



Preparatory Study on iron and steel products

First on-line stakeholder meeting

25th June 2024

WEBEX SESSION

ETIQUETTE FOR VIRTUAL MEETING PARTICIPANTS

- ❖ Please indicate your **NAME, SURNAME** and **ORGANISATION** on Webex
- ❖ **MUTE YOUR MIC AND SWITCH OFF** your **CAMERA** (unless you have the floor)
- ❖ **POST** your **QUESTIONS** in the **WEBEX Q & A Box**. You will be **INVITED** to take the floor to formulate your question **ORALLY**.
- ❖ Please clearly state your name and affiliation the first time you are given the floor.
- ❖ Please note that the (Webex) meeting will be **RECORDED** to help prepare the meeting minutes, but will not be livestreamed or made publicly available for replay. This implies that by participating to the meeting, you grant your permission for the **JRC** to record the meeting.

Welcoming – JRC

Mikel Landabaso – Director JRC B – Fair and Sustainable Industry

Opening Remarks – DG GROW

Joaquim Nunes de Almeida – Director GROW I - Mobility & energy intensive industries

The Ecodesign for Sustainable Products: overview and state of play

Paola Zanetti – Senior Expert – GROW I.3

ESPR – the ecodesign approach

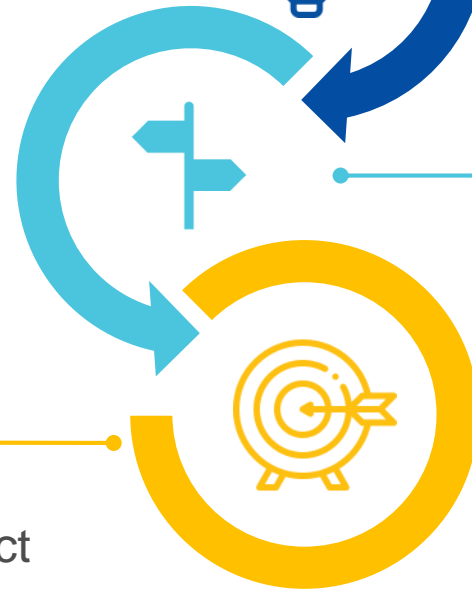
**ESPR =
framework
legislation**

It does not set
specific measures.
Rather, it enables
their later
adoption

Framework legislation

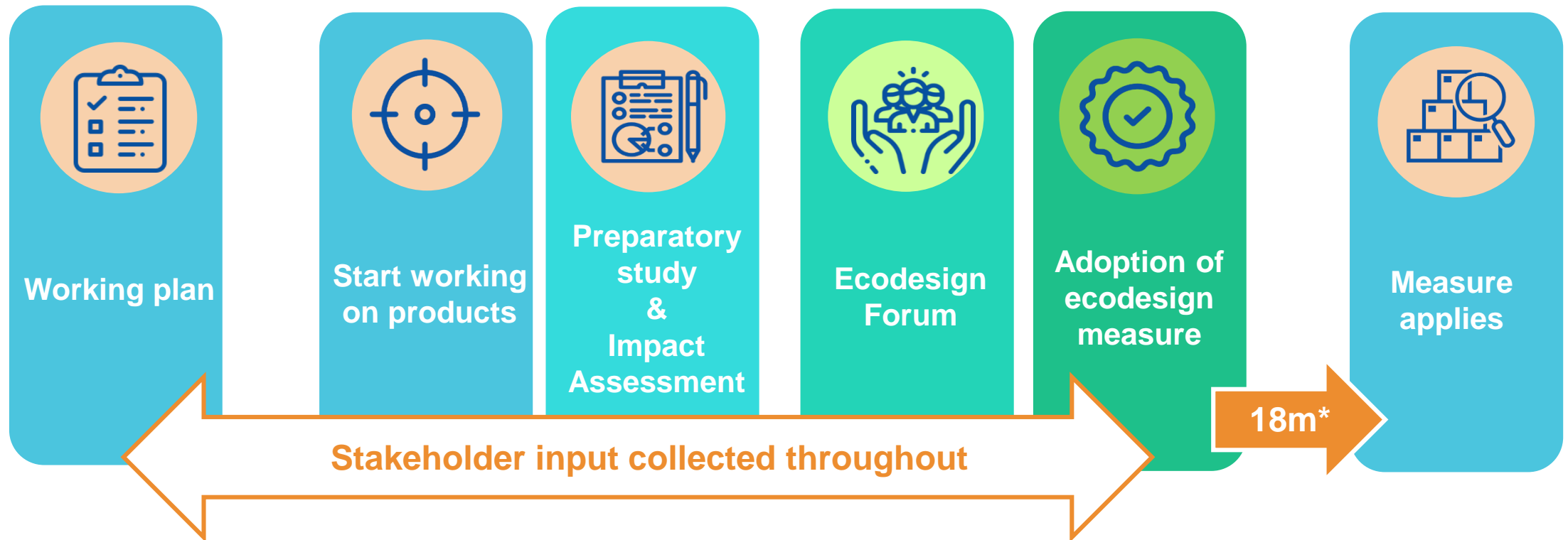


Regularly updated
**multiannual working
plans** setting out priorities



Specific measures
based on detailed impact
assessment

Setting ecodesign requirements under ESPR



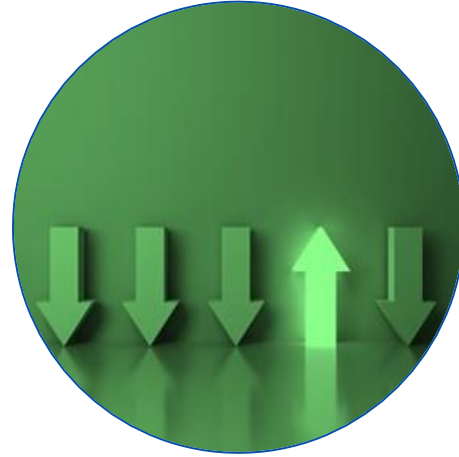
*Not earlier than 18m, shorter periods possible in duly justified cases, staggered application of specific requirements possible

ESPR - the new sustainability & ecodesign approach



Broad scope

Moving beyond energy-related products to a **wide product scope including components and intermediate products**



New sustainability & ecodesign aspects

e.g. **performance requirements** - durability, CO₂ footprint, recycled content



Green Public Procurement

Mandatory GPP requirements for contracting authorities or contracting entities



Strong focus on product information

Digital Product Passport, labels & information requirements

Enhanced Market surveillance and customs controls

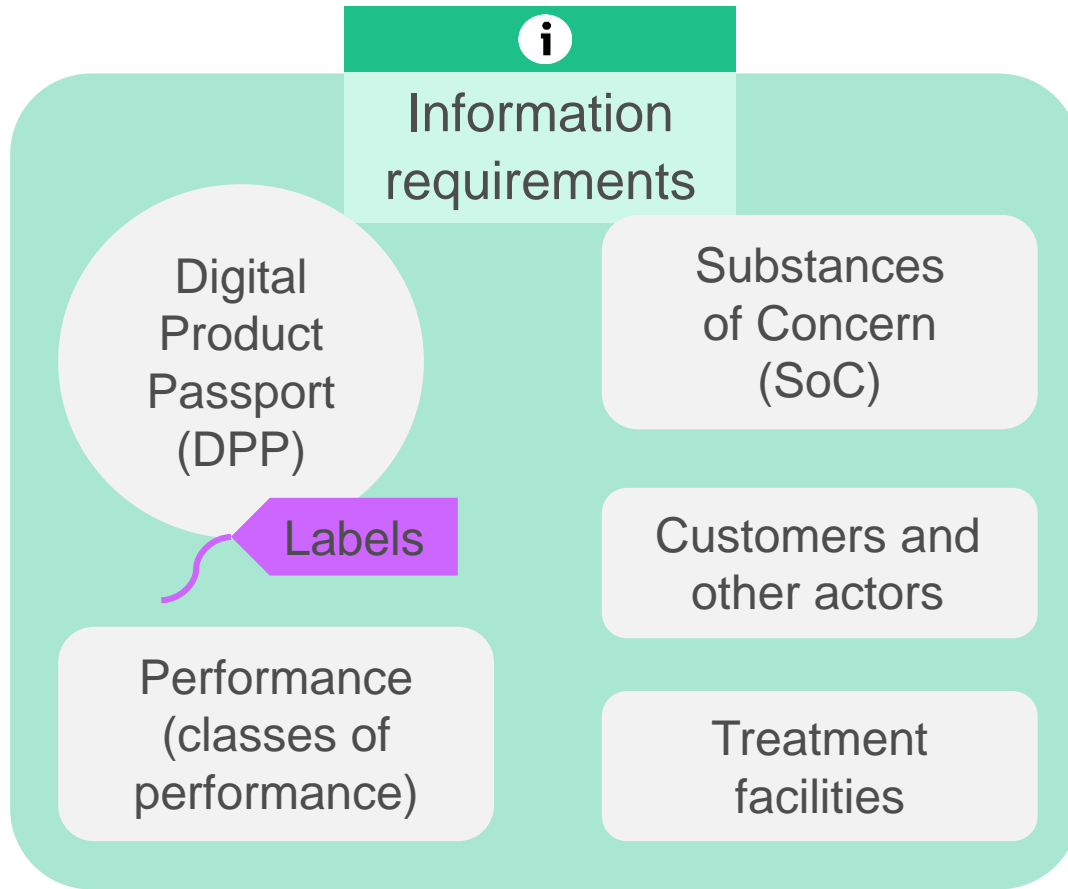
Key product aspects under ESPR

Article 5 – Ecodesign requirements

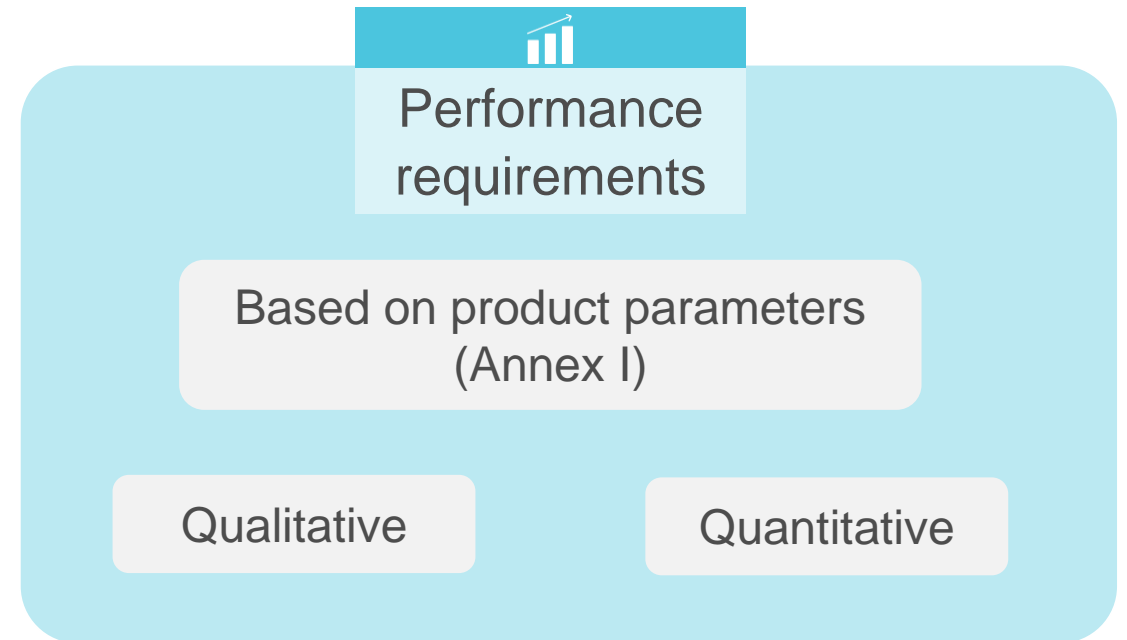


Ecodesign requirements

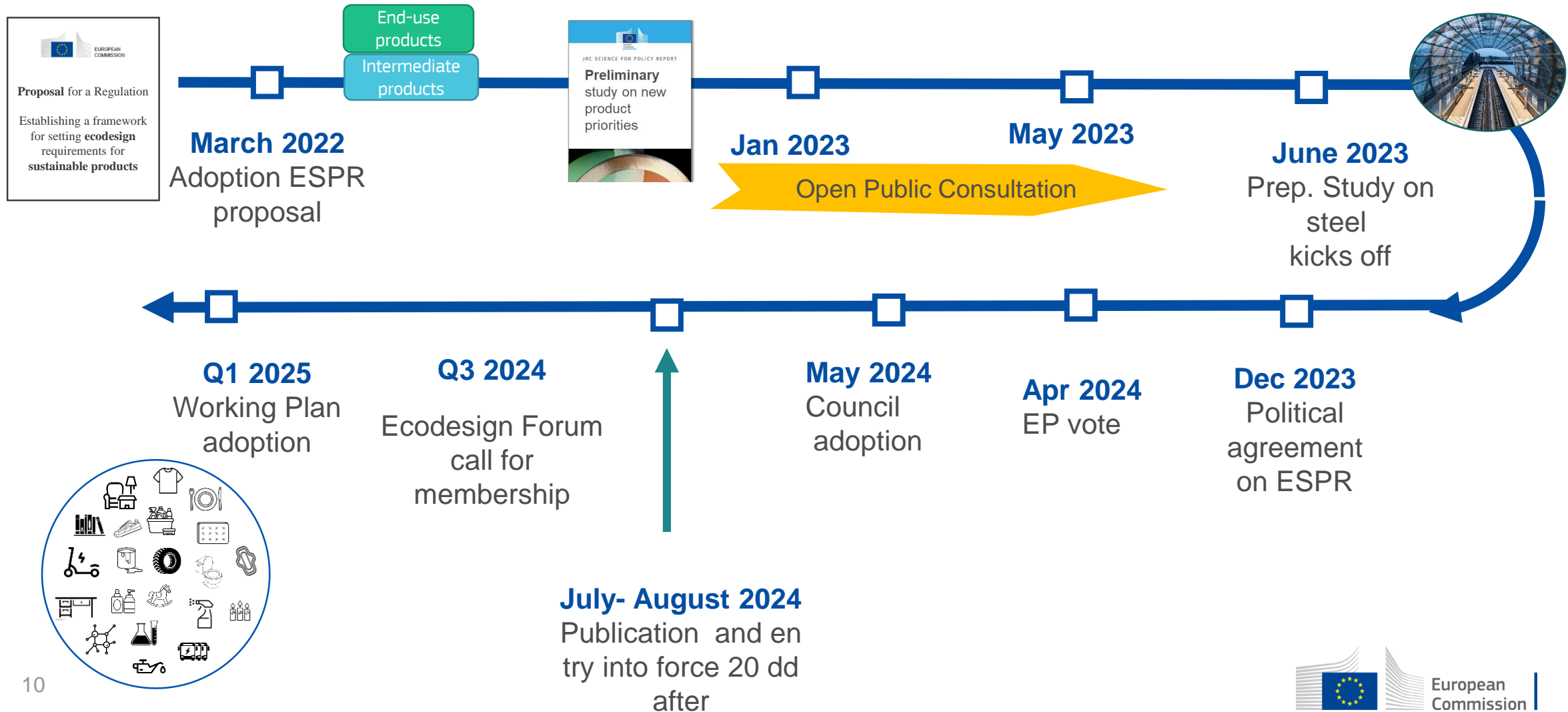
Product specific or horizontal



Horizontal requirements
When two or more product groups display similarities allowing a product aspect to be effectively improved based on common information or performance requirements



