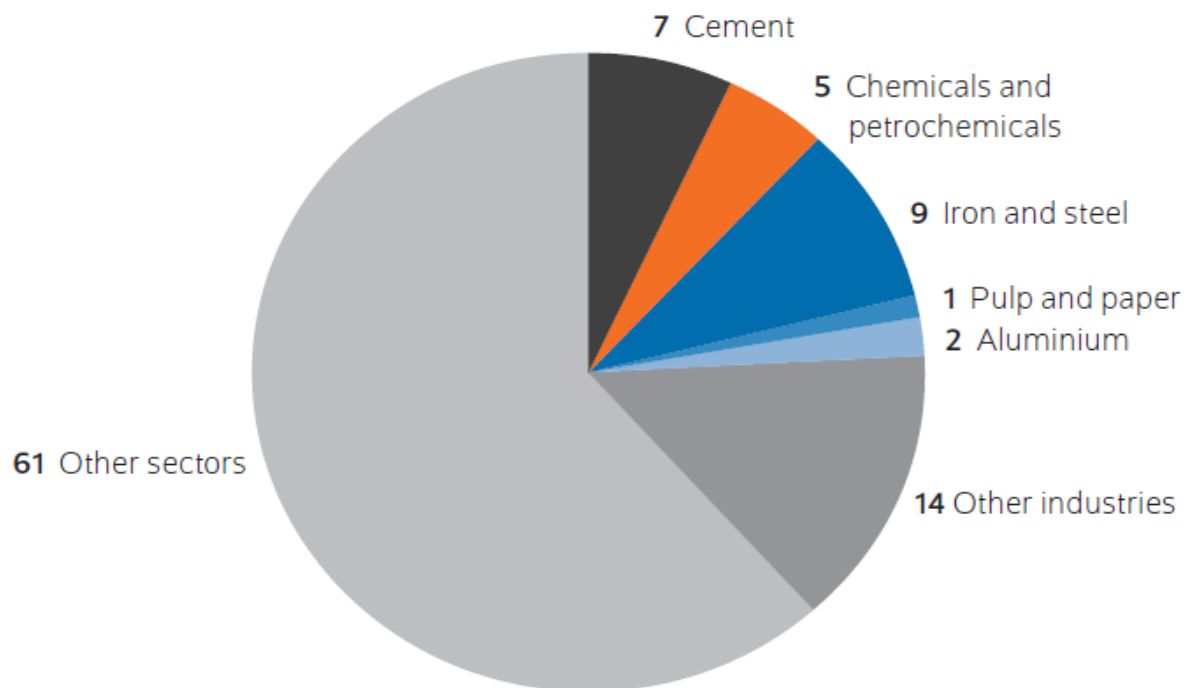
Policies for a Climate-Neutral Industrial Sector

Olga Chiappinelli (DIW Berlin)

25th EAERE Conference, Berlin, 25th June 2020

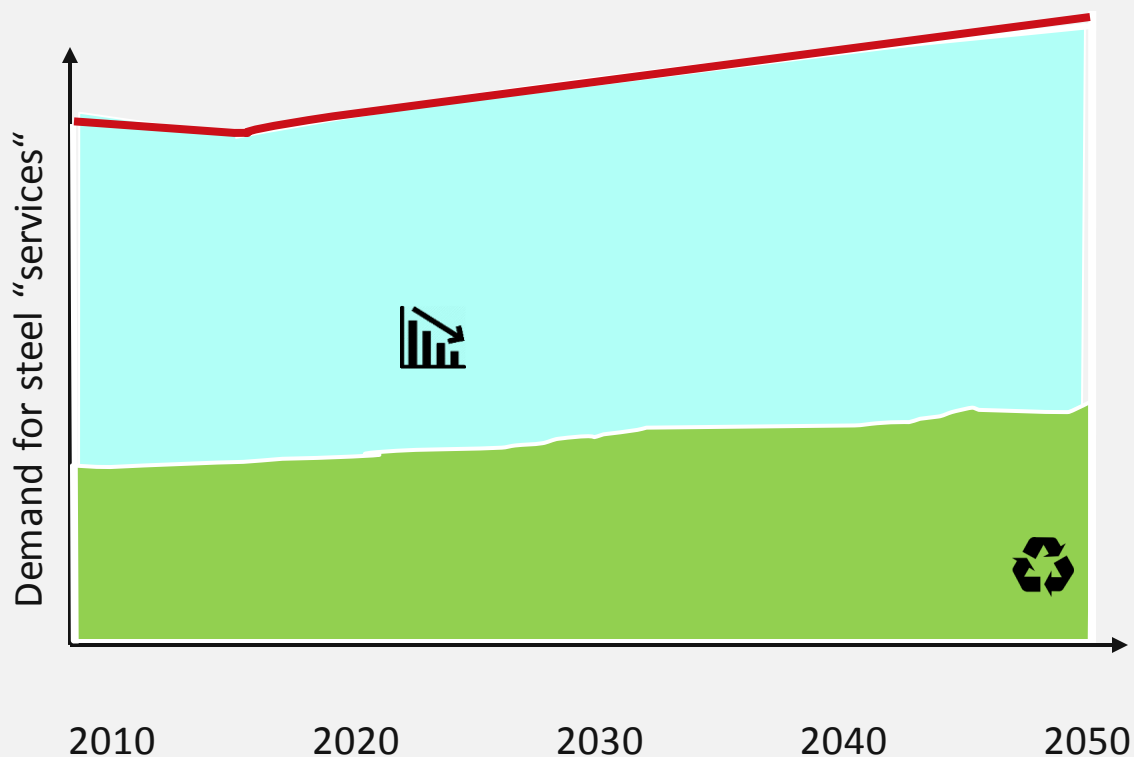
1 Basic materials = 25% of global CO2 emissions, 16% of EU GHG emissions

Percentage contribution of various basic materials in global CO2 emissions (2014)



Climate neutrality by 2050 can only be achieved with the help of the basic materials sector.

