Level Concept Implementation in SG3

(proposal for hotspot parts in level 3)

A-LCA 10th session

Brussels, 2023-10-17/18

Level concept from SG3 perspective

SUPPLY CHAIN & PRODUCTION	Possible Comparison[1)]	Vehicle modelling	Representativeness[2)]	Supply chain modelling	OEM manufacturing Processes	Supplier manufacturing process	Individual decarbonisation measures
Level 1	General concept of drivetrains (e.g. BEV vs. ICEV)	Generic material composition & average vehicle curb weight	Global average / regional	generic footprint per kg of vehicle curb weight			none
Level 2	General concept of drivetrains (e.g. BEV vs. ICEV) based on exemplary „real“ car vehicle model	BOM & Material information system (CMDS / IMDS[3)])	Global average / regional	global secondary data material footprints (incl. generic information for production processes)			none
Level 3	A representative vehicle of OEM A VS A representative vehicle of OEM B	BOM & Material information system (CMDS / IMDS) & „part-by-part“ for hotspots	Regional & individual SC for hotspots	primary information for the vehicle hotspot parts	Optional: primary data for OEM's inhouse hot spot processes	primary information for the manufacturing of vehicle hotspot parts	included
				secondary information for the rest	Secondary information for the rest or average values per vehicle from OEM's Scope 1 & 2 emissions	secondary information for the rest	
Level 4	e.g. OEM A's BEV model vs. OEM B's BEV model	BOM („part-by-part“)	individual SC	regional or primary data based part (& material) footprints	included	included	included

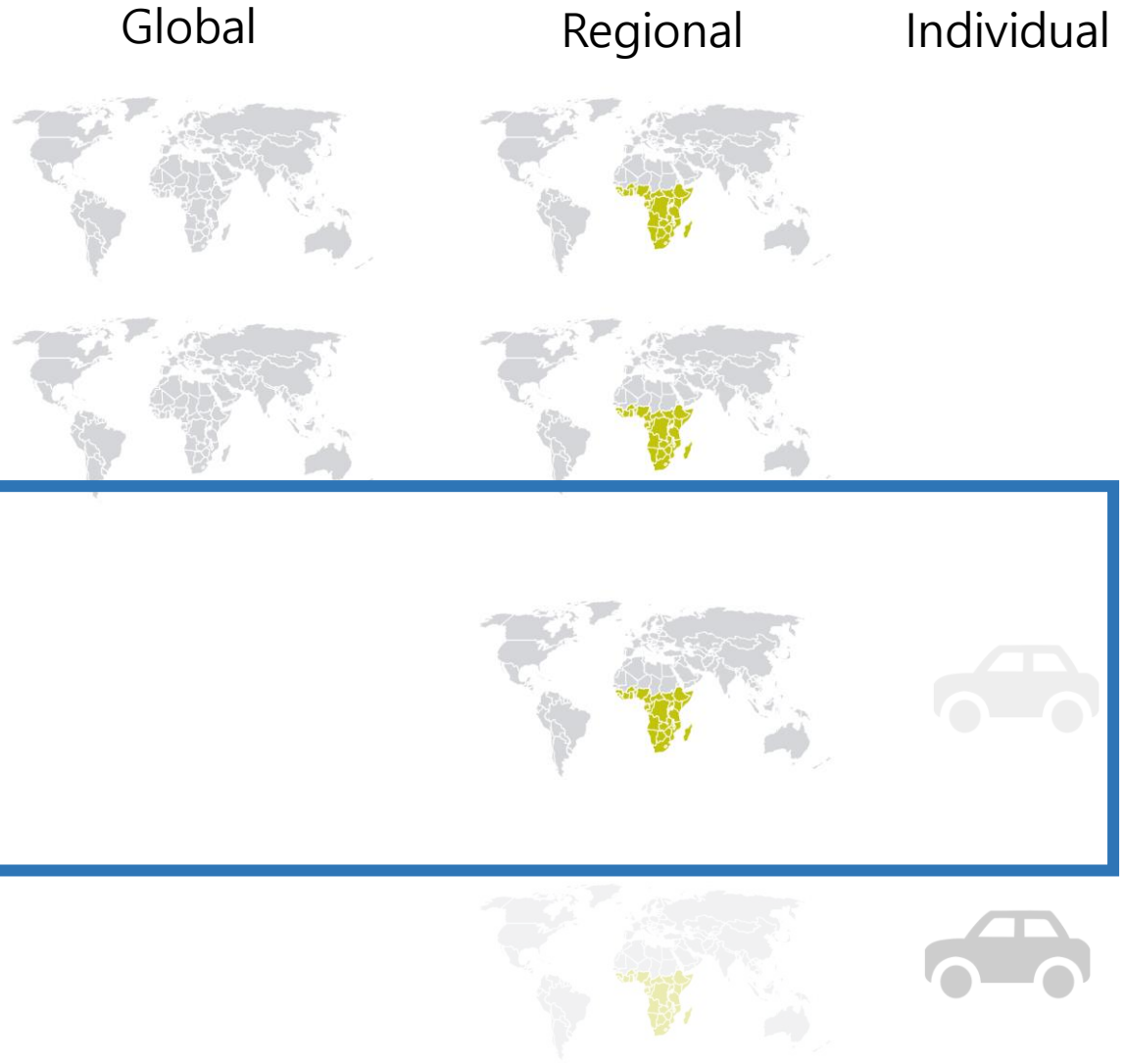
1) a column describing comparable objects to help you understand the concepts at each level, giving hints about how to access them by level and what data to find