Political Context



Scientific and technical support for ESPR steel – JRC

Serenella Sala – Head of Unit JRC D.3 – Land Resources and Supply Chain Assessments

Agenda

- Overview of the Preparatory Study
- Task 1 – Definition, related legislation, and initiatives for decarbonisation
- Task 2 – Market Analysis
- Task 3 – Grid Analysis
- Closing remarks and next steps



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Overview of the Preparatory Study

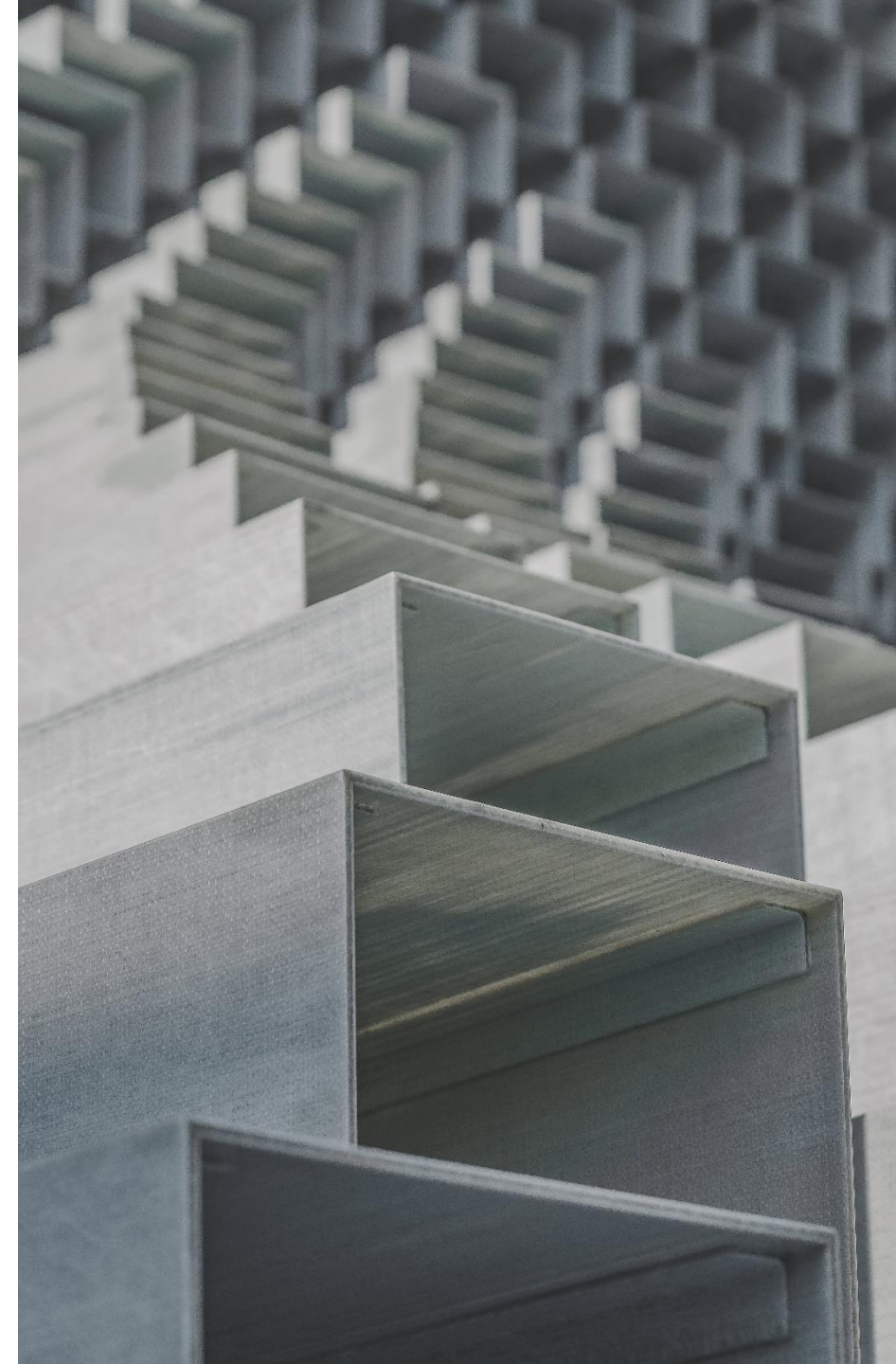
Sara Blanco Pérez – Project Officer JRC B.5

Objective

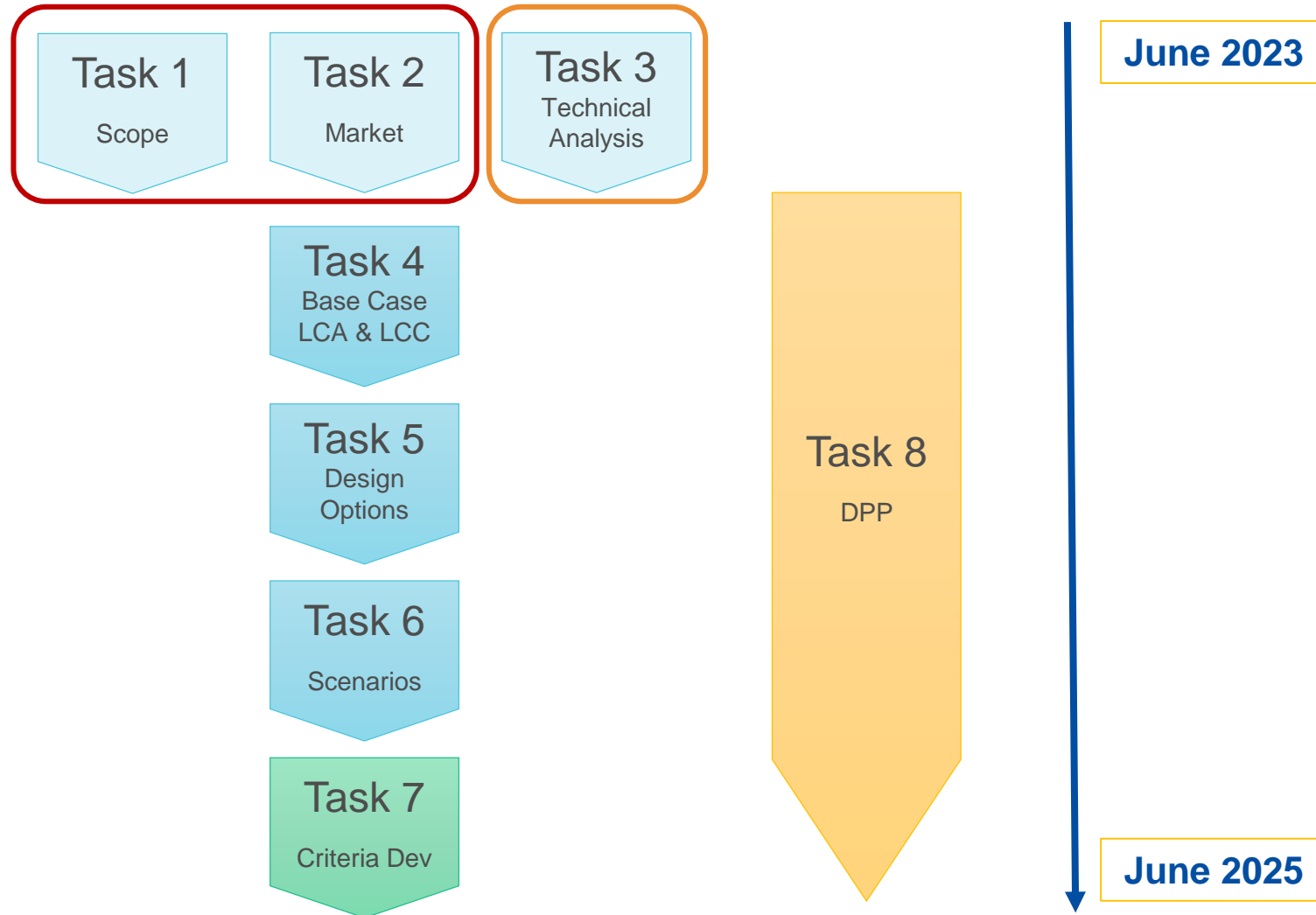
The **preparatory study** aims to deliver an in-depth exploration of the environmental and techno-economic aspects of iron and steel products, producing scientific evidence to support future discussion on EU product policies and lay the ground for a possible future **Delegated Act** for iron and steel products.



Expected results:

-  Identification of measures with the highest improvement potential
-  Proposal for scope of data for Digital Product Passport

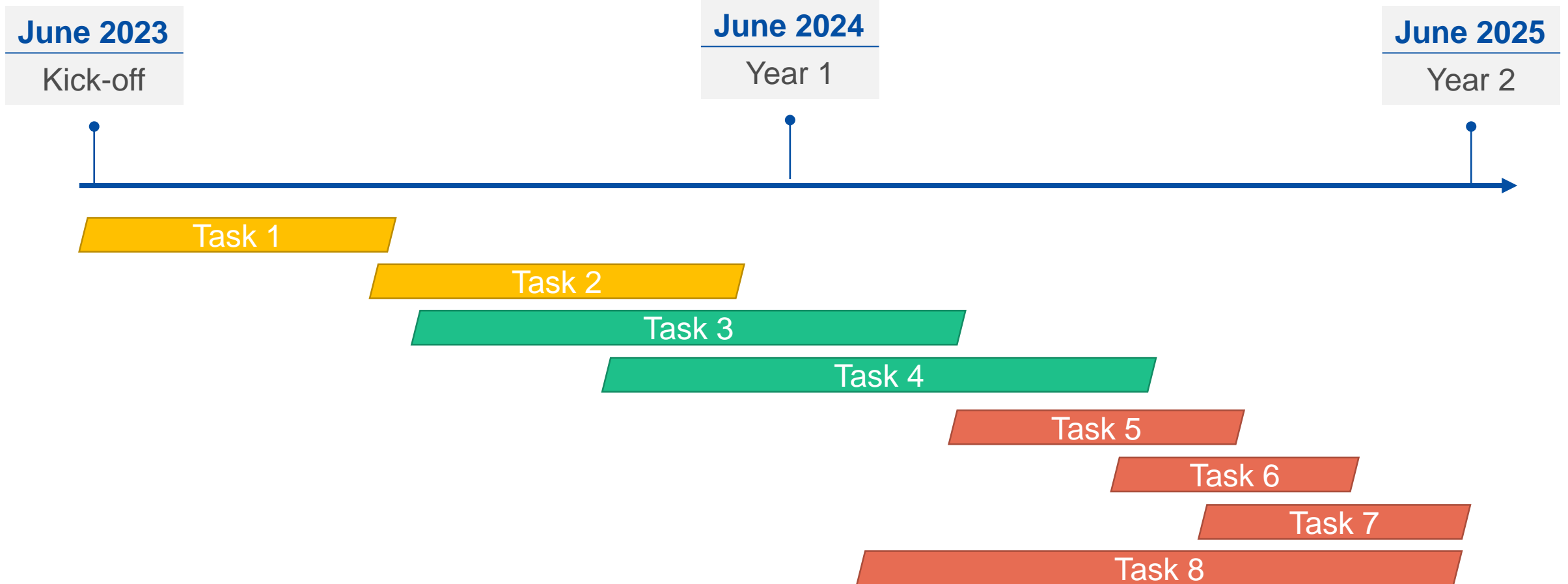


Work Plan (following MEErP+)



-  Completed
-  Ongoing

Status of the Project



- Completed
- Ongoing
- Not started

Stakeholders' involvement

Milestones / Deliverables	Scope/format	Timeline
Stakeholders' survey	Survey on scope	Oct - Nov 2023
1 st Stakeholders' meeting	Online (Task 1 - 3)	June 2024
2 nd Stakeholders' meeting	Online (Task 3 - 5)	Q4 2024/Q1 2025

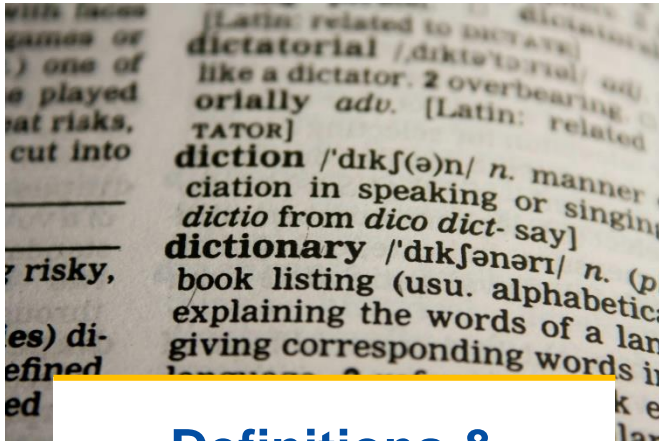
SEVILLA PROCESS



Task 1: Definitions, related legislation, and initiatives for decarbonisation

Sara Blanco Pérez – Project Officer JRC B.5

Objectives



Definitions & Classifications



Related Legislation and standards



Initiatives towards decarbonisation

Existing Definitions and classification

- Steel grades, designated according to the chemical composition, mechanical and physical properties → EN 10020:2000 “Definition and classification of grades of steel”
- Application and mechanical or physical properties
- Shape and surface conditions → EN 10079:2007
- European Statistics → NACE Sector C24.1, C24.2, C24.3, C24.5
- Combined Nomenclature → Group 72 & 73