Illustration for European steel sector (no numerical simulation)

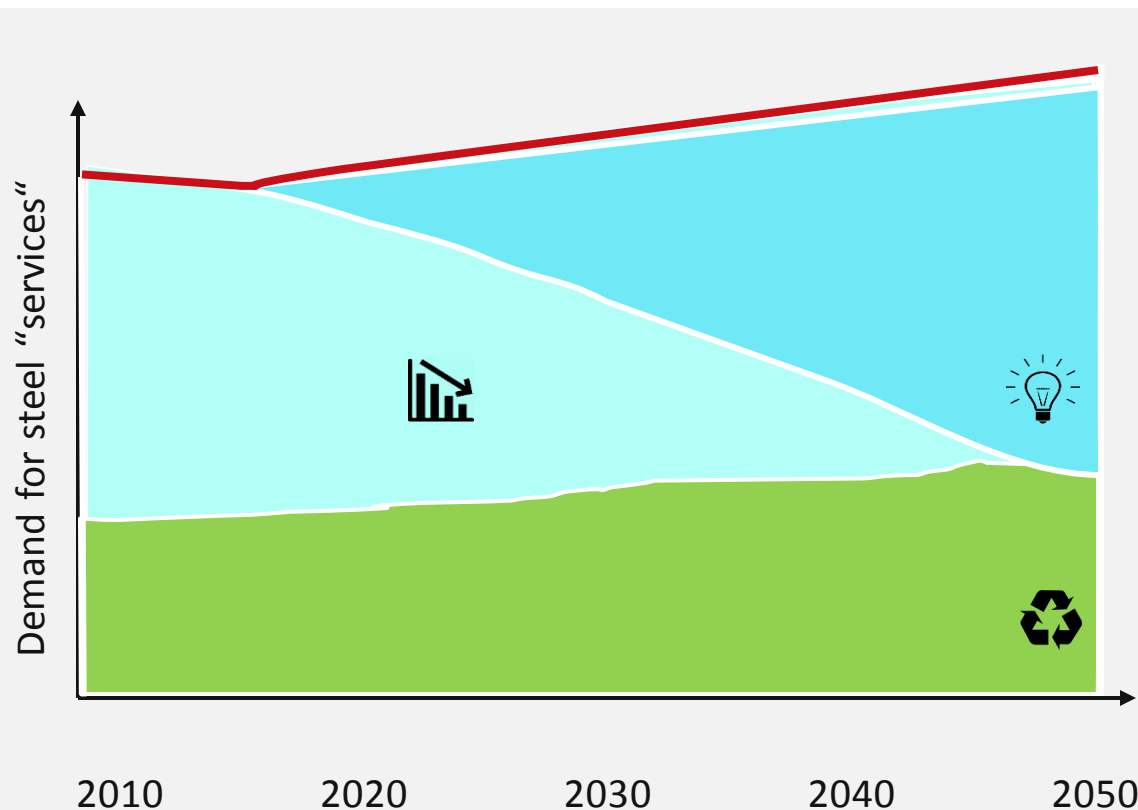





Reduced emissions from conventional processes



More and pure steel from scrap

Illustration for European steel sector (no numerical simulation)

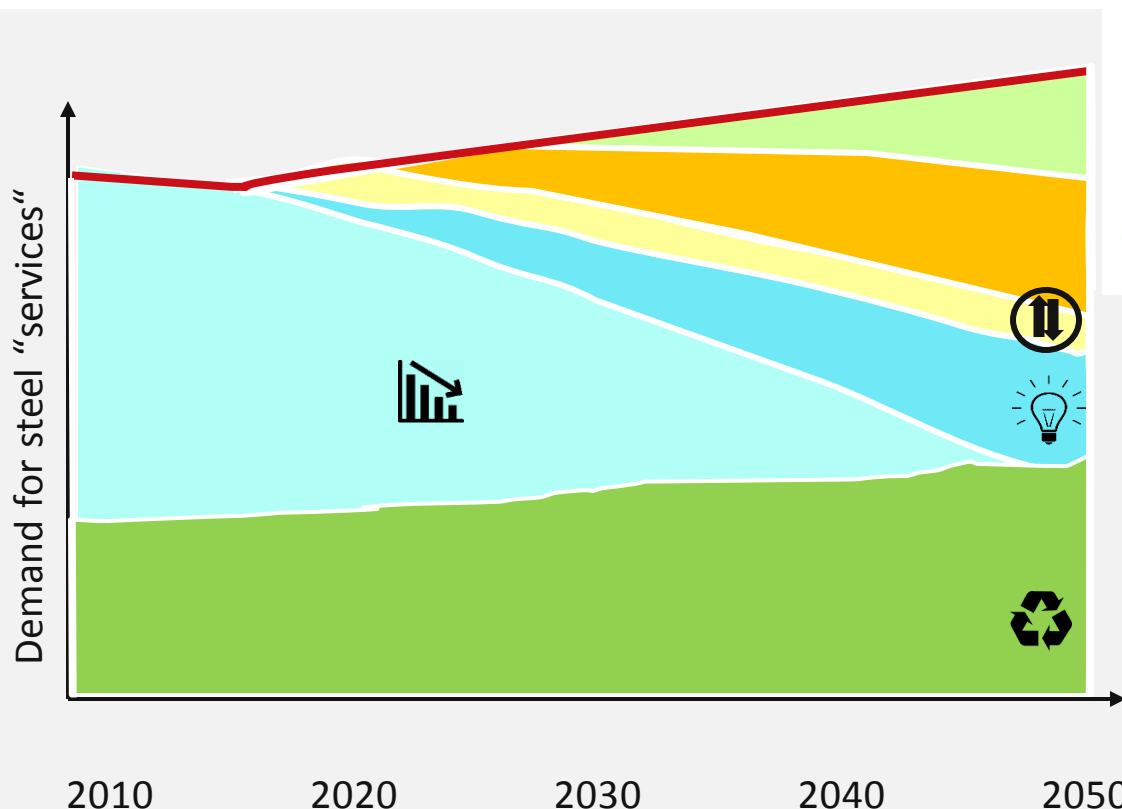






-  Low-carbon steel making
-  Reduced emissions from conventional processes
-  More and pure steel from scrap