2) data information characteristics that can be used for evaluation

3) (CDMS) Chinese Material Data System, (IMDS) International Material Data System

Increasing focus of geographic representativeness / specificity

SUPPLY CHAIN & PRODUCTION	Possible Comparison[1)]	Vehicle modelling	Representativeness[2)]
Level 1	General concept of drivetrains (e.g. BEV vs. ICEV)	Generic material composition & average vehicle curb weight	Global average / regional
Level 2	General concept of drivetrains (e.g. BEV vs. ICEV) based on exemplary „real“ car vehicle model	BOM & Material information system (CMDS / IMDS[3)])	Global average / regional
Level 3	A representative vehicle of OEM A VS A representative vehicle of OEM B	BOM & Material information system (CMDS / IMDS) & „part-by-part“ for hotspots	Regional & individual SC for hotspots
Level 4	e.g. OEM A‘s BEV model vs. OEM B‘s BEV model	BOM („part-by-part“)	individual SC



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Modelling of supply chain / manufacturing processes as final criteria

SUPPLY CHAIN & PRODUCTION	Possible Comparison[1)]	Vehicle modelling	Representativeness[2)]	Supply chain modelling	OEM manufacturing Processes	Supplier manufacturing process	Individual decarbonisation measures
Level 1	General concept of drivetrains (e.g. BEV vs. ICEV)	Generic material composition & average vehicle curb weight	Global average / regional	generic footprint per kg of vehicle curb weight			none
Level 2	General concept of drivetrains (e.g. BEV vs. ICEV) based on exemplary „real“ car vehicle model	BOM & Material information system (CMDS / IMDS[3)])	Global average / regional	global secondary data material footprints (incl. generic information for production processes)			none
Level 3	A representative vehicle of OEM A VS A representative vehicle of OEM B	BOM & Material information system (CMDS / IMDS) & „part-by-part“ for hotspots	Regional & individual SC for hotspots	primary information for the vehicle hotspot parts	Optional: primary data for OEM's inhouse hot spot processes	primary information for the manufacturing of vehicle hotspot parts	included
				secondary information for the rest	Secondary information for the rest or average values per vehicle from OEM's Scope 1 & 2 emissions	secondary information for the rest	
Level 4	e.g. OEM A's BEV model vs. OEM B's BEV model	BOM („part-by-part“)	individual SC	regional or primary data based part (& material) footprints	included	included	included

1) a column describing comparable objects to help you understand the concepts at each level, giving hints about how to access them by level and what data to find