Related EU Policy and Legislation

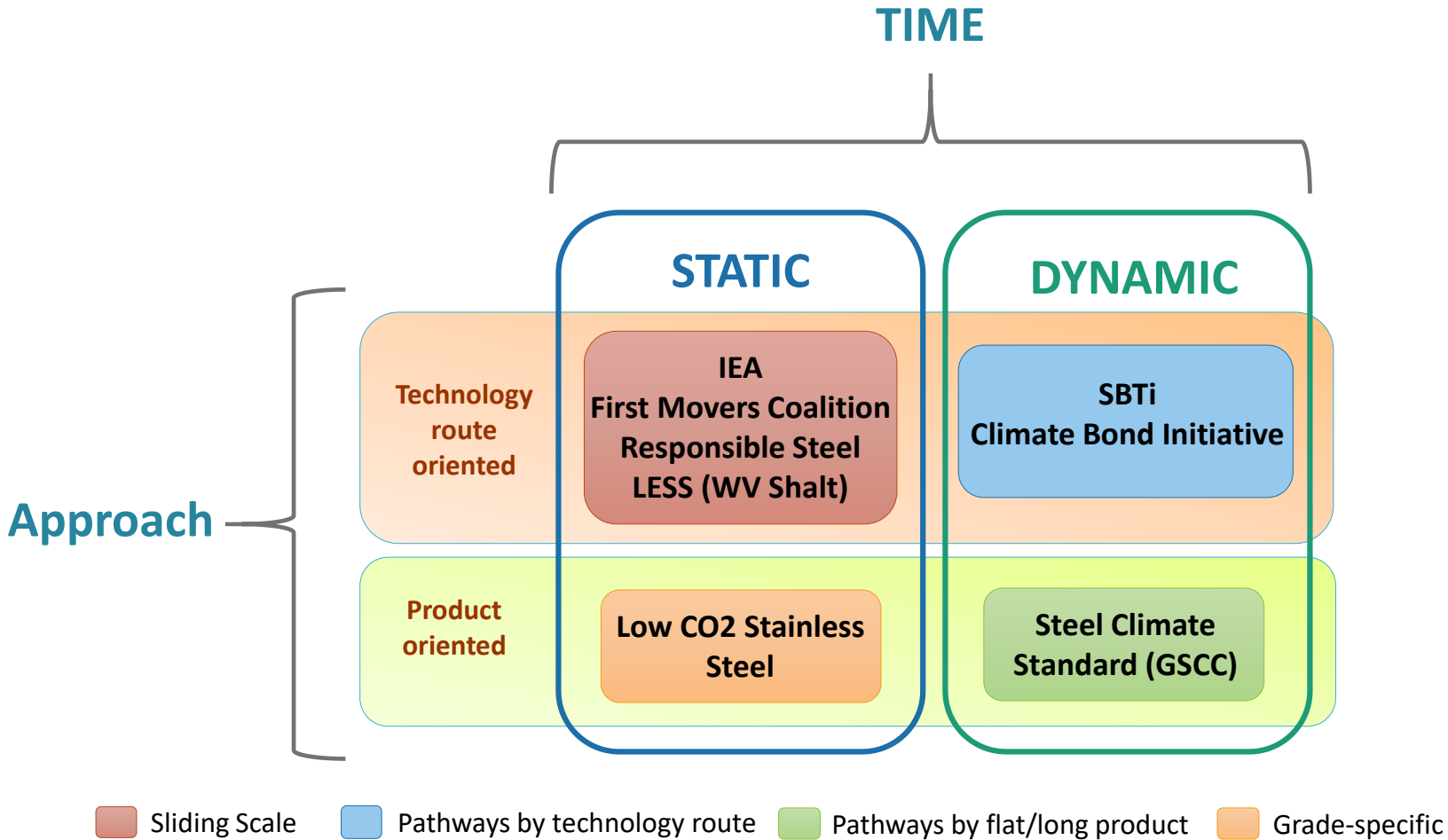
Domain	Policy Initiatives
Circular Economy and Sustainable Product Policy	<ul style="list-style-type: none"> Circular Economy Action Plan Ecodesign for Sustainable Product Regulation European Critical Raw Material Act Construction Products Regulation Waste Framework Directive Waste Electrical and Electronic Equipment Directive Waste Shipment Regulation End-of-Life Vehicles Directive Packaging and Packaging Waste Directive Registration, Evaluation, Authorisation, and Restriction of Chemicals Classification, Labelling, and Packaging Directive
Sustainable Industry and Investments	<ul style="list-style-type: none"> European Industrial Strategy Green Deal Industrial Plan Net Zero Industry Act European Taxonomy EU Open Strategic Autonomy
GHG Emissions Reduction and Energy Transition	<ul style="list-style-type: none"> European Emissions Trading System Carbon Border Adjustment Mechanism Industrial Emissions Directive EU Hydrogen Strategy
Trade Policy	<ul style="list-style-type: none"> Trade Defence Instrument
Consumers Rights	<ul style="list-style-type: none"> Green Claims

Initiatives towards decarbonisation

Certification			General		
Company Level	Site Level	Product Level	Company/Site Level	Product Level	Unspecified
Science Based Target Initiative (SBTi)	Responsible Steel	Responsible Steel	GHG protocol - corporate standard	GHG protocol - product standard	Net zero Industry Tracker
Net Zero Steel Pathway Methodology Project (NZSPMP)	IEA-G7	Arcelor Mittal - Xcarb™ Initiatives	worldsteel- CO2 Data Collection	worldsteel- LCI Data Collection	Leadership Group for Industry Transition (LeadIT)
ACT	WV Stahl –green steel label	Thyssenkrupp - blueminet™ Steel		RMI-Steel Emission Reporting Guidance	MPP-Net Zero Steel Initiatives (NZSI)
AISI-Steel production GHG emissions calculation Methodology Guidelines	CRU-Emission Calculation Tool	Voestalpine - greentec steel	ICC Framework for Responsible Environmental Marketing Communications	SKF-CO2 emission Calculation Tool	ESTEP-Clean Steel Partnership (CSP)
SteelZero		Tata - Zeremis™ Carbon Lite		CATENA-X	Green Steel for Euroope (GRENSTEEL)
First Mover Coalition (FMC)		Kobe Steel – Kobenable Steel			TERI-Achieving Green Steel Roadmap to a Net Zero Steel Sector in India
Industrial Deep Decarbonisation Initiatives (IDDI)		Nippon - NSCarbolex™ Neutral			E3G-1.5C steel decarbonising the steel sector in Paris-compatible pathways
Climate Bond Initiative		GSCC-The Steel Climate Standard			WTO-What yards for Net Zerio?
SASB Standards GHG Emissions		RE100 (electricity)			RMI-Pursuing Zero CarbonSteel in China
Equator principles (EP)		Buy Clean California Act (BCCA)			Glasgow Breakthrough
Climate Action 100+					RMI-Center for Climate Aligned Finance
Glasgow Financial Allliance for Net Zero					UN Converned net Zero Asset Owner
EcoVadis					

- Roadmap** Overview of the current state and possible emission reduction strategies
- Collaboration** Exchange development status among the interests. (e.g. interactive database, dialogue)
- Demand** Utilizing the coalition purchasing power to create the demand market of near-zero steel.
- Tool** Tools or software to facilitate the emission accounting work.
- Finance** To develop financing mechanisms to support
- Policy** To develop government policy support
- Framework** Methodology for GHG emission intensity accounting

International initiatives to define “green steel”



Takeaways from Task 1

Finding 1: Steel is a **heterogeneous** product classified based on different aspects, such as **steel grades, application, shape, surface conditions**, combined nomenclature, etc.

- There is not an absolute correspondence between categories across different classification systems
- The availability of datasets disaggregated according to different classification systems is limited
- Our approach must be straightforward and coherent with the datasets available

Finding 2: The most appropriate way to cluster products seeking to establish ecodesign measures for steel products should be connected with the product **application/functionality**

Finding 3: While coherence with the CBAM is desirable, the categories used by the Combined Nomenclature are not suitable for clustering products for the purpose of this preparatory study.

Finding 4: The availability and accessibility of reliable data, with sufficient granularity and temporal and spatial coverage, are essential considerations when selecting product categories

Q&A – Task 1

Break - 10'

Task 2: Market Analysis

Aleksandra Arcipowska – Project Officer JRC B.5

EU Iron and Steel Market

External contractor:



Fraunhofer Institute for Systems and Innovation Research ISI

Ex-ante data availability

- Data availability matrix
- Reference list of product categories
- Correspondence with CN codes and EN100027

Data analysis

- Analysis of trends and drivers



Data collection

- Input for the representative product selection

Ex-ante data availability matrix

	Iron ore	Iron	Ferroalloys	Crude steel	Finished steel products	Trade
World Steel Association	Total	Granular		Granular	Granular	Yes
BGS 2024	Total	Partial	Granular	Total		Yes
USGS 2021	Total	Granular	Granular	Total		
Minerals4EU	Total	Partial		Total		Yes
PRODCOM by Eurostat	Granular	Granular	Granular		Granular	Yes
EUROFER 2023				Granular	Granular	Yes
WV Stahl				Granular		Yes
Dworak et al. (2021)				Granular	Granular	Yes
CAEF					Partial	
WFO					Partial	
Rostek et al. (2022)						
UN Comtrade						Yes
ISSB (2024)						Yes
worldstainless (2023a)	Unknown	Unknown	Unknown	Unknown	Partial	Unknown
CRU (2024)	Yes	Yes	Unknown	Yes	Yes	Unknown
Comext by eurostat (2024a)						Yes

Matrix will be shared as an annex to preparatory study (in a digital file).

Consolidated list of product categories

Flat products

Hot rolled plate (e.g. Quarto plate)
Electrical sheet
Hot rolled coil
Cold rolled coil
Tinplate and tinned products
Galvanized coil
Organically coated and other coated products

Long products

Railway track material and other long products
Heavy sections and mining frames
Light sections
Other hot rolled bars (e.g. merchant bars)
Bars for reinforcement of concrete
Rod and wire rod



Foundry products

Cast steel products
Cast iron products

Stainless steel

Flat products

Hot rolled strip mill products
Hot rolled plate (e.g. Quarto plate)
Cold rolled flat products
Other flat products

Long products

Wire rod
Merchant bars
Bright bars
Drawn wires
Other long products

Tubular Products Forged products

Correspondence matrix

Correspondence between reference product categories and

- Statistical data sources *incl. Eurofer, WorldSteel, PRODCOM, UN Comex*
- CN codes
- EN10027

Example for “Hot rolled coil”

CN Code

7208: Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated	72081000
	72082500
	72082600
	72082700
	72083600
	72083700
	72083800 72083900
7211: Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated	72111400
	72111900
7112: Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, clad, plated or coated	72126000
7225: Flat-rolled products of other alloy steel, of a width of 600 mm or more	72251910
	72253010
	72253030
	72253090
7226: Flat-rolled products of other alloy steel, of a width of less than 600 mm	72261910
	72269120
	72269191
	72269199

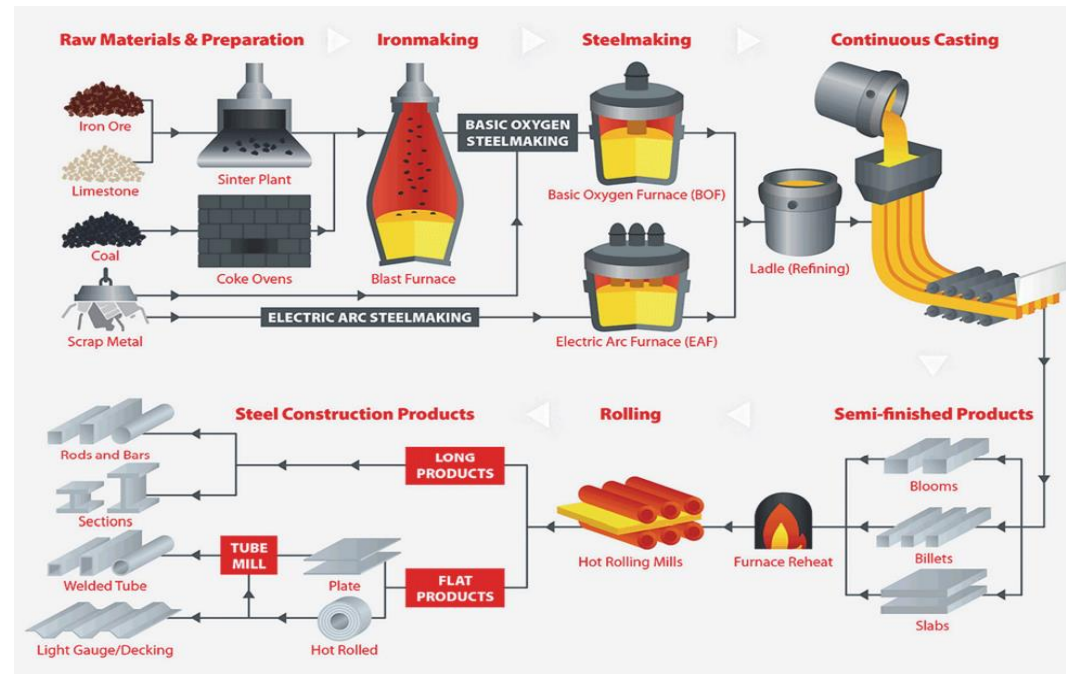
Correspondence matrixes will be shared in the annex to preparatory study.