2

A portfolio of mitigation options for carbon neutrality

Illustration for European steel sector (no numerical simulation)

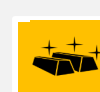
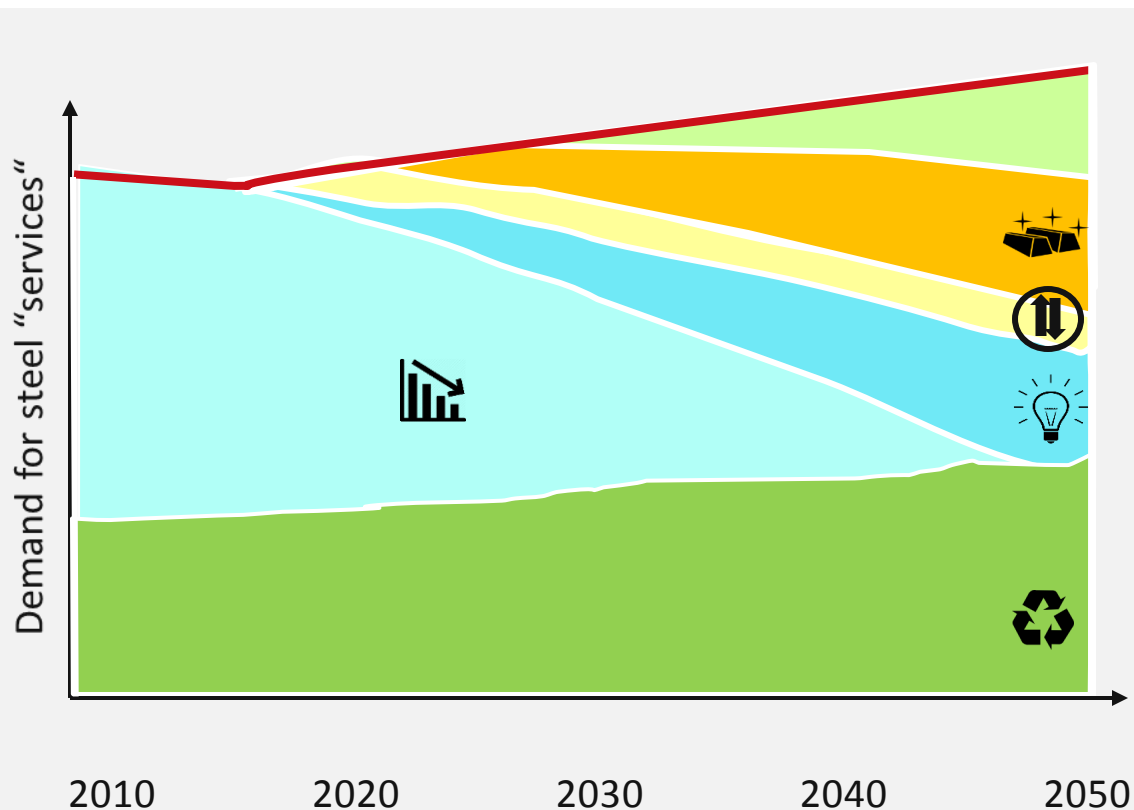


-  Material substitution
-  Low-carbon steel making
-  Reduced emissions from conventional processes
-  More and pure steel from scrap

2

A portfolio of mitigation options for carbon neutrality

Illustration for European steel sector (no numerical simulation)



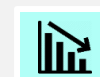
Higher value steel / less steel in products/more efficient manufacturing



Material substitution



Low-carbon steel making

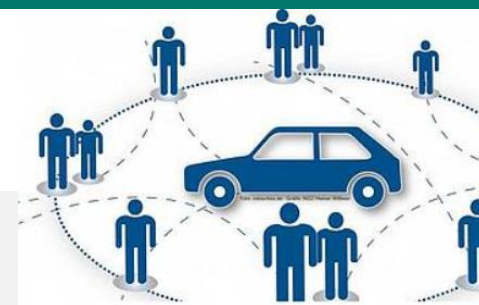
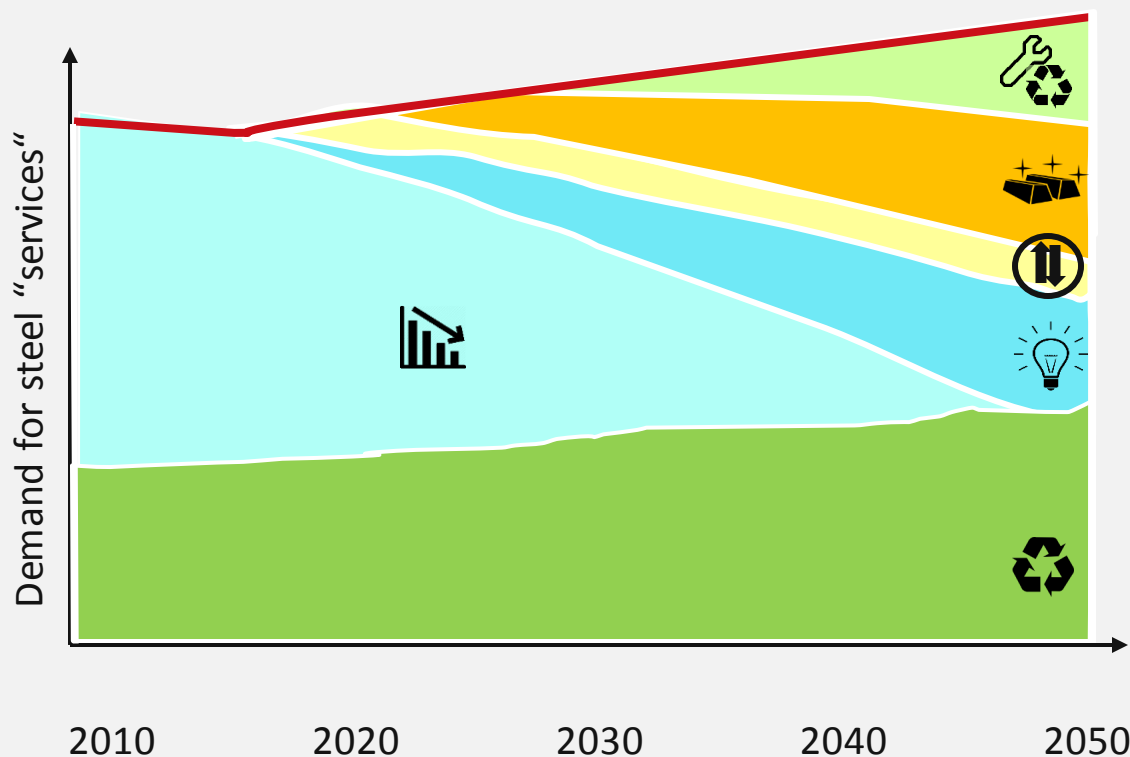