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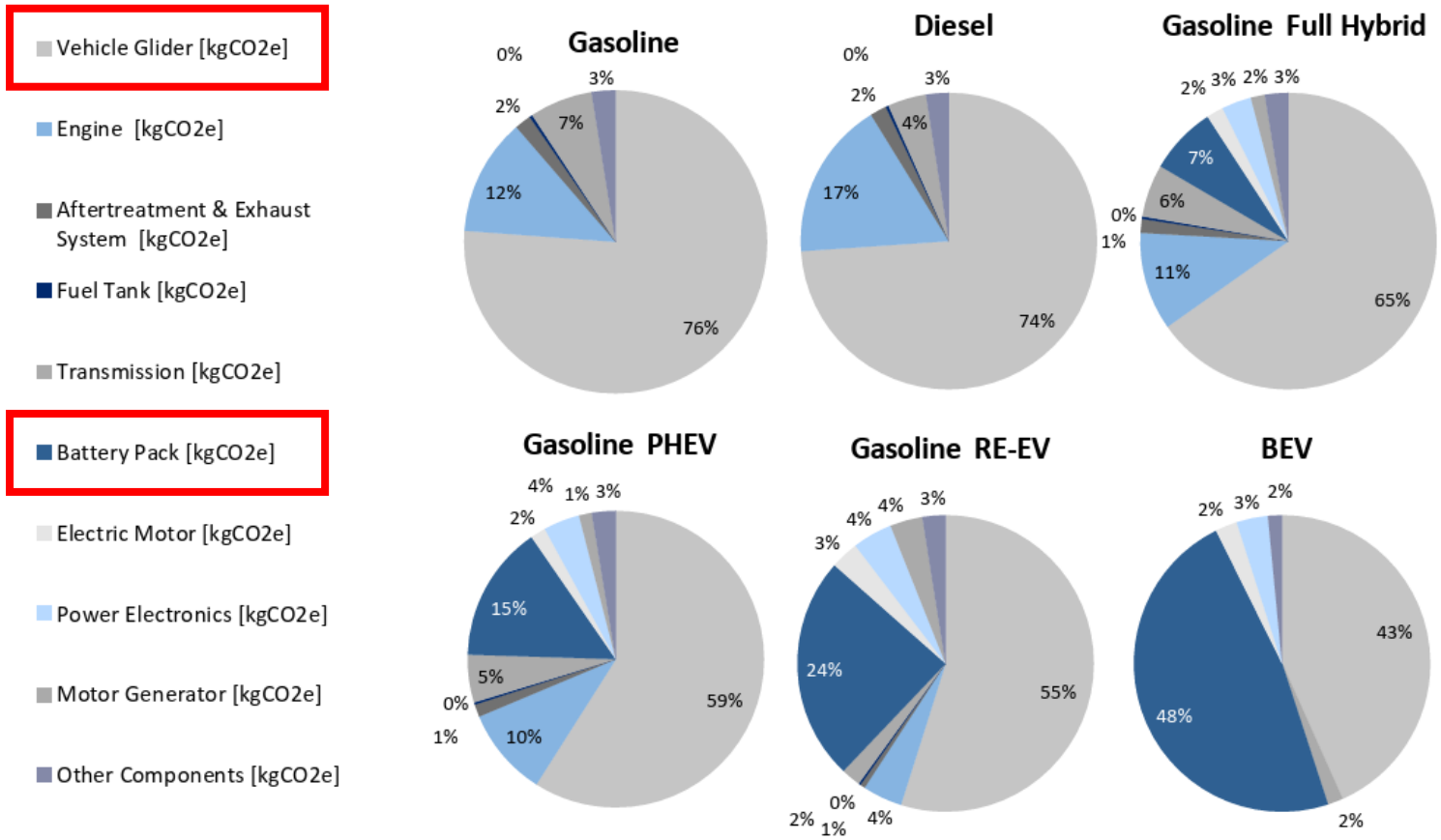