Scope of data collection

Historical trends (2013-2022) and projections (2035-)



Europe's demand
for steel and iron
products



Source: *New Steel Construction*

Supply chain (from mining to finished goods)

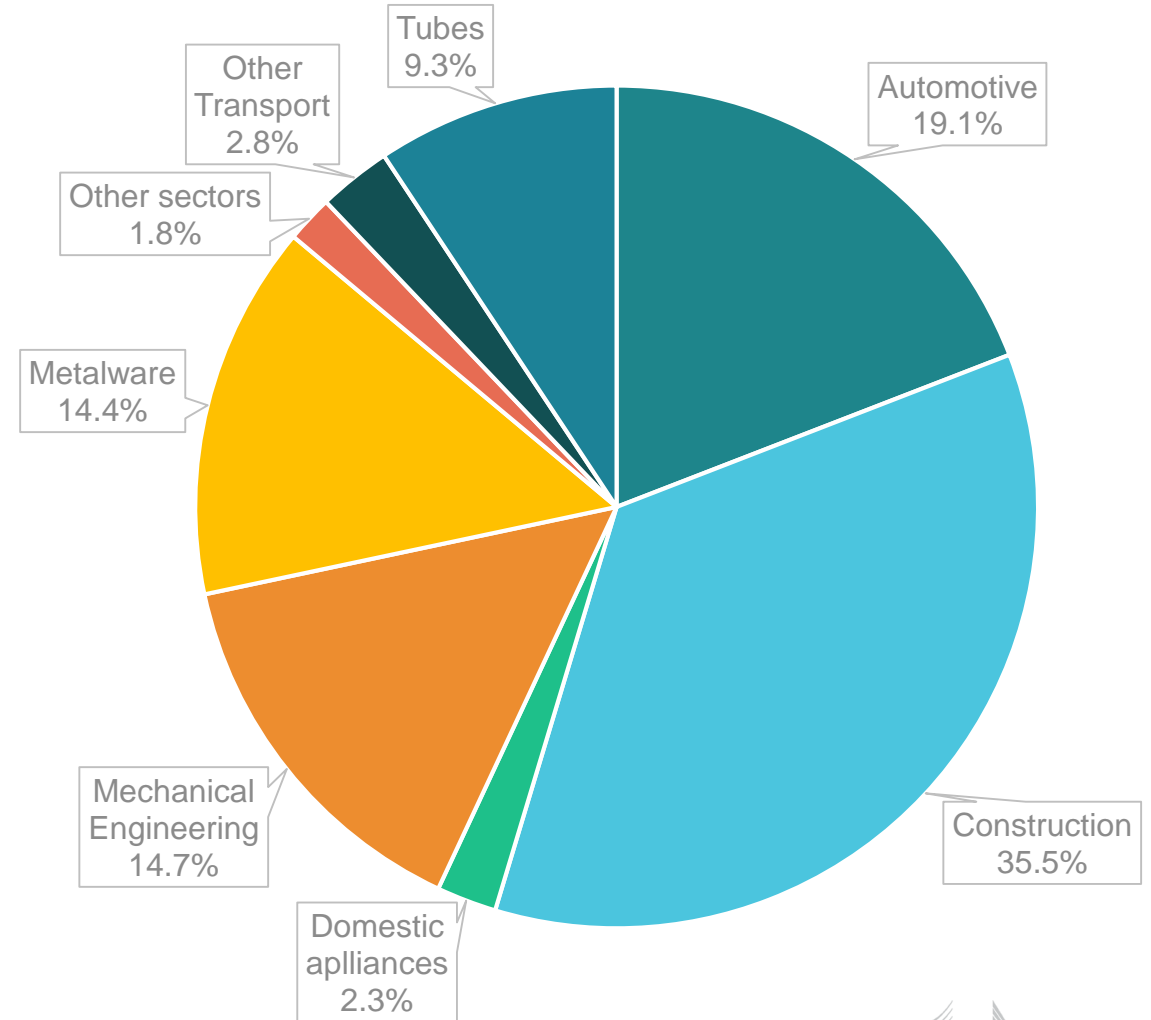
Including domestic production, export and import

EU Demand for finished steel goods

The European Union accounts for about 8% of the global demand with a steel consumption of 136 Mt in 2023*.

The demand trends were relatively stable in the long-term.

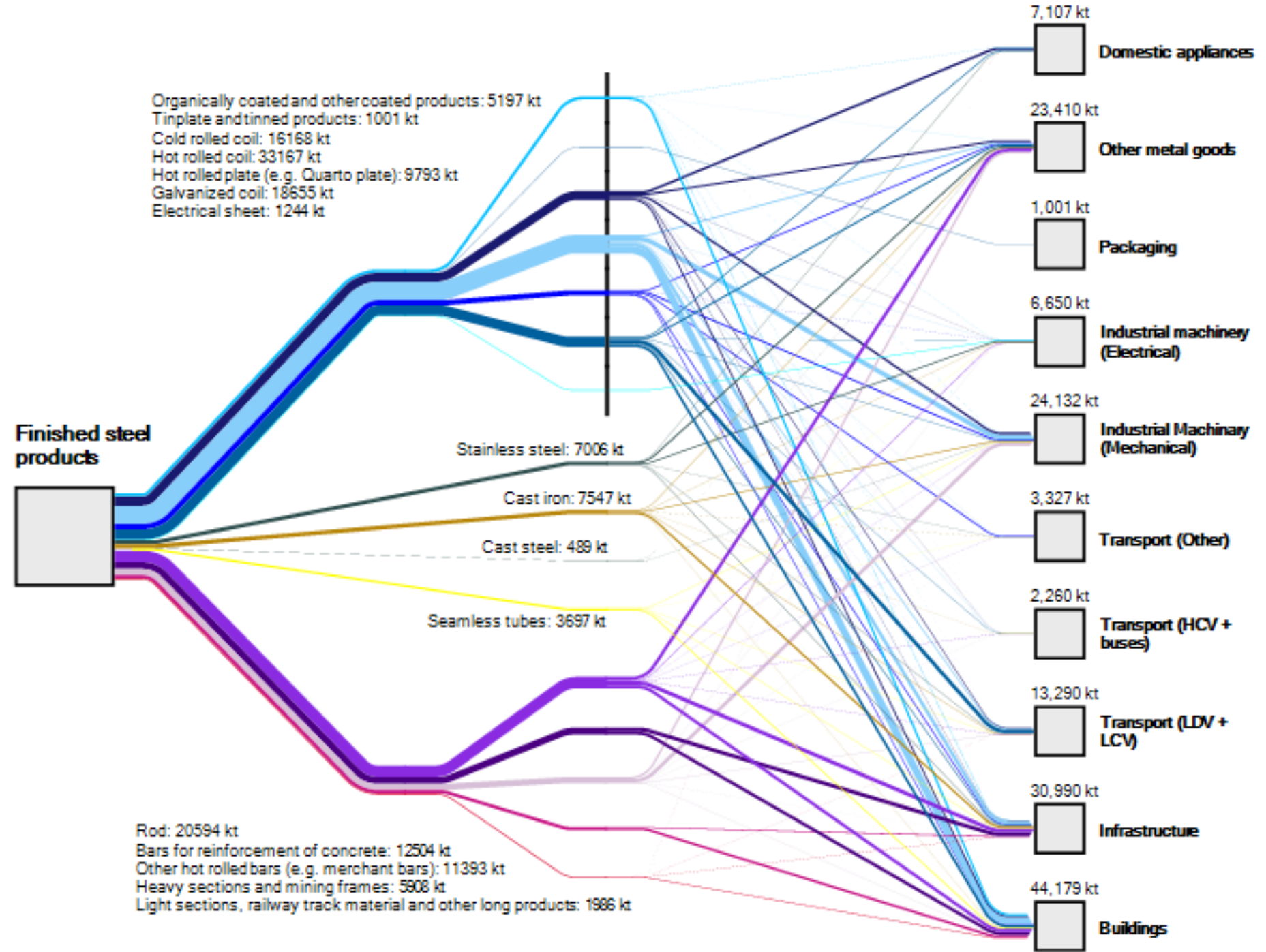
Since 2020, the steel consumption is on decline in Europe and worldwide, mainly related to aftermaths of the COVID-19 crisis (and prolonged downturn in the construction sector).



*= Real consumption (vs. 126 Mt of apparent consumption)

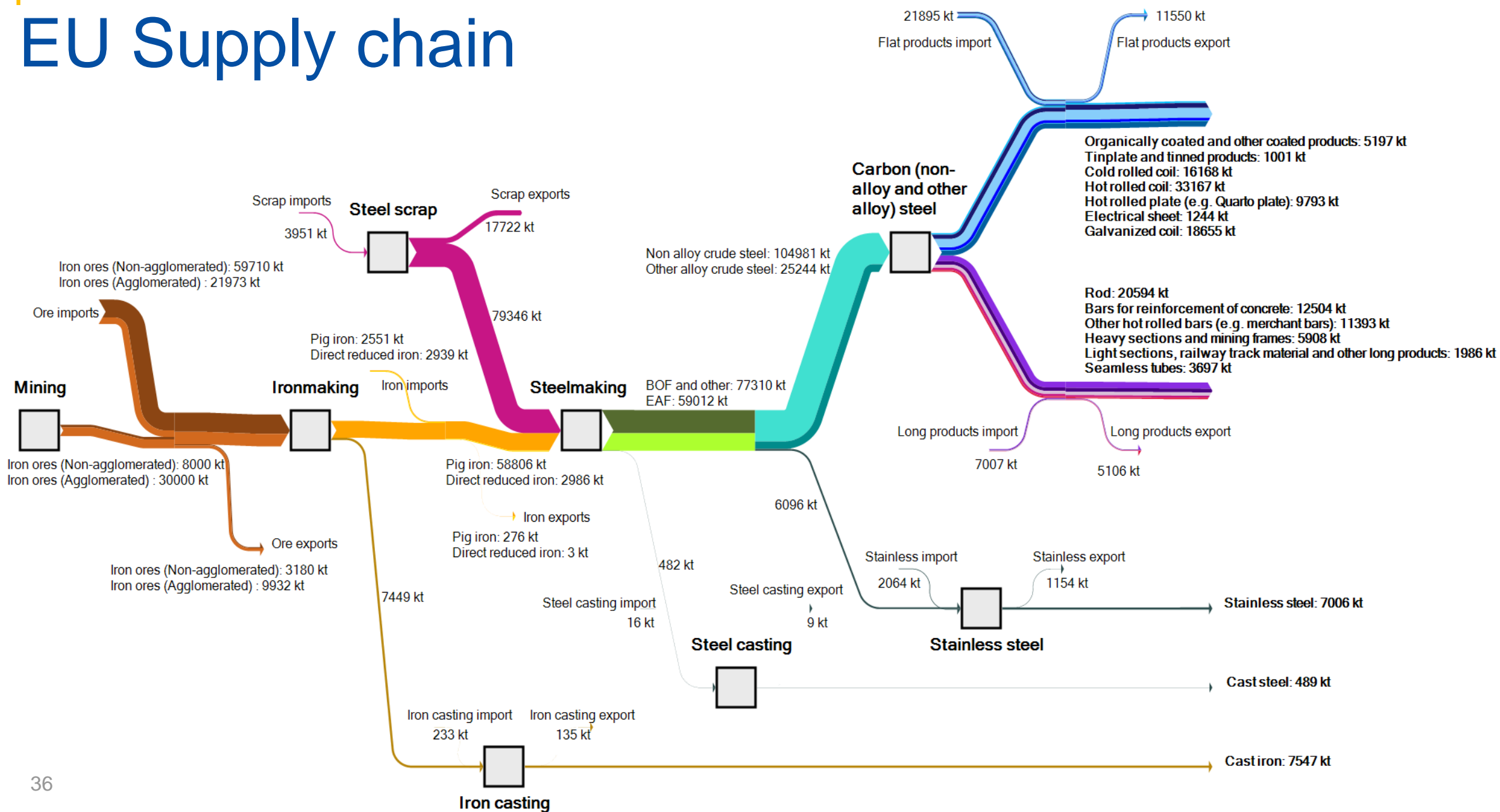
Source:EUROFER

- Rod
- Bars for reinforcement of concrete
- Other hot rolled bars (e.g. merchant bars)
- Heavy sections and mining frames
- Light sections, railway track material and other long products
- Organically coated and other coated products
- Tinplate and tinned products
- Cold rolled coil
- Hot rolled coil
- Hot rolled plate (e.g. Quarto plate)
- Stainless steel
- Cast iron
- Cast steel
- Seamless tubes
- Galvanized coil
- Electrical sheet



Source: own estimates based on merging of several data sources (CAEF, 2021; Dworak and Fellner, 2021; EUROFER, 2023; Harvey, 2022; WFO, 2021; World Steel Association, 2023;

EU Supply chain



Iron ore and concentrates



Mining

Steel making is the main consumer of iron ore

- Iron ore mining has almost tripled over the past twenty years, it remains highly concentrated in the top global producers
- Global iron ore production reached **2500 Mt in 2022**
- Sold production* of iron ore in EU27 was **38 Mt in 2022**
- Iron ore mining in EU27: **Sweden**, Austria, Slovakia and Germany
- To meet its demand (107Mt in 2022), Europe **imports 75%** of the iron ore and concentrates, mainly from Canada (30%), Ukraine (18%) and Brazil (24%).
 - Steady increase in consumption by 2017, minor fluctuations afterwards
 - Domestic production increase in terms of volumes and values
 - Import decrease from around 103 Mt/y in 2013 to 82 Mt/y in 2022

Pig iron and direct reduced iron (DRI)



Iron making

98% of global mined iron ore is used to make pig iron

- Global pig iron production reached 1,300 Mt in 2022, of which 5.8% in EU27
- Global DRI was 126 Mt in 2021 of which 0.5% in EU27.
- **93% of the EUs demand (61.7Mt in 2022) domestic production.**
- **Total iron production decreased** from 72 Mt/y in 2013 to nearly 57 Mt/y in 2022
- **Almost entire iron production in EU27 is pig iron**, DRI production is currently insignificant in EU27. New investments plans in DRI in Europe are planned.
- In 2022, 2.44Mt of pig iron was imported to the EU mainly from Russia, Brazil and South Africa. Around half of the imported iron is DRI.

Crude steel



There are two main technology routes of steel making: BF-BOF and EAF

- The EU27, with an output of 126 Mt of crude steel per annum (20MS), accounts for 6.8% of global output of 1850 Mt. (2023)
- The key global players are China, India, Japan, USA and Russia. One third of the EU production takes place in Germany. Italy, France and Spain follow in the ranking of the top EU steel producers
- 76% of the overall steel production in the EU is non-alloyed carbon steel, 19% is alloyed carbon steel. Stainless steel volumes account for 5%.
- In the EU, the ratio between BOF to EAF is 55% to 45%, with a slow increasing importance towards an electric-arc furnaces (EAF).
- OECD report confirms the new capacities in Europe in EAF by 2026.

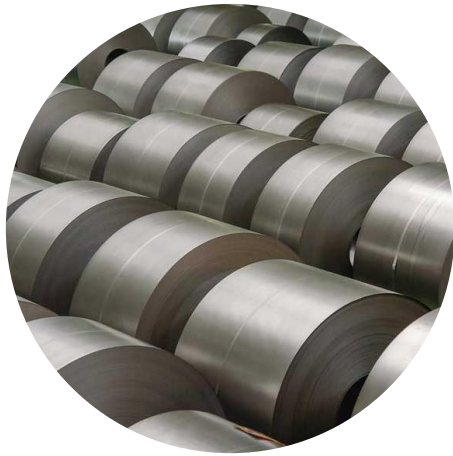
Steel scrap



BOF uses typically 20% of scrap; In EAF enables use up to 100%.