Reduced emissions from conventional processes



More and pure steel from scrap

Illustration for European steel sector (no numerical simulation)



Share, repair, reuse



Higher value steel / less steel in products / more efficient manufacturing



Material substitution



Low-carbon steel making



Reduced emissions from conventional processes

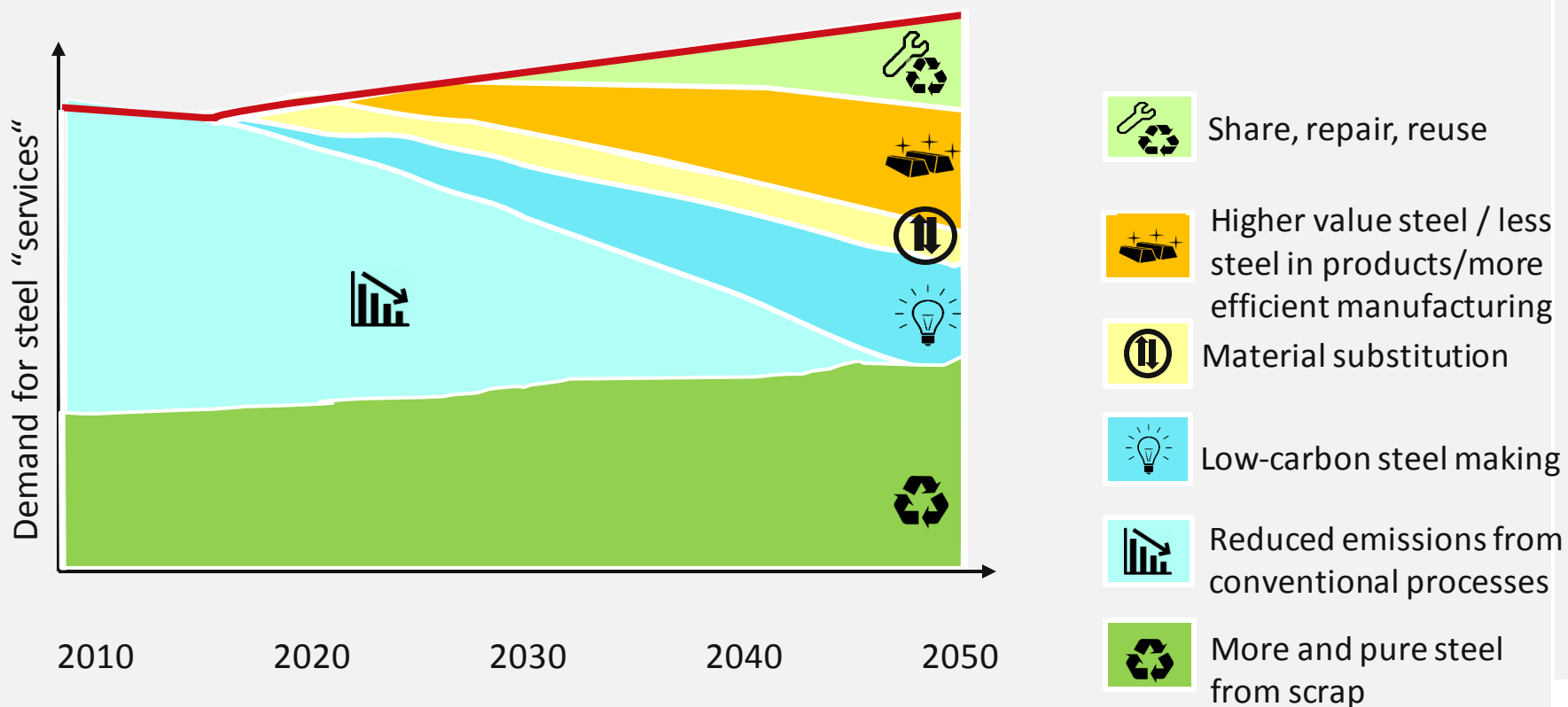


More and pure steel from scrap

Engagement, information and training programs

Public support for investment in infrastructure and innovation

