

A-LCA IWG SG2 Discussion item info. share to IWG

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Purpose

- Set an internationally harmonized material carbon intensity which enables a material technology to evaluate LCA toward carbon neutral

<Point of views>

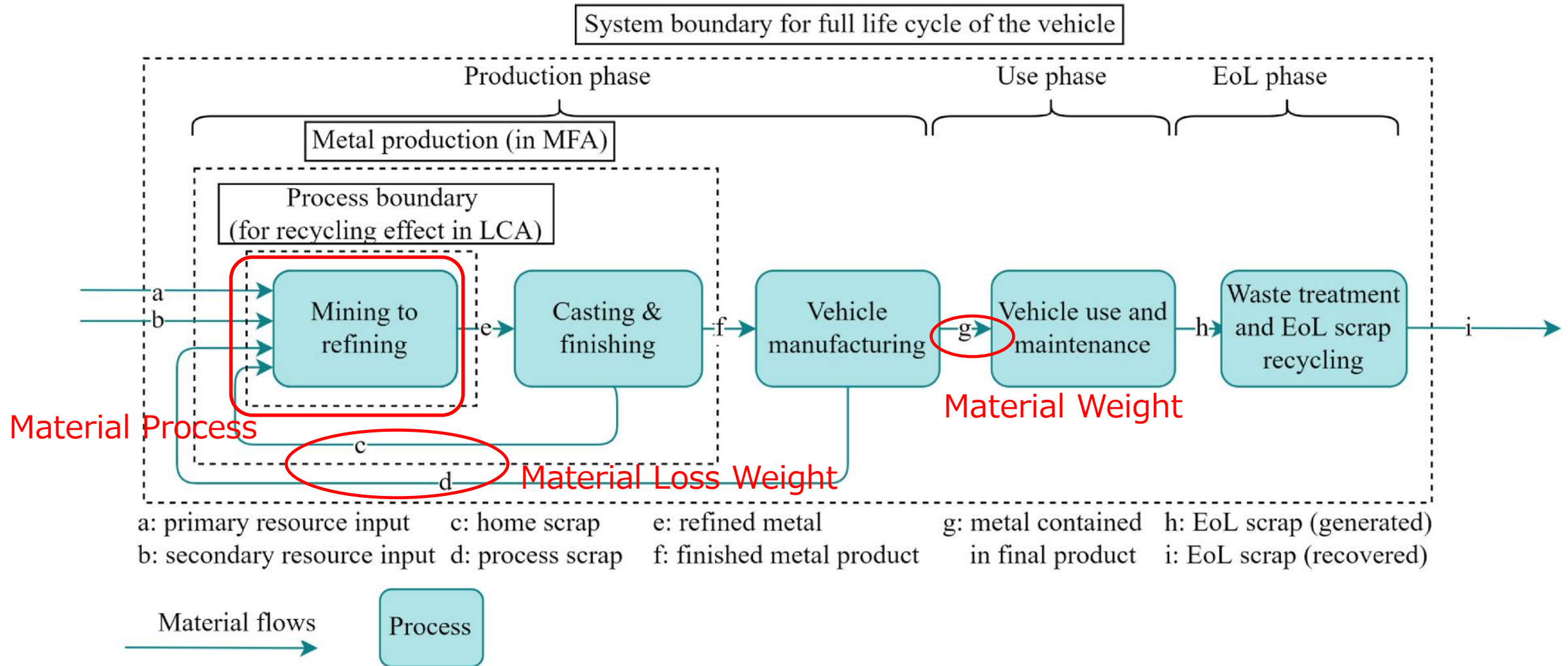
- Usage of **recycled** material, yield (or loss) rate
- Development of global data which enables consideration of **regional electric power** effect.

- **Definition of Activity data & Intensity Data**
- **Primary Data concept (level concept)**
- **Definition of Material list for Automotive LCA**
- **System scope & boundary**
- **How shall we collect data**
- **Global & Regional Secondary data handling**
- **Secondary data definition/which DB to use (incl. data quality)**
- **Verification of data**

Overall schedule plan

	2023						2024						2025
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	2Q	3Q	4Q	-
IWG MTG			★	★			★				★		★ ★
SG2 Purpose agreement	→												
Definition of Activity data & Intensity Data	→												
Primary Data concept	→												
Definition of Material list for Automotive LCA		→	★	→									
System scope & boundary			★	→					→				
How shall we collect data									→				
Global & Regional Secondary data handling										→			
Secondary data definition/which DB to use												→	
Verification of data													→
Drafting													→

Definition of Activity data & Intensity Data



reference: (2)Impact of recycling effect in comparative life cycle assessment for materialsselection - A case study of light-weighting vehicles
<https://www.sciencedirect.com/science/article/pii/S0959652622009465?via%3Dihub>