- EU with the steel scrap consumption of 79.3 Mt in 2022, is second (after China) biggest scrap consumer around the globe. Demand for steel scrap is likely to increase substantially with more ambitious climate policy coming into action.
- The production of flat steel products has a dominant role in the generation of the new scrap that use to be dominating the domestic production. Today, over 60% demand is met by post-consumer scrap.
- Europe is a net-exporter of scrap with 17.6 Mt. of steel scrap export, mainly to Turkey (67%).
- Modelled results show an increase in steel scrap generation in Europe up to 150Mt in 2050, compared to 128Mt in 2024.

Finished products



Hot rolled coil with the biggest market in EU27

- In the last decade, the apparent consumption of finished steel products in the EU27 is stable, and is driven by EU production.
- The total production has peaked in 2018, reaching 162.5 Mt/y, since then on a decreasing path reaching 137.7 Mt in 2022.
- 27% of demand was supplied by import in 2023 (compared to 20.5% in 2022)
- **The flat steel carbon product accounts for 56.5% (85.2Mt)** of the total consumption. Import accounts for 25% of the flat product demand, with the key trade partners being: Turkey, South Korea, India and Taiwan.
- **The long steel carbon products accounts for 34% (52Mt)** of the total consumption. Import accounts for 13.3% of the demand, which the key trade partners being: Turkey, China and Switzerland.

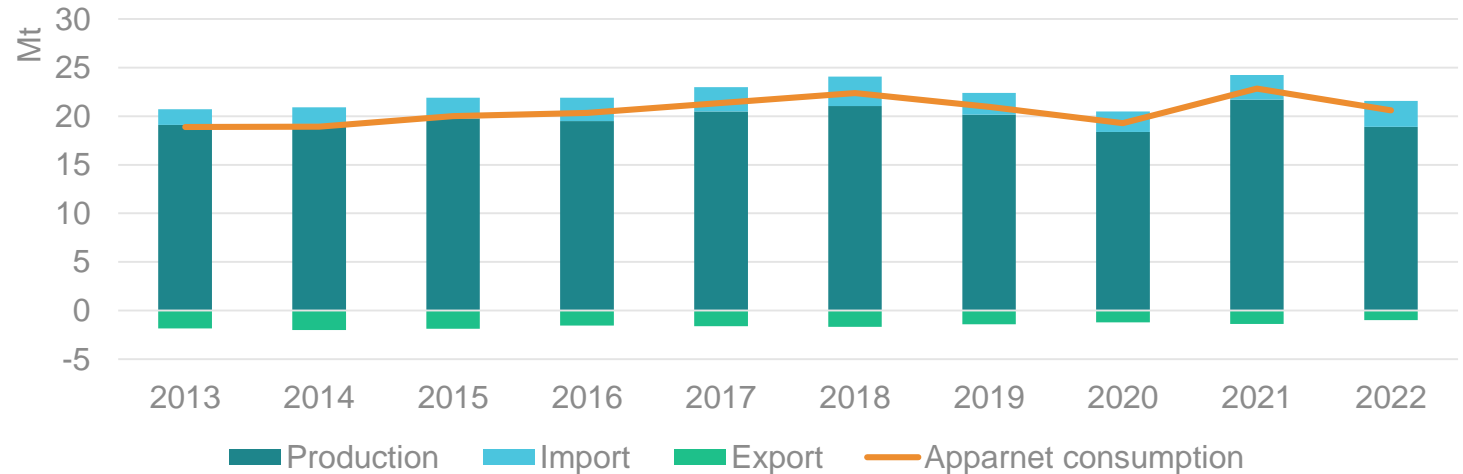
Finished products

		Production [in Mt]	Import [in Mt]	Export [in Mt]	Apparent consumption [in Mt]	% import in AP
Cast iron		0.00	0.23	0.13	0.10	0.1%
Cast steel		0.00	0.02	0.01	0.01	0.0%
Castings		8.11	0.00	0.00	8.11	5.4%
Flat	Total	74.88	21.90	11.55	85.23	56.5%
	Cold rolled coil	14.01	3.77	1.60	16.17	10.7%
	Hot rolled coil and electrical sheet	29.25	10.09	4.93	34.41	22.8%
	Hot rolled plate (e.g. Quarto plate)	10.01	1.77	1.99	9.79	6.5%
	Organically coated and other coated sheets	4.42	1.20	0.43	5.20	3.4%
	Tinplate, tinned products, galvanized coil	17.20	5.06	2.60	19.66	13.0%
Long	Total	50.48	7.01	5.11	52.39	34.7%
	Bars for reinforcement of concrete	11.52	2.10	1.12	12.50	8.3%
	Heavy sections and mining frames	7.17	0.29	1.56	5.91	3.9%
	Other hot rolled bars and light sections	10.42	1.86	0.89	11.39	7.5%
	Railway track material and other long products	2.46	0.07	0.54	1.99	1.3%
	Rod and wire rod	18.91	2.68	1.00	20.59	13.7%
Stainless steel flat products		3.57	1.63	0.80	4.40	2.9%
Stainless steel long products		0.62	0.43	0.35	0.70	0.5%

Rode and wire rod (example)



Rod and wire rod is the second most important steel products at the EU market



Import directions (<>50%):

- UK
- Malaysia
- Turkey
- Ukraine
- Switzerland

Export directions (<>50%)

- Turkey
- USA
- UK

Takeaways from Task 2

Finding 1: Two years of decline in Europe's annual demand for steel (2021, 2022). Forecast indicator an increase in 2025 – attributed to investments in green infrastructure (e.g. wind energy installations)

Finding 2: Europe the only region around the world with negative capacities investments in steel manufacturing. Announced and ongoing investments projects dominated with EAF technology.

Finding 3: Europe is second largest consumer of steel scrap, after China. At the same time, Europe is the net-exporter of scrap. The industry is concern about the gap in the scrap supply in the future.

Finding 4: To meet its demand Europe imports 75% of the iron ore and concentrates. Also, nearly 70% of ferro-allows is met by import, mainly from Norway, South Africa, India, and Ukraine.

Q&A – Task 2

Task 3: Technical Analysis

sub-task: Selection of representative products

Thibaut Maury – Project Officer JRC D.3

Rationale for the selection of representative products (RPs)

Objective of the preparatory study

- Explore environmental and techno-economic aspects,
- Provide scientific evidence to support potential future EU policy intervention



Challenge

The scope for steel as an **intermediate product** is extensive (70 CN codes for CBAMs, 20+ intermediate product categories for the market analysis, specific quality grades)

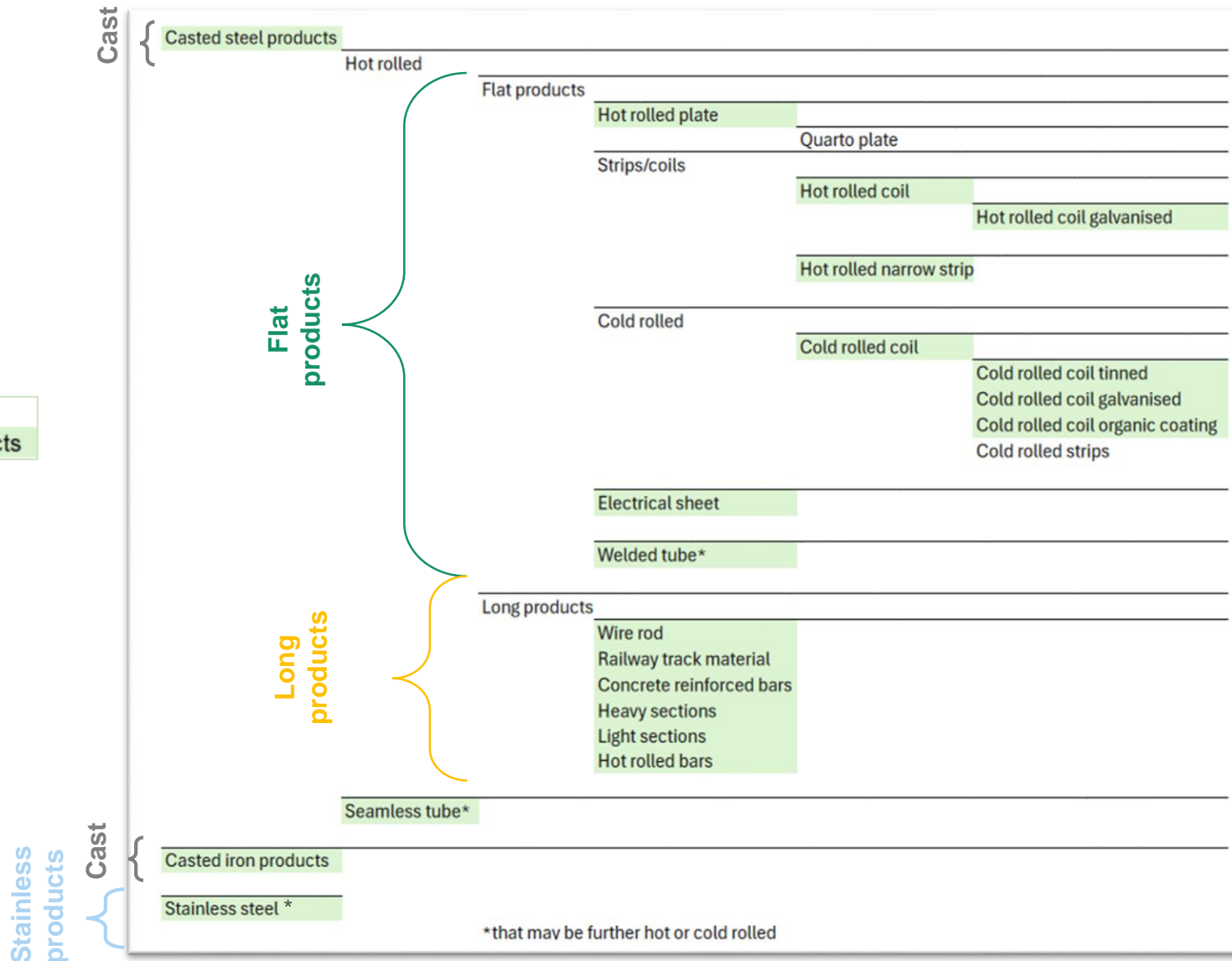
Approach

To streamline the analysis, we need to focus on **limited number of representative products** and prioritize the assessment where it has the most impact (particularly for the Environmental Footprint)

➔ Hence, we decide to perform a **quantitative assessment** to select a limited number of representative products (5 products)