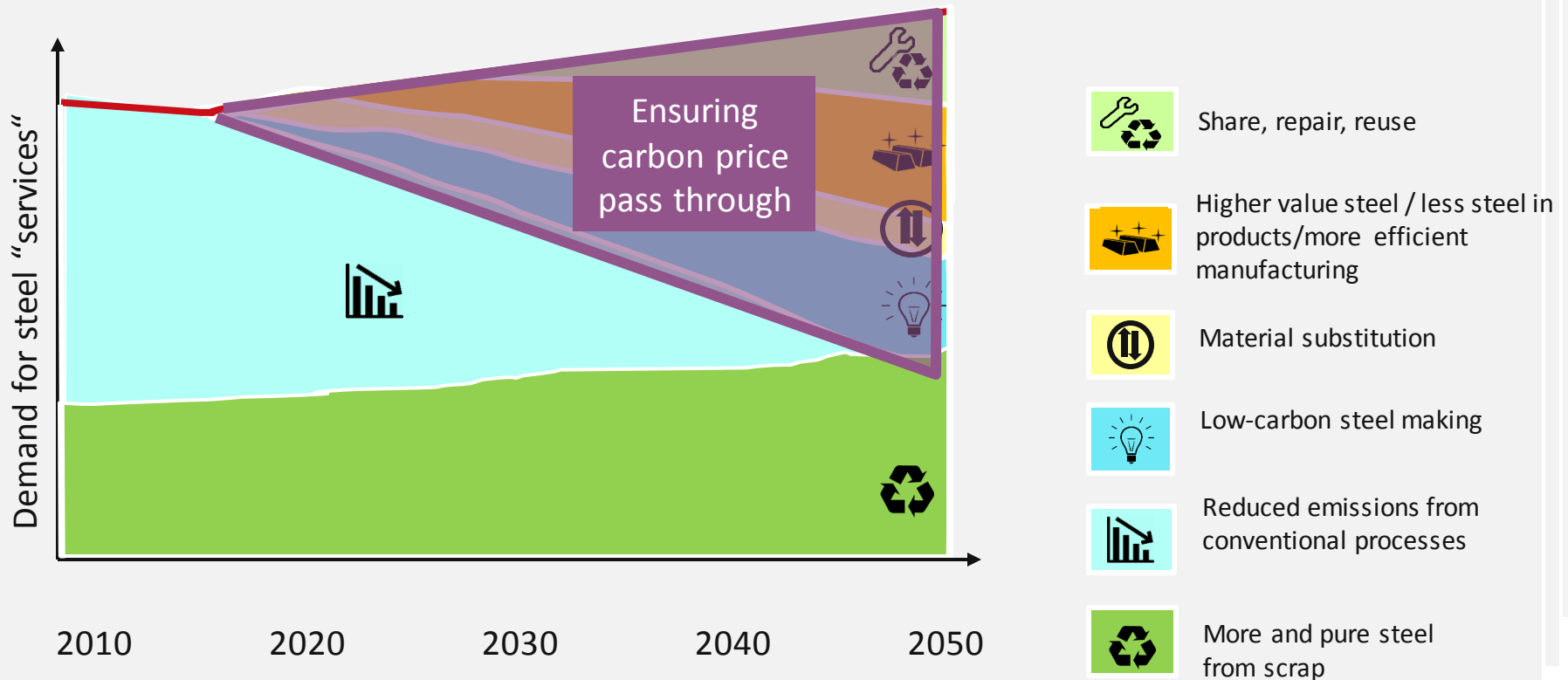
Policies to create markets



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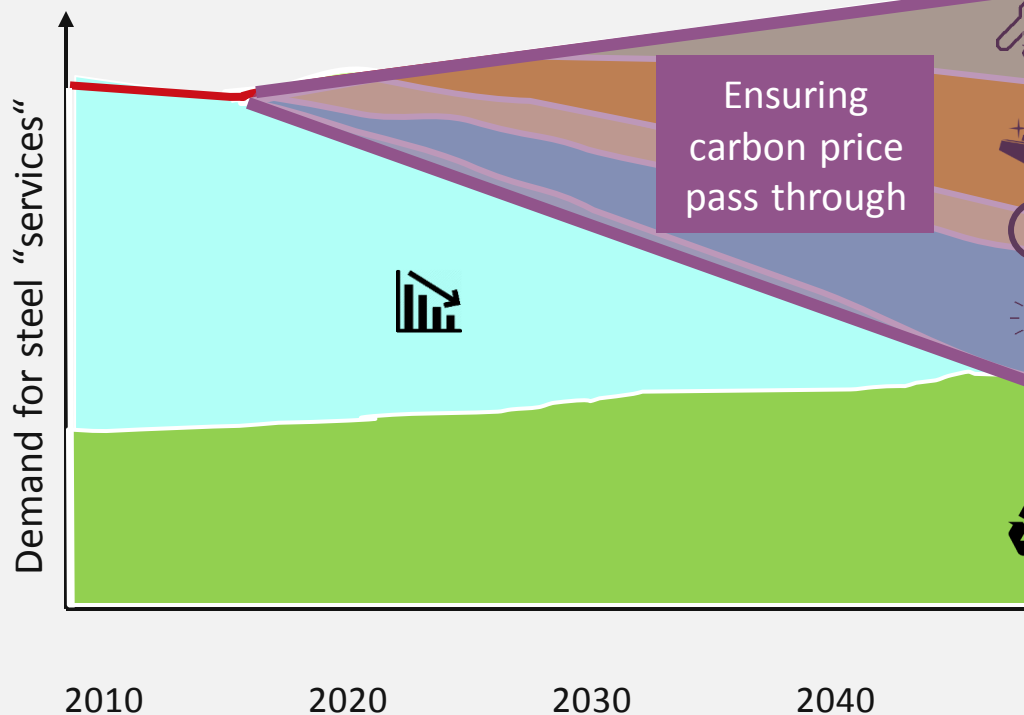
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Adding a “climate contribution” to EU ETS

- Extend EU ETS to include charges levied on sales of materials to consumers
- Based on weight of carbon intensive material in product
- Re-instate the carbon signal in the value chain and secure carbon leakage protection via free allocation
- Revenues can be redistributed as per-capita reimbursement