Activity Data : Material Weight & Loss Weight / Intensity Data : Material Process

Primary Data concept (level concept)

Level	Activity Data			Intensity Data
	Vehicle Wight [kg]	Material Distribution [%]	Scrap Rate of Material [%]	Carbon Intensity of Material Acquisition [kg-CO ₂ e/kg]
Level1	Primary data	All Secondary data	All Secondary data	All Secondary data
	Amount of Material Use at the Vehicle [kg]		Scrap Rate of Material [%]	Carbon Intensity of Material Acquisition [kg-CO ₂ e/kg]
Level2	All Primary data		All Secondary data	All Secondary data
Level2.5	↑		Partially Primary data	↑
Level3	↑		All Primary data	↑
Level3.5	↑		↑	Partially Primary data
Level4	↑		↑	All Primary data

Level 2 (2.5) might be a target for 2025

VDA material

VDA Classification	VDA Classification Name
1.1	Steel/cast steel/sintered alloys
1.1.1	Unalloyed/low alloy steel
1.1.2	high-alloy steel
1.2	cast iron
1.2.1	Gneissic graphite cast iron/ malleable cast iron
1.2.2	Spheroidal graphite cast iron/Vermular cast iron
1.2.3	high-alloy cast iron
2.1	Aluminium / aluminium alloys
2.1.1	Cast aluminium alloys
2.1.2	Forged aluminium alloy
2.2	Magnesium, magnesium alloys
2.2.1	Cast magnesium alloy
2.2.2	Forged magnesium alloy
2.3	Titanium, titanium alloys
3.1	Copper (e.g. copper in harnesses)
3.2	copper alloy
3.3	zinc alloy
3.4	nickel alloy
3.5	lead (the metal)
4.1	Platinum/rhodium
4.2	Other special metals