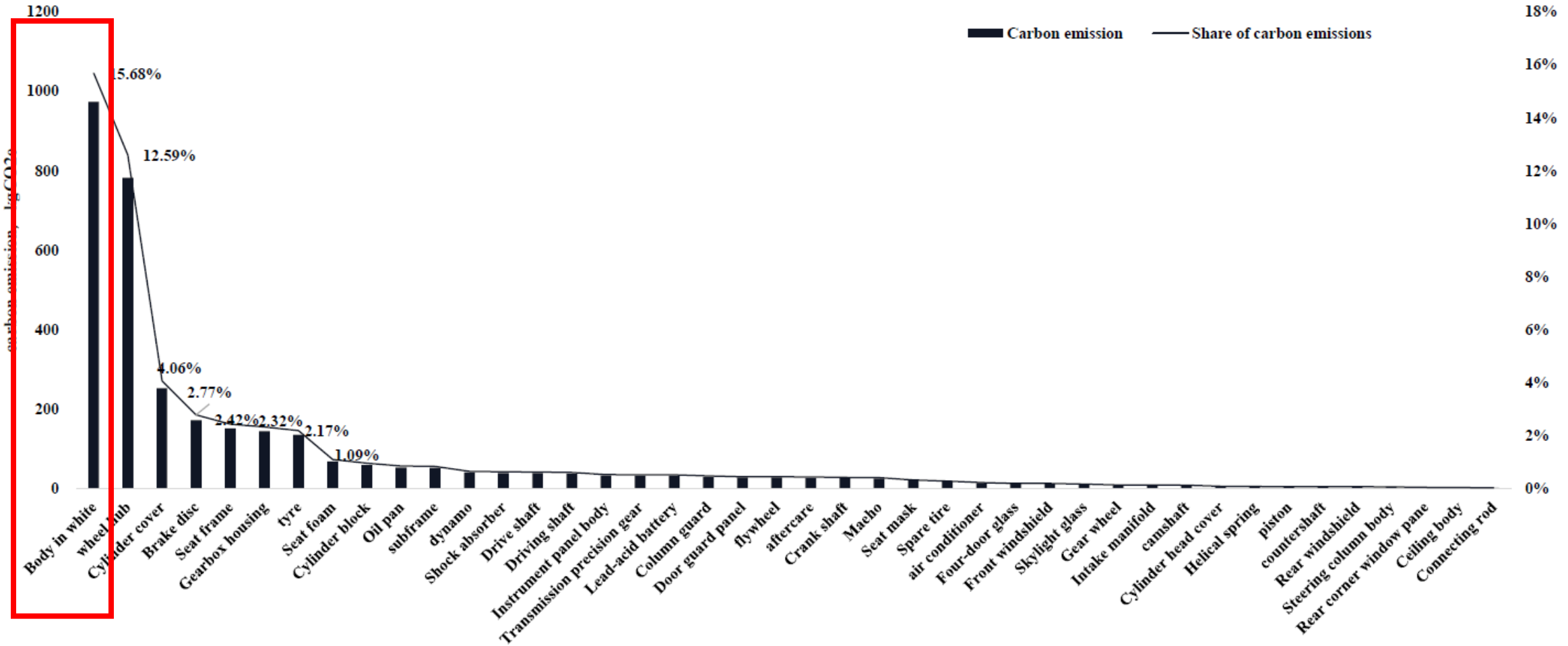
RICARDO | hotspots in vehicle production