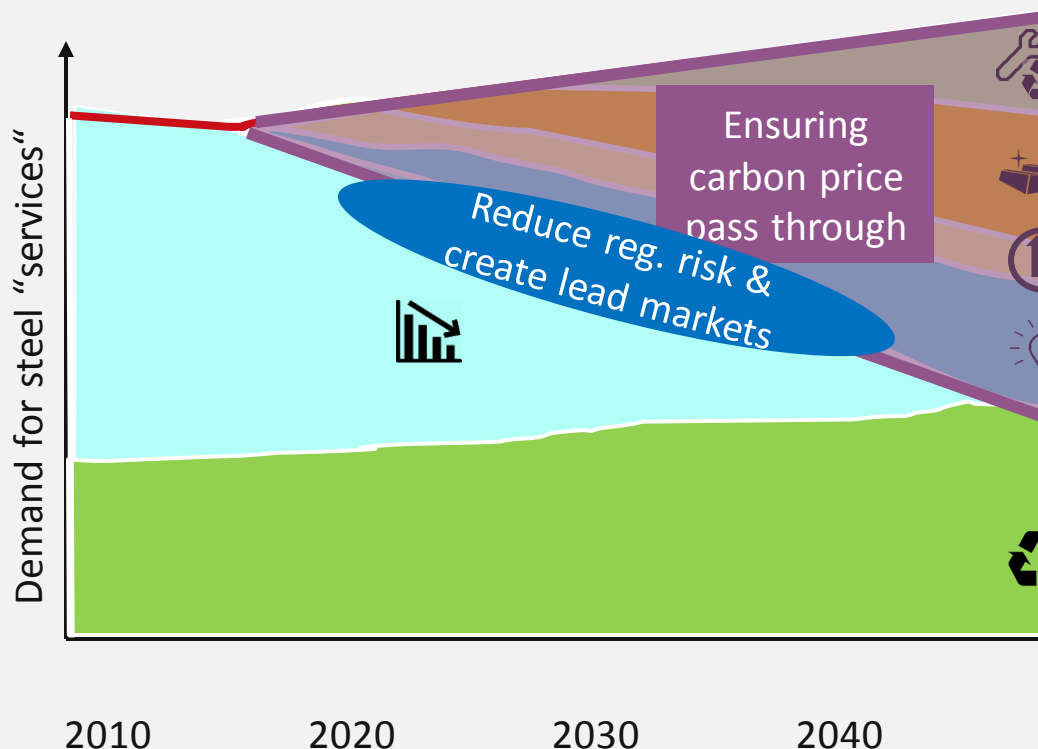
Alternative to Border Carbon Adjustments:

- *controversial from trade-law/politics*
- *administratively complex*

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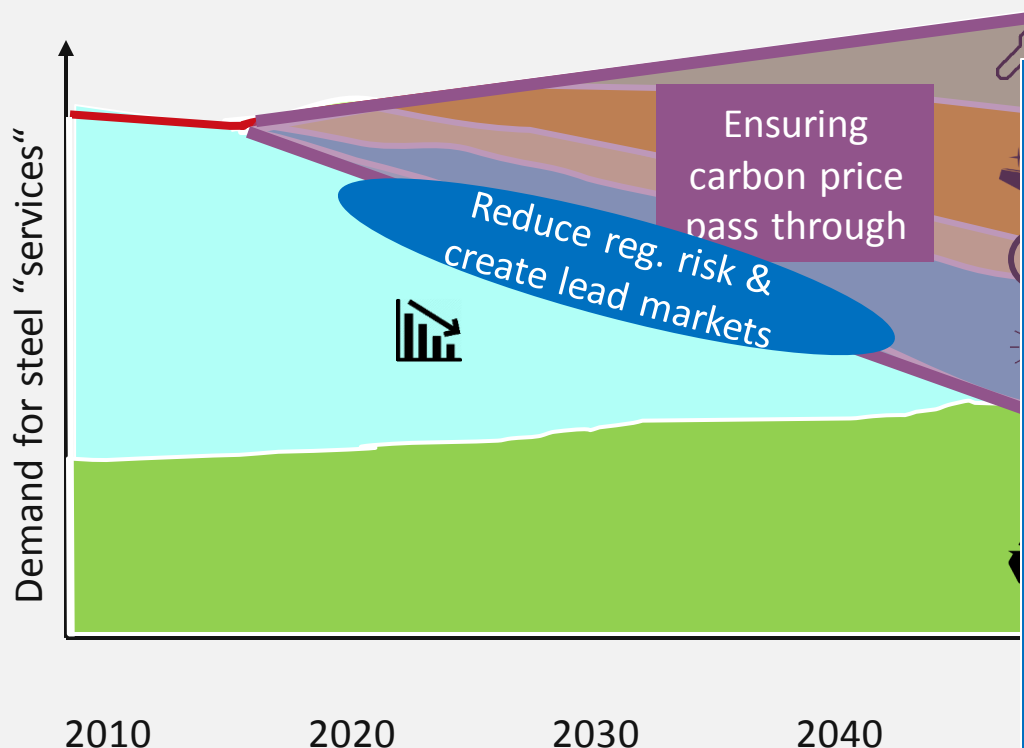


Government-backed Project-based Carbon Contracts for Differences (CCfDs)

- Contracts between a national government and a company developing an innovative low-carbon project
- Pay out the difference between EUAs price and agreed “strike” price
- Stabilize revenue streams and reduce financing cost of low-carbon projects
- Help cover the incremental cost of low-carbon projects so that commercialization becomes viable
- Allows governments to create lead-markets for low-carbon processes and materials
- Address regulatory risk

Source: Richstein, J. (2017), “Project-Based Carbon Contracts: A Way to Finance Innovative Low-Carbon Investments”, DIW Discussion Paper No. 1714; Sartor, O. and Bataille, C. (2019), “Creating a business case for carbon-neutral basic materials: How Carbon Contracts for Difference could help kick-start commercial-scale projects”, IDDRI Study No. ST06-19

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Government-backed Project-based Carbon Contracts for Differences (CCfDs)

Publicly guaranteed Contracts for Differences for Renewables (CfDs)