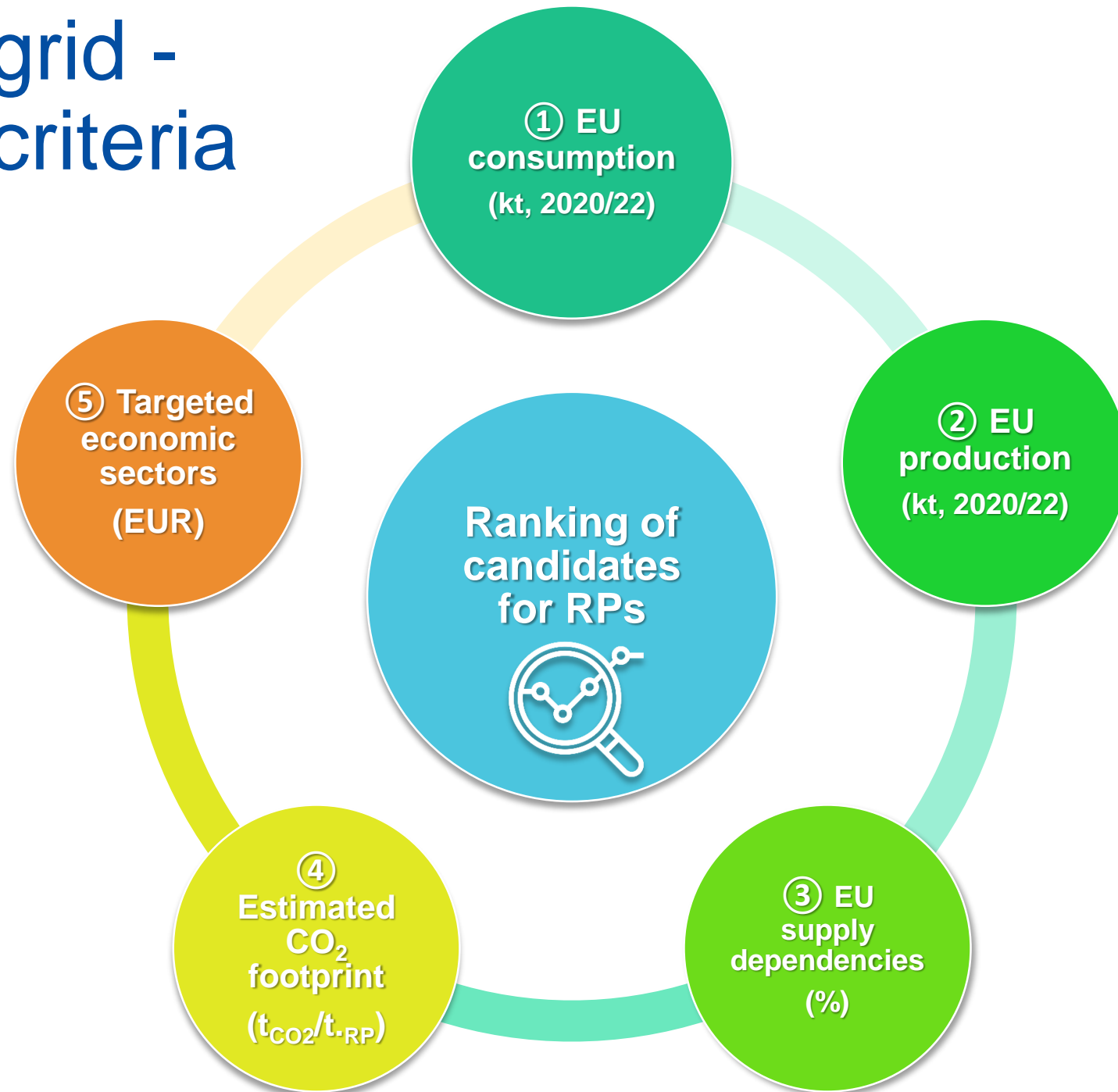
Scope of intermediate steel products

20
Candidate products to be ranked



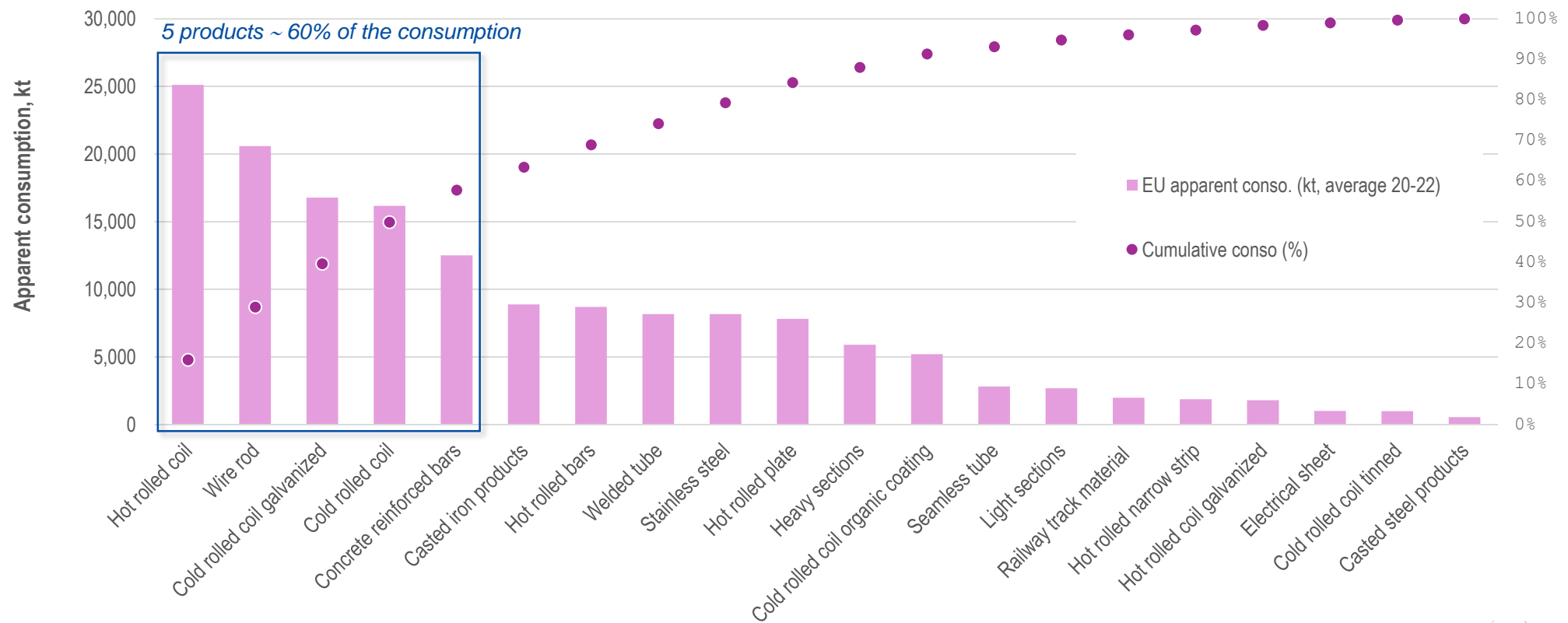
Legend:
Candidate for Representative Products

Analysis grid - selected criteria



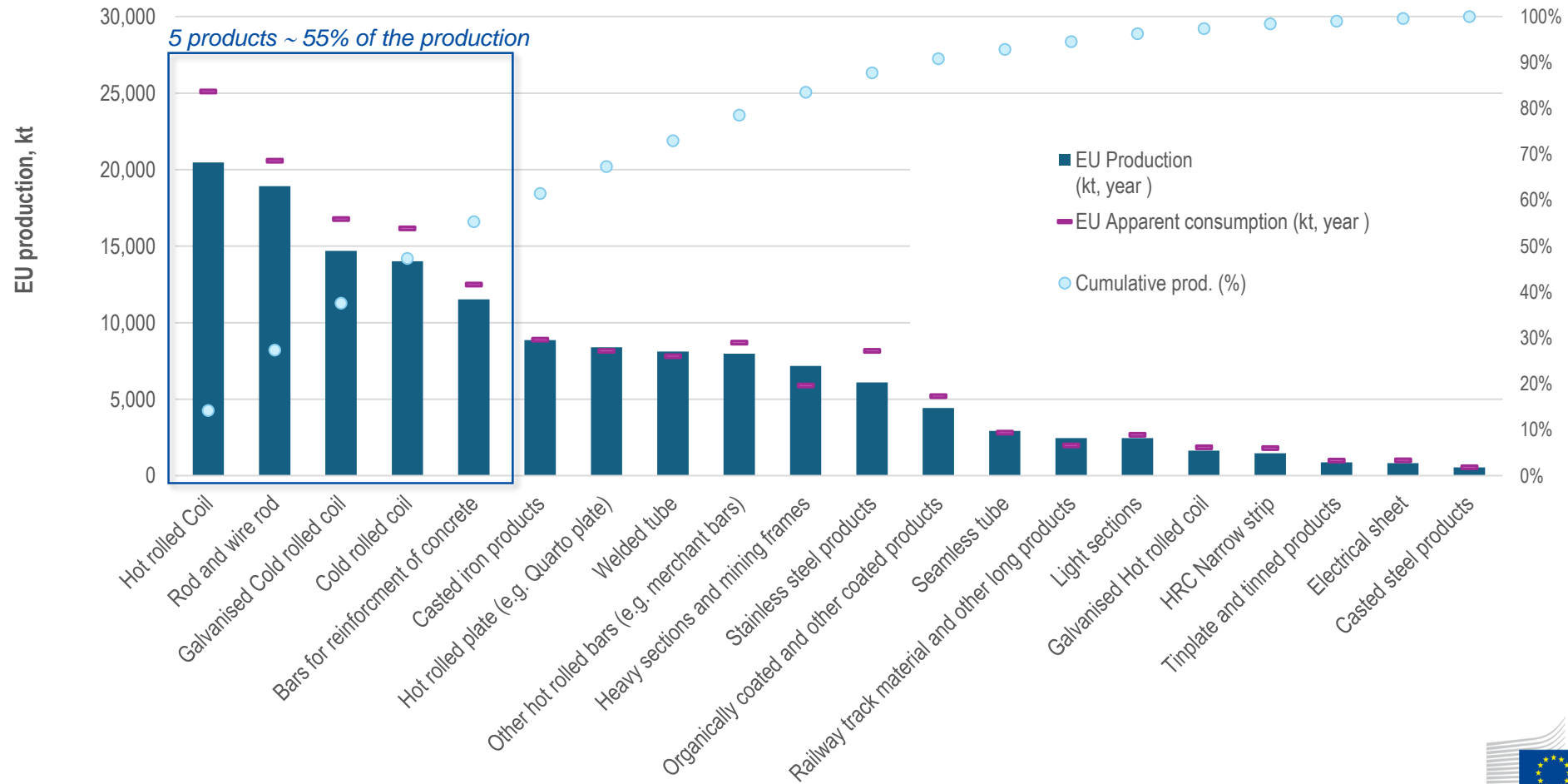
Criteria ① – EU apparent consumption

Apparent consumption of intermediate steel products (kt, average 2020-22)



Criteria ② – EU production

EU production of intermediate steel products
(kt, average 2020-22)



Criteria ① & ②

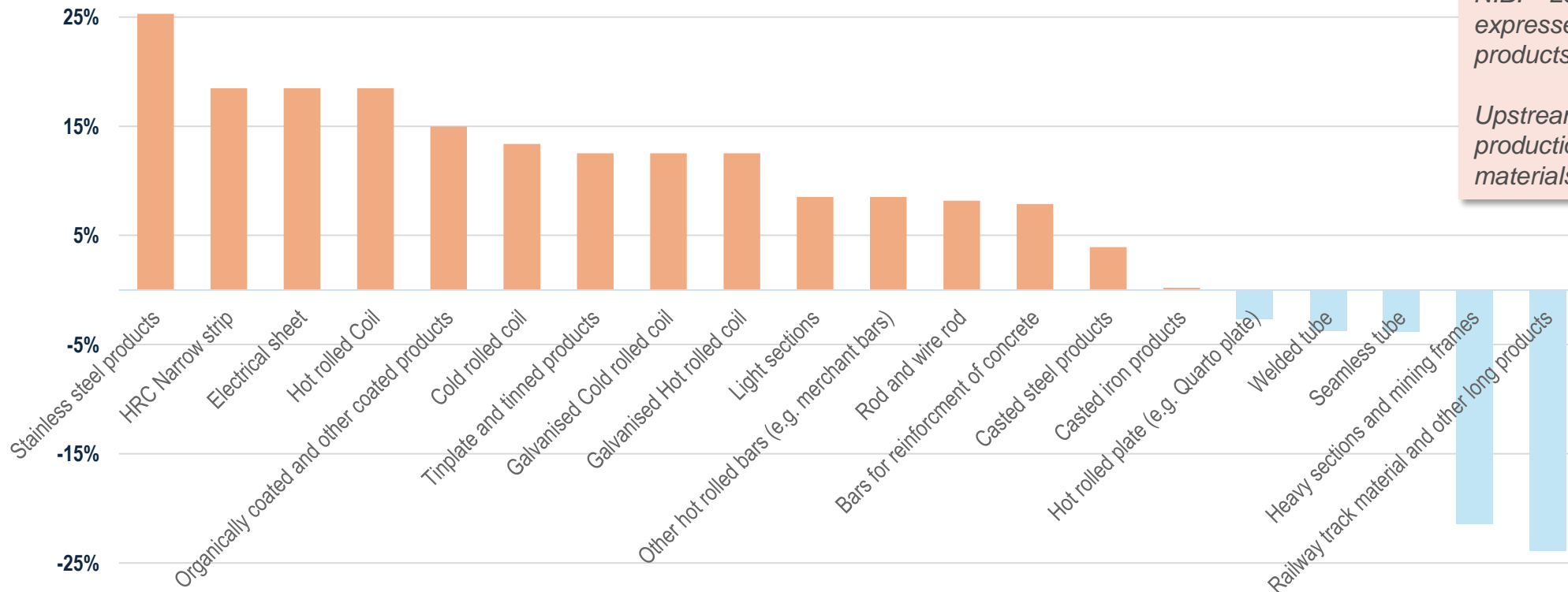
- Table of results:

	① Consumption	② Production
Hot rolled coil	1.00	1.00
Rod and wire rod	0.82	0.92
Galvanised cold rolled coil	0.67	0.72
Cold rolled coil	0.64	0.68
Bars for reinforcement of concrete	0.50	0.56
Casted iron products	0.35	0.43
Hot rolled plate (e.g. quarto plate)	0.33	0.41
Welded tube	0.31	0.40
Other hot rolled bars (e.g. merchant bars)	0.35	0.39
Heavy sections and mining frames	0.24	0.35
Stainless steel products	0.32	0.30
Organically coated and other coated products	0.21	0.22
Seamless tube	0.11	0.14
Railway track material and other long products	0.08	0.12
Light sections	0.11	0.12
Galvanised hot rolled coil	0.07	0.08
Hot rolled coil narrow strip	0.07	0.07
Tinplate and tinned products	0.04	0.04
Electrical sheet	0.04	0.04
Casted steel products	0.02	0.03

Criteria ③ – EU supply dependencies

- Characterised by Import Reliance indicator (IR) parameters:
$$IR = \frac{(\text{Imports} - \text{Exports})}{(\text{Domestic Production} + \text{Imports} - \text{Exports})}$$

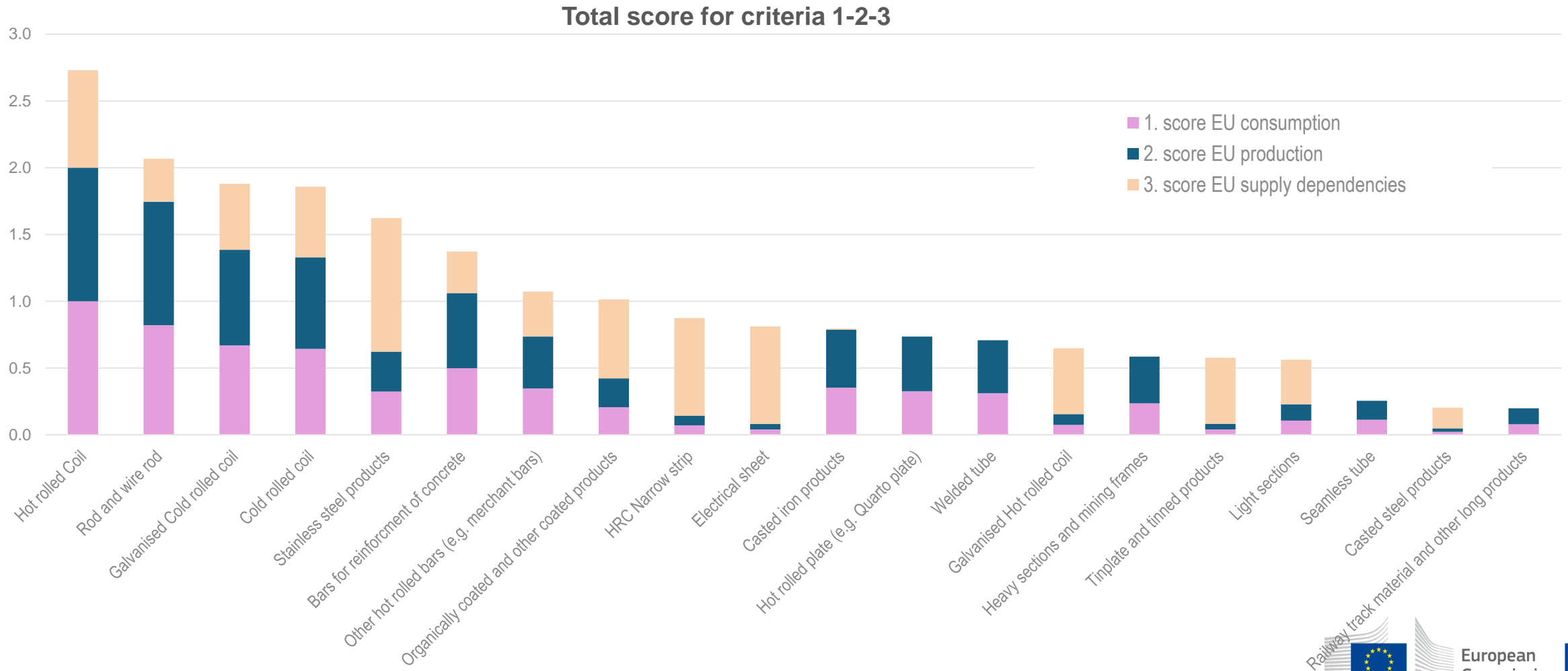
Import reliance for intermediate steel products (%)



N.B. Level of dependencies is expressed for intermediate steel products placed on the market.