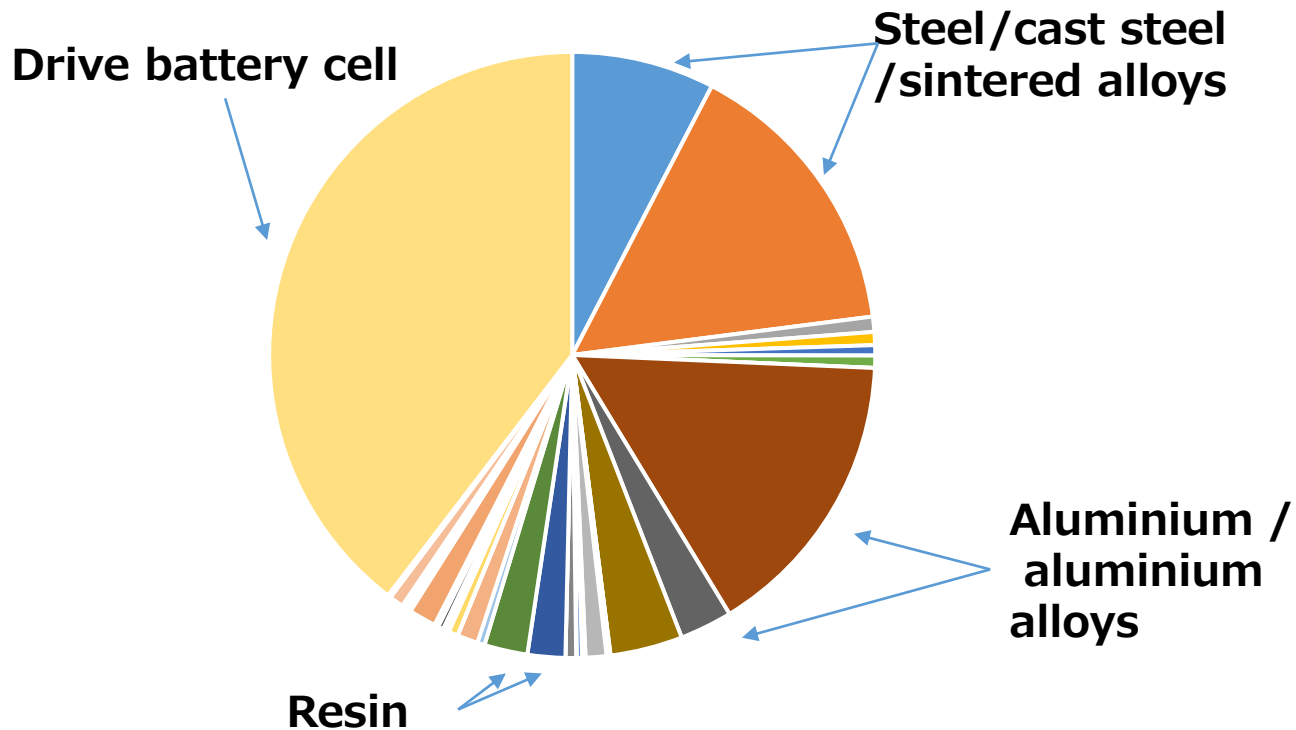


Not enough to show low CO2 material effect by VDA classification

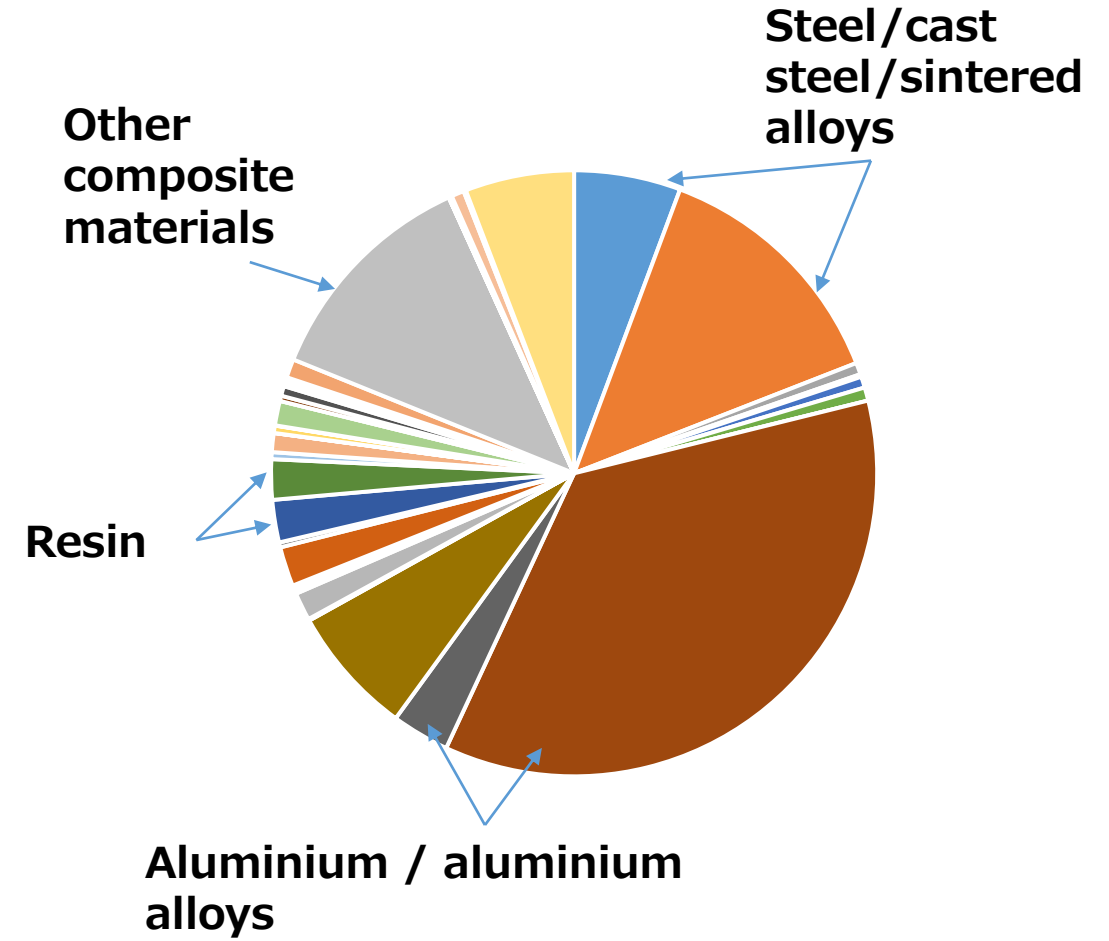
5.1	thermoplastic resin
5.1.a	Thermoplastic resin (containing filler)
5.1.b	Thermoplastic resin (without filler)
5.2	thermoplastic elastomer
5.3	Elastomer/elastomer composites
5.4	thermosetting resin
5.4.1	polyurethane
5.4.2	unsaturated polyester
5.4.3	Other thermosetting resins
5.5	Polymer composites (e.g. laminated trim parts)
5.5.1	Resins in polymer composites.
5.5.2	Fibres in polymer composites (textiles)
6.1	painting material
6.2	Adhesives, sealants
6.3	underseal
7.1	Organic natural materials (e.g. leather)
7.2	Ceramics/glass
7.3	Other composite materials (e.g. friction linings)
8.1	Electronic component materials (e.g. PCBs, displays)
8.2	Electrical component materials
9.1	fuel
9.2	lubricant
9.3	brake fluid
9.4	Coolant/other glycols
9.5	refrigerant
9.6	Washer fluid, battery fluid
9.7	preservative
9.8	Other fuels and replenishers
	Tyre
	lead-acid battery
	Drive battery cell