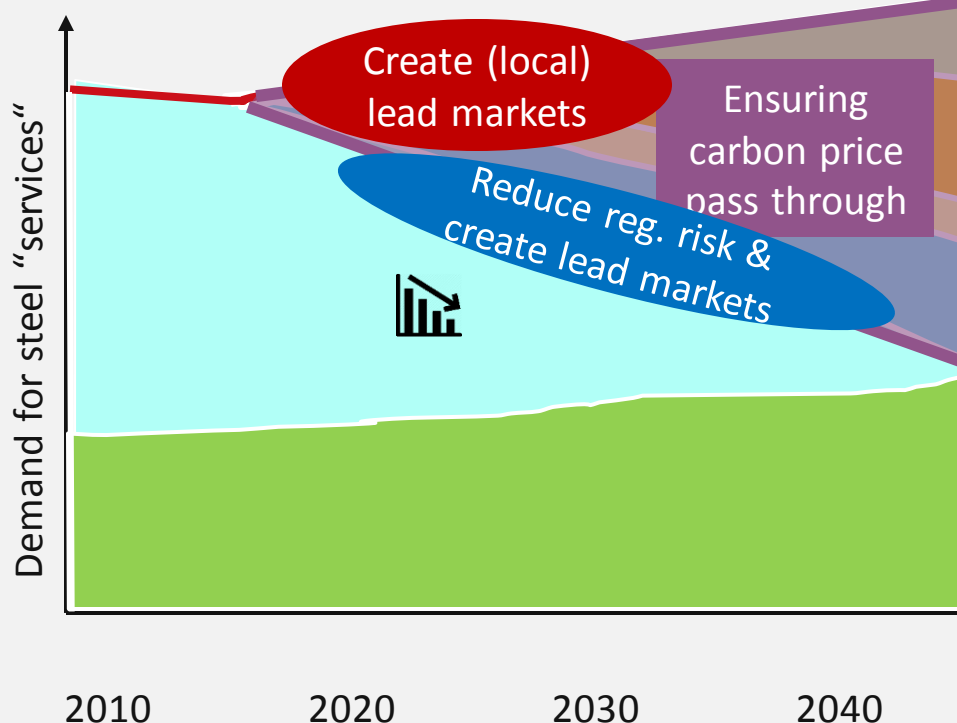
- Pay out the difference between wholesale electricity price and agreed strike price
- Hedge renewable energy investors against electricity price volatility, lowering financing costs
- Can provide cost-competitive supply of large volumes of low-carbon electricity

Source: Richstein, J. (2017), "Project-Based Carbon Contracts for Renewable Energy Investments", DIW Discussion Paper No. 1714; Sartor, O. et al. (2019), "Policies for carbon-neutral basic materials: How Carbon Contracts for Differences can support large scale projects", IDDRI Study No. ST06-19

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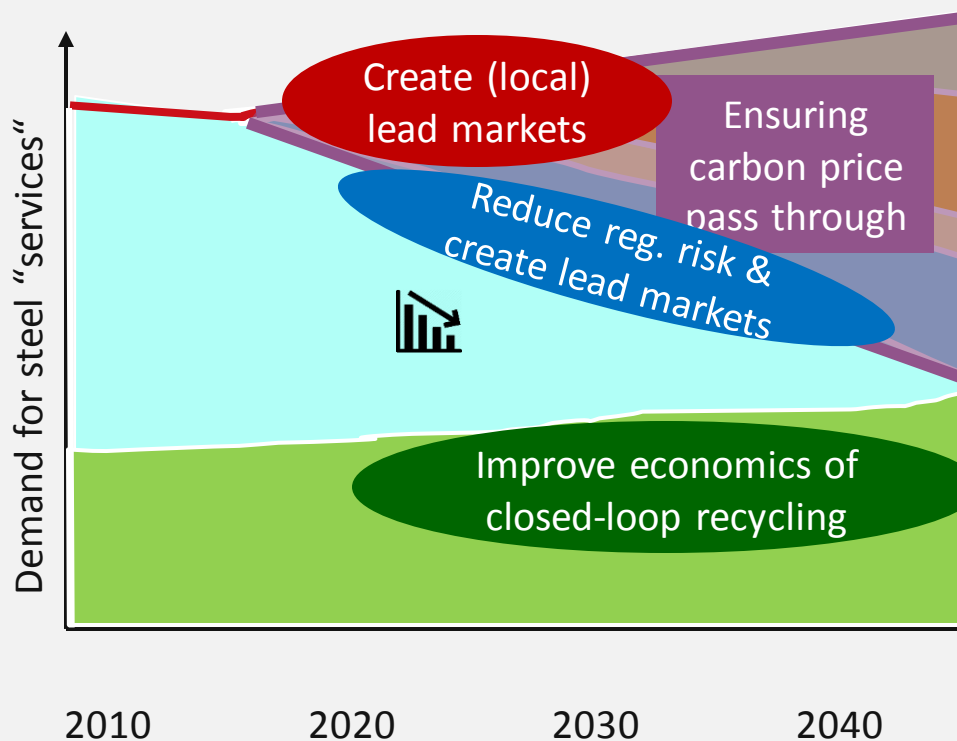
Green Public Procurement

- Accounts for the environmental quality in the award of public contracts
- Includes shadow carbon price (> ETS), functional carbon or technical requirements
- National/local authorities can create lead markets for low-carbon and recycled materials and material efficiency
- Allows governments to respond to local initiatives and national and European emission reduction targets
- Local authorities need to receive financial support for incremental cost and capacity building

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Carbon-extended Advanced Disposal Fees

- Address end of life emissions of waste streams and improve incentives for recycling (e.g. vs plastic incineration)