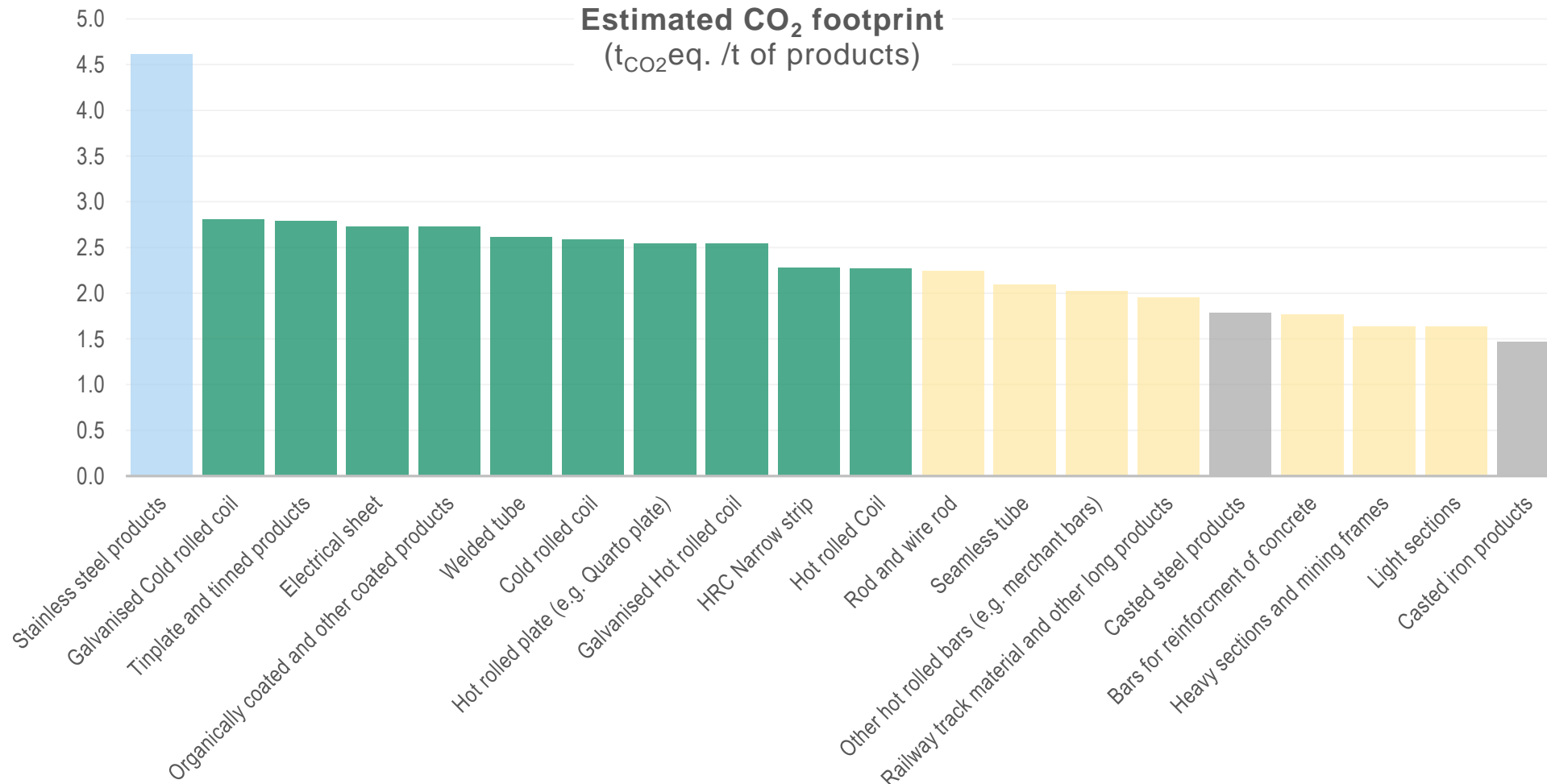
Upstream dependencies related to production (such as Critical Raw materials) are not reported here.

Criteria ①-②-③: Interim ranking



Criteria ④ - CO₂ footprint

⚠ various data sources were used to cover the entire list of candidates



light blue: stainless steel, green: flat products, yellow: long products, grey: cast products

Criteria ⑤ – Targeted economic end-sectors

Economic importance (EI) score for each candidate, based on:

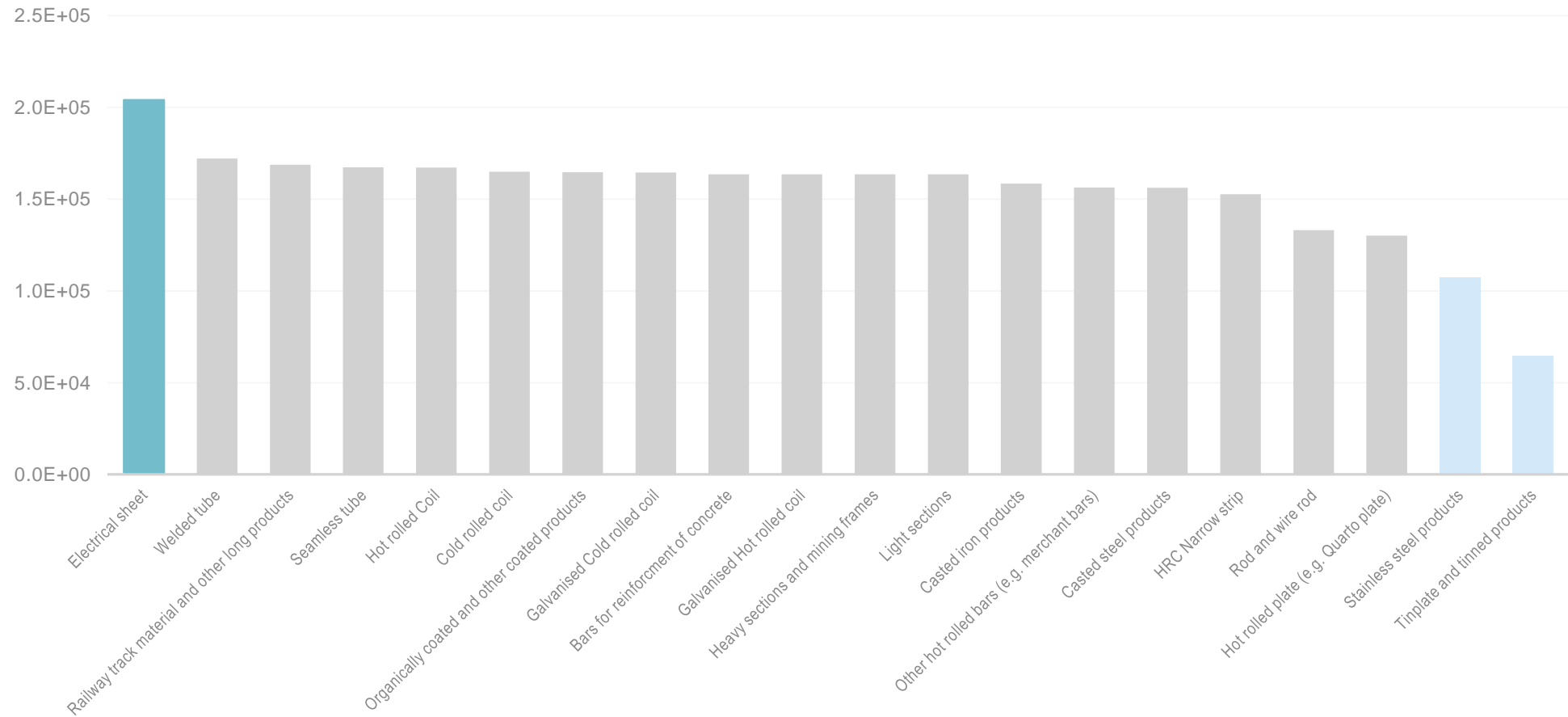
- The share of each intermediate in end-use sectors
- The economic weight (Gross Value Added in million €) of each end-use sectors (retrieved from NACE2 code / similar to CRMs list assessment)

End-use sectors	NACE-2 code	Gross Value Added (M€)	Description
Metal goods (Domestic appliances)	C28	204,200	Manufacture of machinery and equipment n.e.c.
Industrial Machinery (Mechanical)	C28	204,200	Manufacture of machinery and equipment n.e.c.
Transport (HCV + buses)	C29	194,448	Manufacture of motor vehicles, trailers and semi-trailers
Transport (LDV + LCV)	C29	194,448	Manufacture of motor vehicles, trailers and semi-trailers
Infrastructure	C25	163,568	Manufacture of fabricated metal products, except machinery and equipment
Buildings	C25	163,568	Manufacture of fabricated metal products, except machinery and equipment
Industrial machinery (Electrical)	C27	89,422	Manufacture of electrical equipment
Metal goods (Other)	C24	64,561	Manufacture of basic metals
Metal goods (Packaging)	C24	64,561	Manufacture of basic metals
Transport (Other)	C30	55,777	Manufacture of other transport equipment