Example of applicable products

■ Small EV



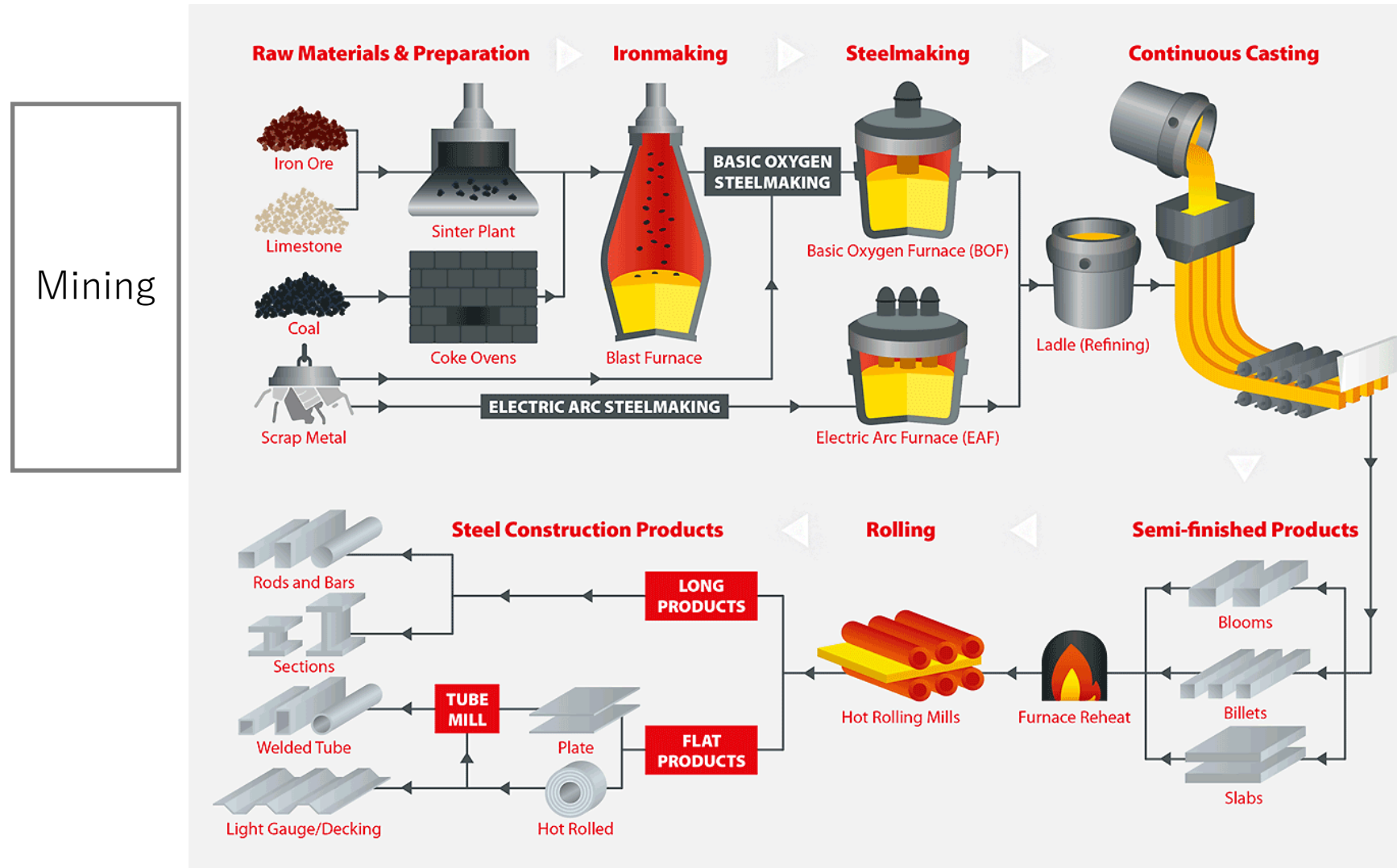
■ FCV



**It depends on each vehicle design concept
But we'd like to make agreement of common material classification**

Example of Material process

■ Example of Steel



Need to consider Material Process for material classification

	Item
1	Steel Discussion
2	Aluminum Discussion
3	Copper Discussion
4	Resin Discussion
5	BATT. Material Discussion (Need to check EU BATT regulation)

Deep discussion are necessary for Main material of Vehicle

End