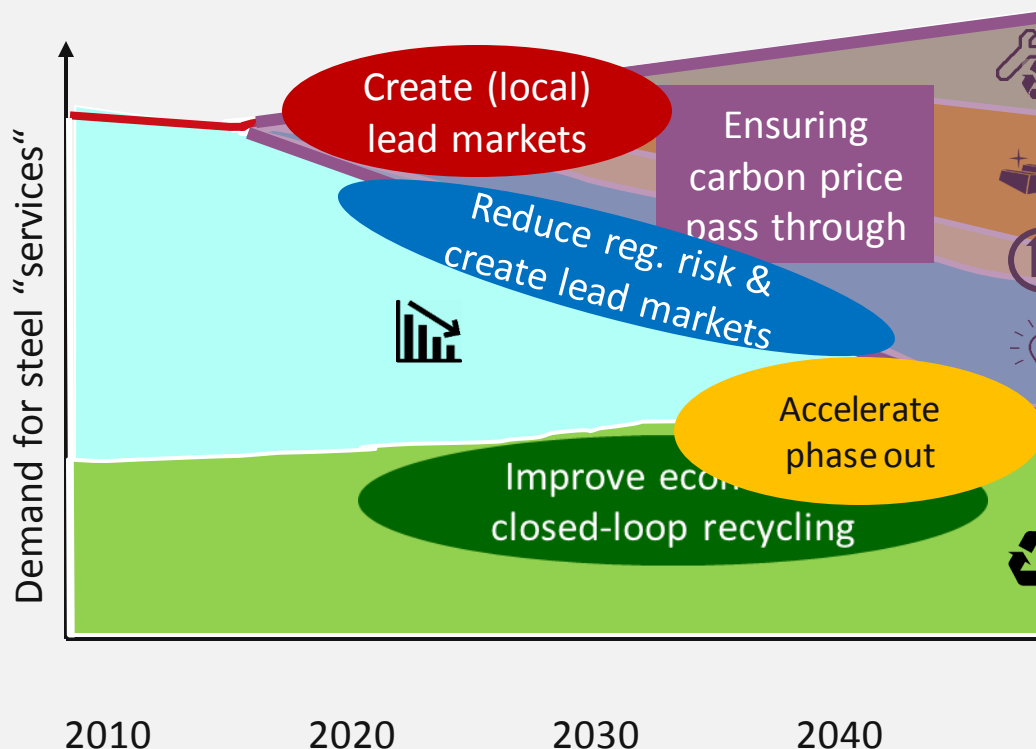
Product design requirements (e.g. Reform of Eco-Design Directive)

- Reduce the variety of materials and alloys to facilitate sorting and treatment
- Enhance upcycling of waste streams as input for processes (e.g. packaging)
- Can complement GPP to create demand for recycled materials
- *May enhance efficient material use, repair and reuse*

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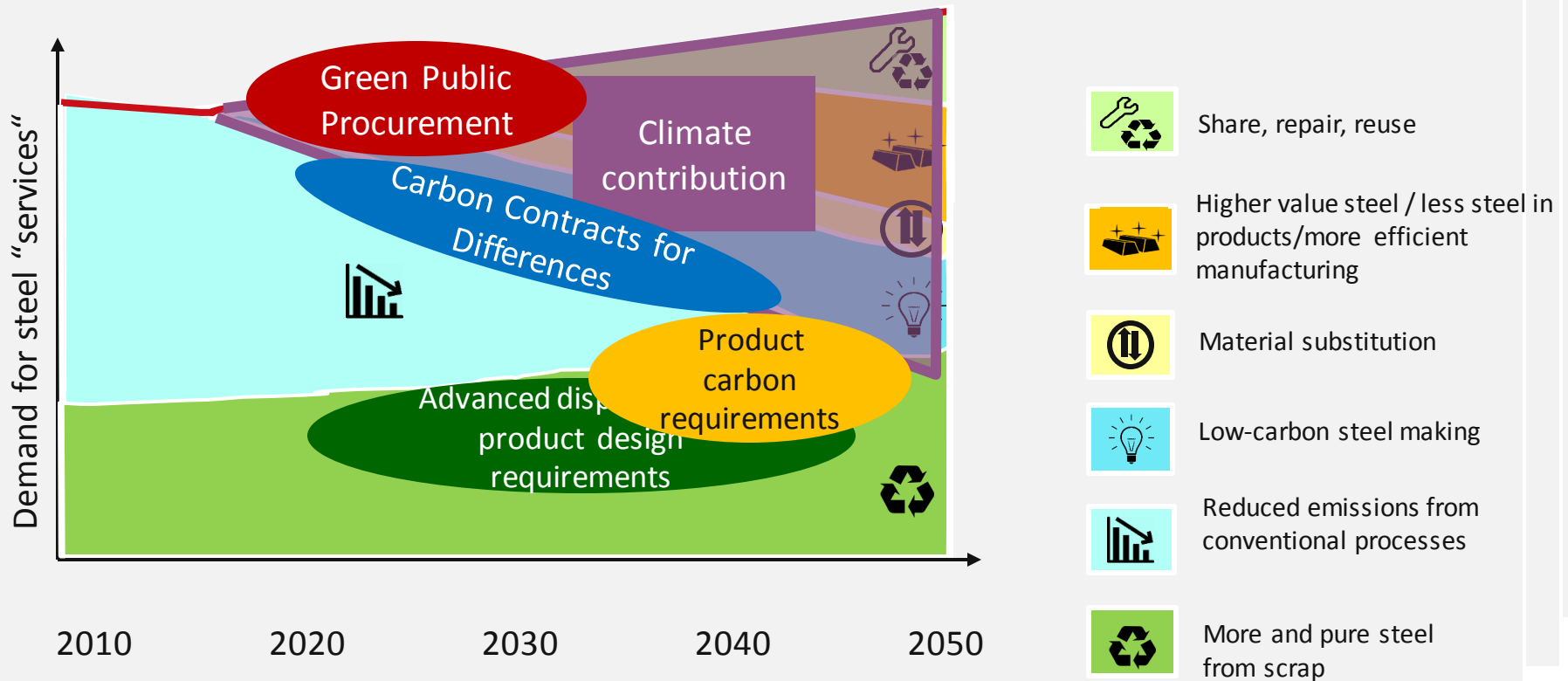
Product carbon requirements

- Governments can ban the sale in their territory of products that are not fully based on climate-neutral materials
- Can help accelerating the phase out of carbon-intensive processes
- Can help signaling that new investment in BAU is unviable

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- Can contribute to the short-term recovery objectives of revitalizing the economy and creating jobs
 - **Targeting** public funds on innovative low-carbon production and recycling technologies can trigger private investment
 - Projects are "shovel ready", so a **timely** boost to companies activities and jobs is possible
 - **Temporary** support is sufficient if combined with a policy package that ensures long-term incentives
- Can catalyze inclusive transformation towards a climate neutral and more resilient economy
 - Jump start the **decarbonization** and enhance long-term economic competitiveness of industrial sectors and create jobs across EU member states
 - Enhance **resilience** of EU value chains by ensuring access to climate friendly materials and reducing material cost exposure through closed-loop recycling

Investments in climate-friendly materials to strengthen the recovery package – JUNE 2020

<https://climatestrategies.org/publication/cfm-recovery>