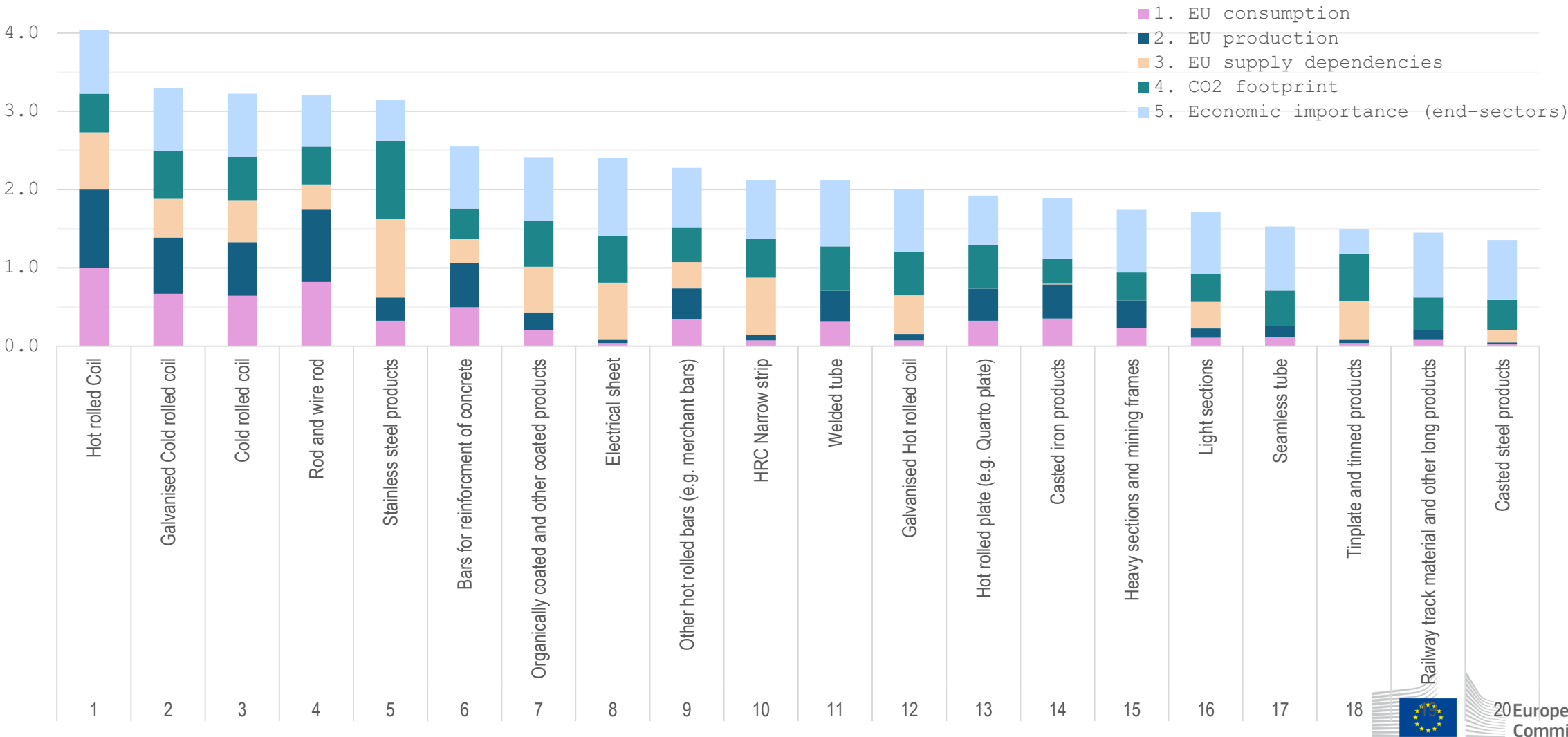


Criteria ⑤ – Targeted economic sectors

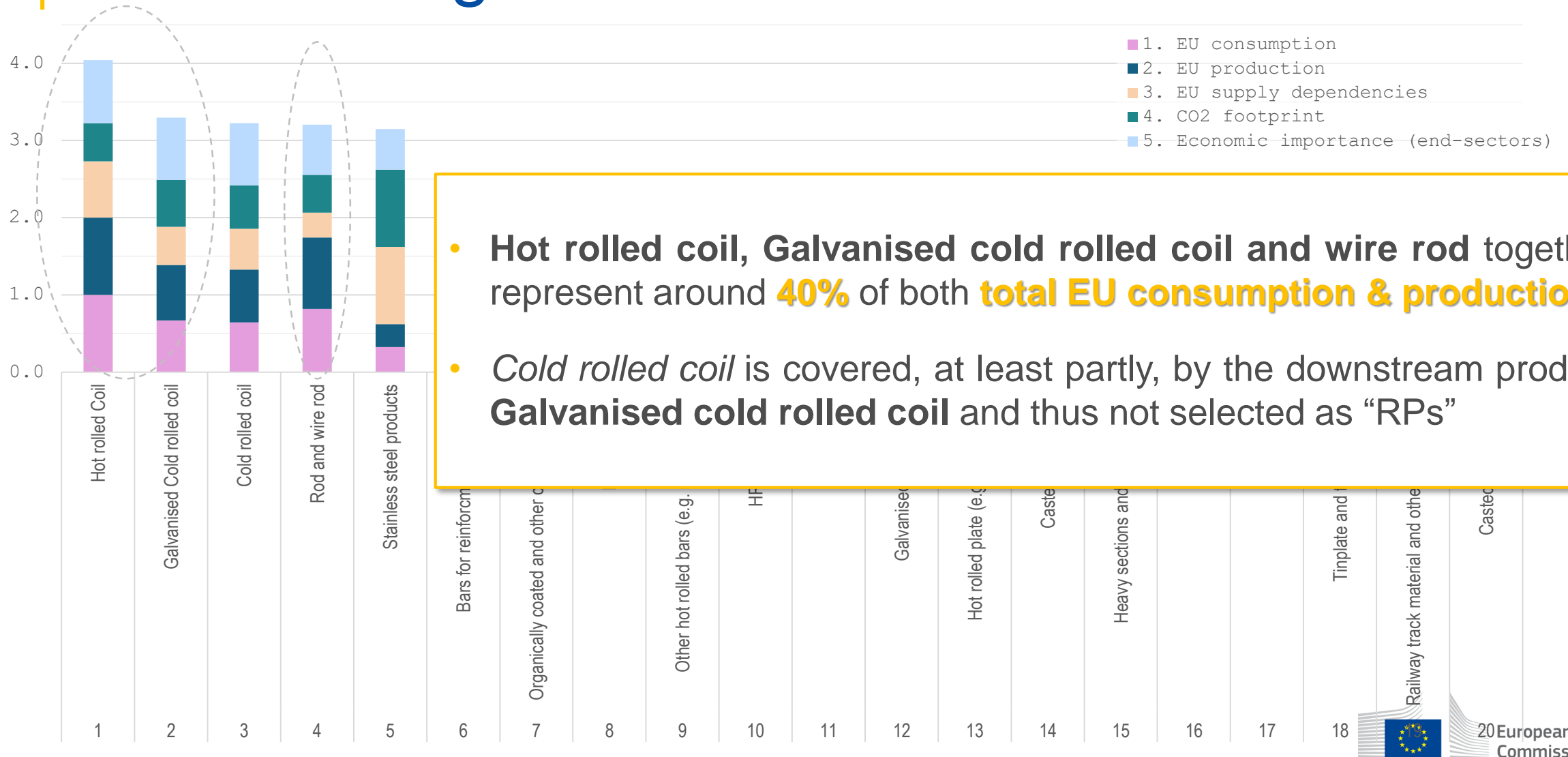
Economic importance for each candidate representative products (in M€)



Final ranking - total scores

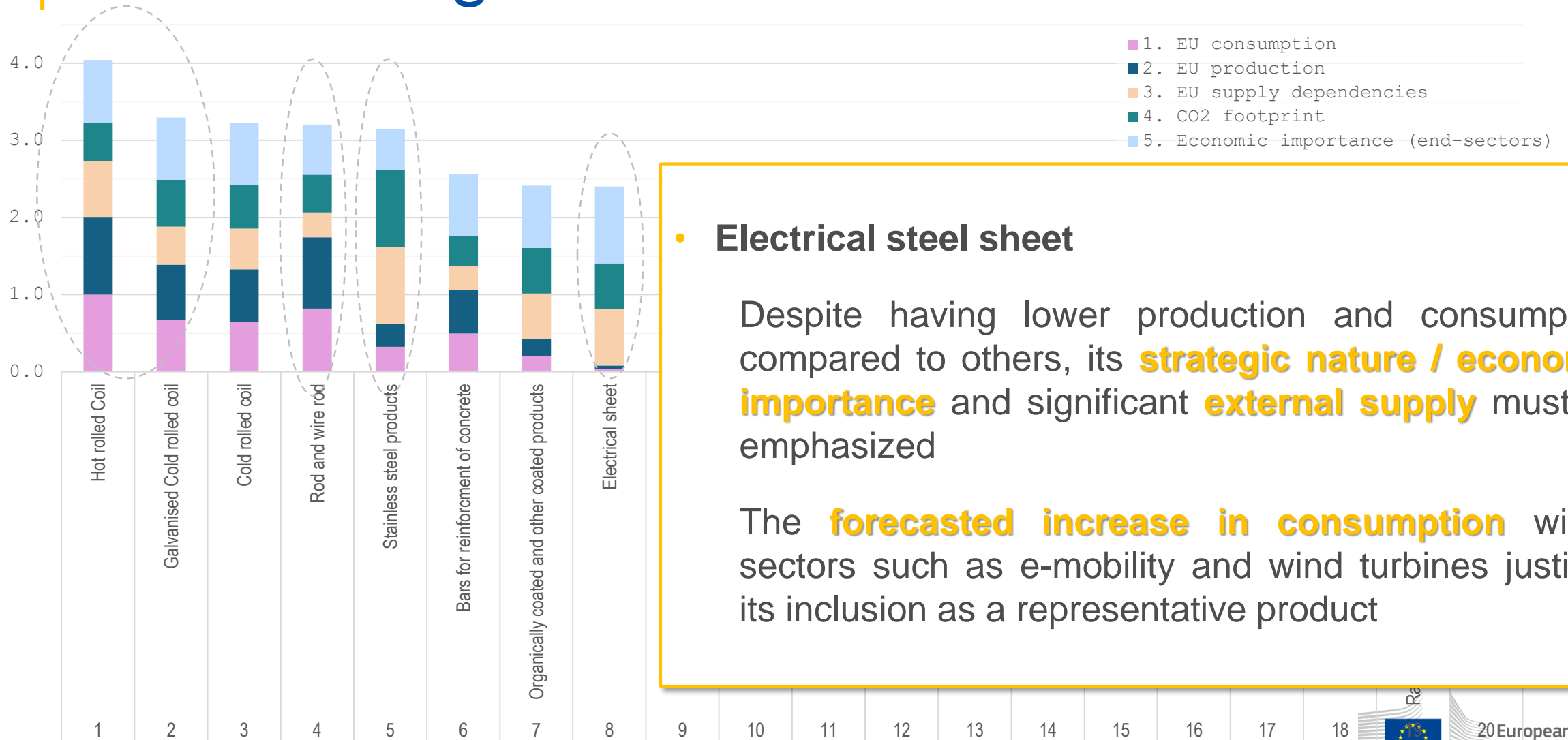


Final ranking - total scores



- **Hot rolled coil, Galvanised cold rolled coil and wire rod together represent around 40% of both total EU consumption & production**
- *Cold rolled coil* is covered, at least partly, by the downstream product **Galvanised cold rolled coil** and thus not selected as “RPs”

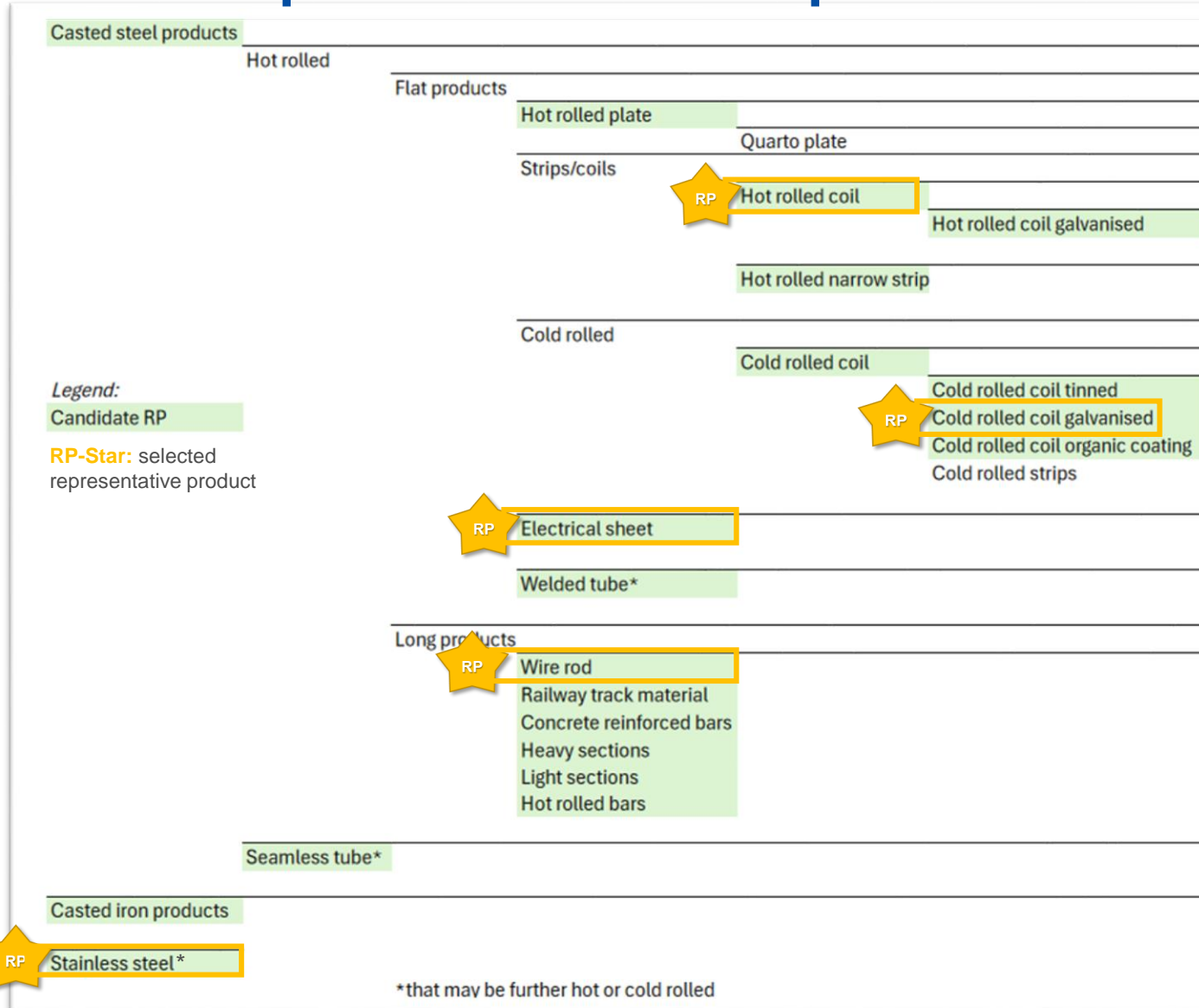
Final ranking - total scores



- Electrical steel sheet**
 Despite having lower production and consumption compared to others, its **strategic nature / economic importance** and significant **external supply** must be emphasized

 The **forecasted increase in consumption** within sectors such as e-mobility and wind turbines justifies its inclusion as a representative product

Selected representative products

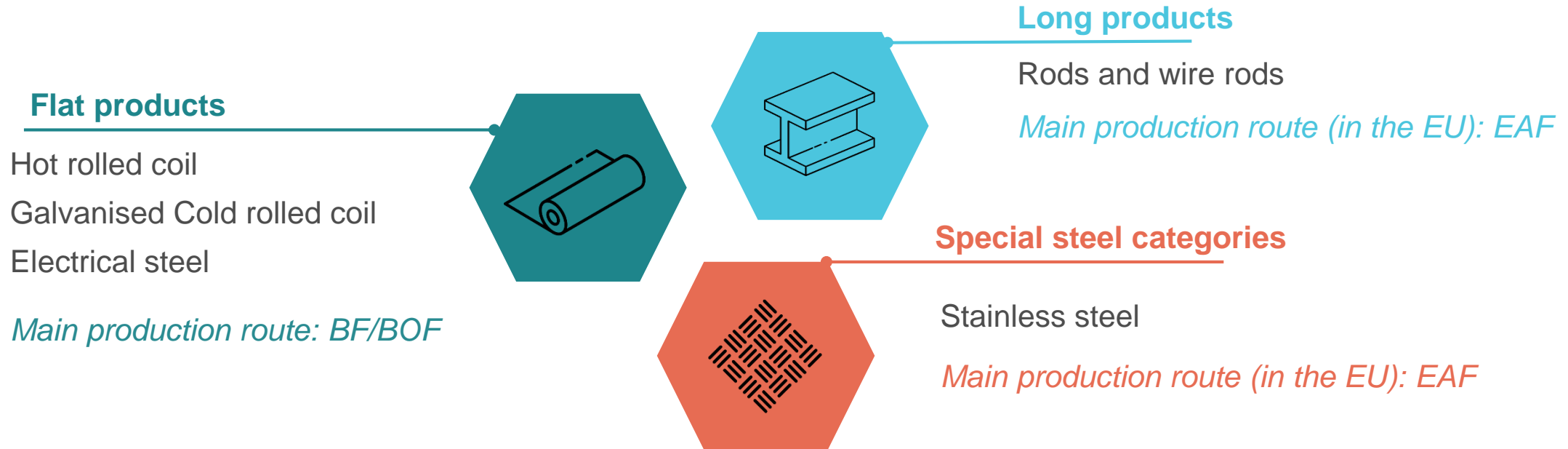


Final RPs List:



- ❖ Hot rolled coil
- ❖ Galvanised cold rolled coil
- ❖ Electrical sheet
- ❖ Rod & wire rod
- ❖ Stainless steel

RPs selection to frame the environmental footprint assessment



Next steps

- Data collection for **Bill of materials** and associated inventory datasets
- Prepare the **environmental footprint** assessment (Task 4) and associated hotspots
- Evaluate the feasibility of potential **policy interventions**

Next sub-task: Bill of Materials

JRC is open to interact with stakeholders to receive technical feedback on datasets

Pre-processing

- ❖ Coke oven
- ❖ Sinter plant
- ❖ Pellet plant
- ❖ Blast Furnace
- ❖ DRI (NG/H₂)

Steelmaking

- ❖ Basic Oxygen Furnace
- ❖ EAF (scrap)
- ❖ EAF (DRI)

Steel manufacturing

- ❖ Hot rolling
- ❖ Cold rolling
- ❖ Hot-dip galvanising
- ❖ Stainless steel (EAF+AOD)
- ❖ Annealing (electrical sheet)
- ❖ Coating
- ❖ Wire drawing

- JRC, 2013 - Best available techniques reference document for iron and steel production
- Greensteel ESTEP, 2023 - Proposal for a rule book relating to the classification system for green steel - Annex II
- Literature

Legend:

already available for potential review
to be performed

Q&A – Task 3

Next steps & Closing Remarks

Immavera Sardone - Policy Officer DG GROW I.1

How will we collect your feedback?

Comment author	Reference (page, section, figure, table, etc.)	Subject	Comment

We will send you a pdf file and a excel template where you can include your comments.



Thank you



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