Source: 2020_study_main_report_en.pdf (europa.eu)

Hotspot analysis in high CO2 emissions parts

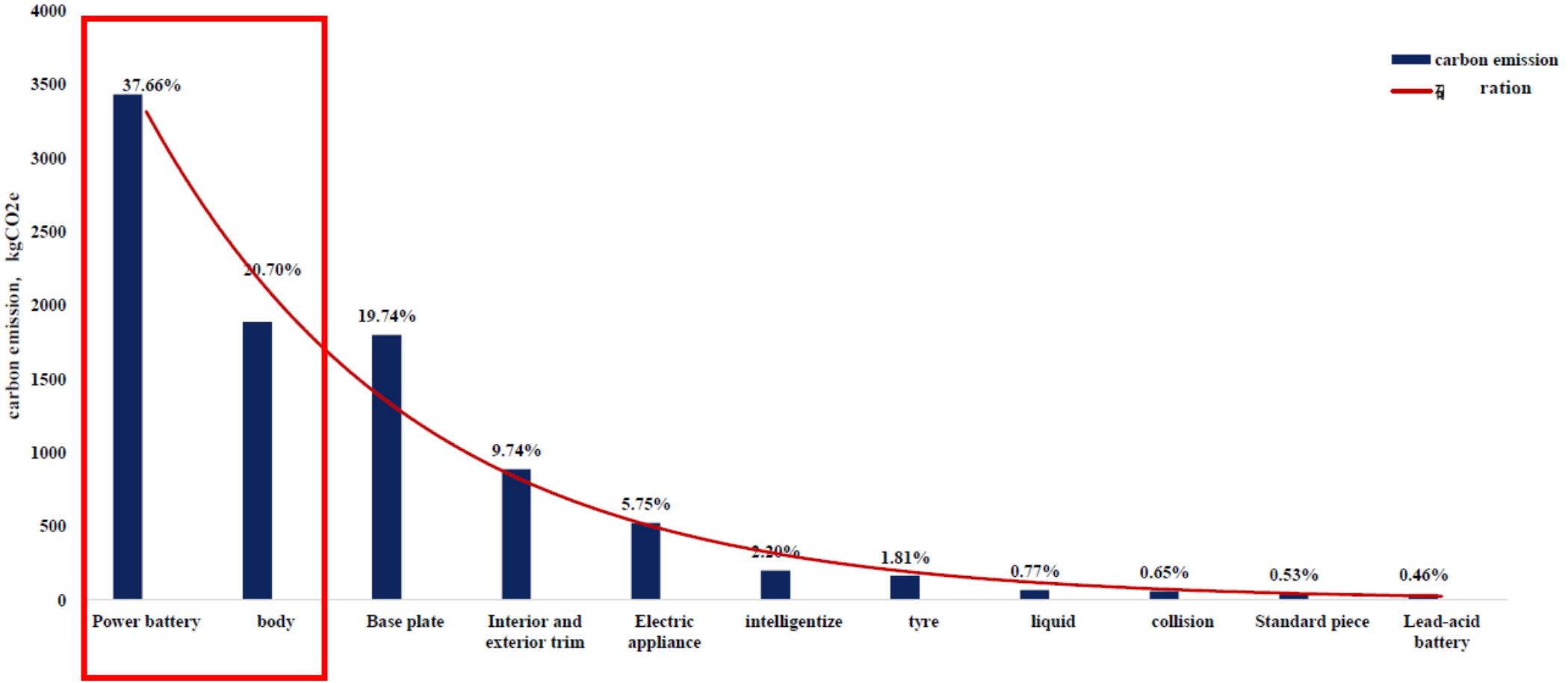
Hotspot of high CO2 emissions parts: Taking one ICEV model as an example, the parts with higher carbon emissions are the body in white, wheel hub, cylinder head, brake frame and seat skeleton, with carbon emissions accounting for 16%, 13%, 4%, 2.8% and 2.5%, respectively



Hotspot analysis in high CO2 emissions parts

中国汽车技术研究中心有限公司
China Automotive Technology and Research Center Co., Ltd.

Hotspot of high CO2 emissions parts: Taking one BEV model as an example, the components with higher carbon emissions are the power battery, body, chassis, interior and exterior decoration and electrical equipment, accounting for 38%, 20%, 20%, 10% and 6% respectively



Proposal for „hotspot parts“ in level 3

- Hotspot part #1:
  battery
- Hotspot parts #2:
  body-in-white
  - inhouse parts: primary data (wherever possible)
  - bought parts: primary data or regional information (wherever poss ible)

- **Choice is justified by RICARDO & CATARC findings and is backed-up by OICA member findings**