

A decorative header consisting of a series of overlapping, semi-transparent geometric shapes in a color gradient from red on the left to green on the right. The shapes are primarily triangles and trapezoids, creating a dynamic, abstract pattern.

# Level Concept and Vehicle Production

Ansgar Christ

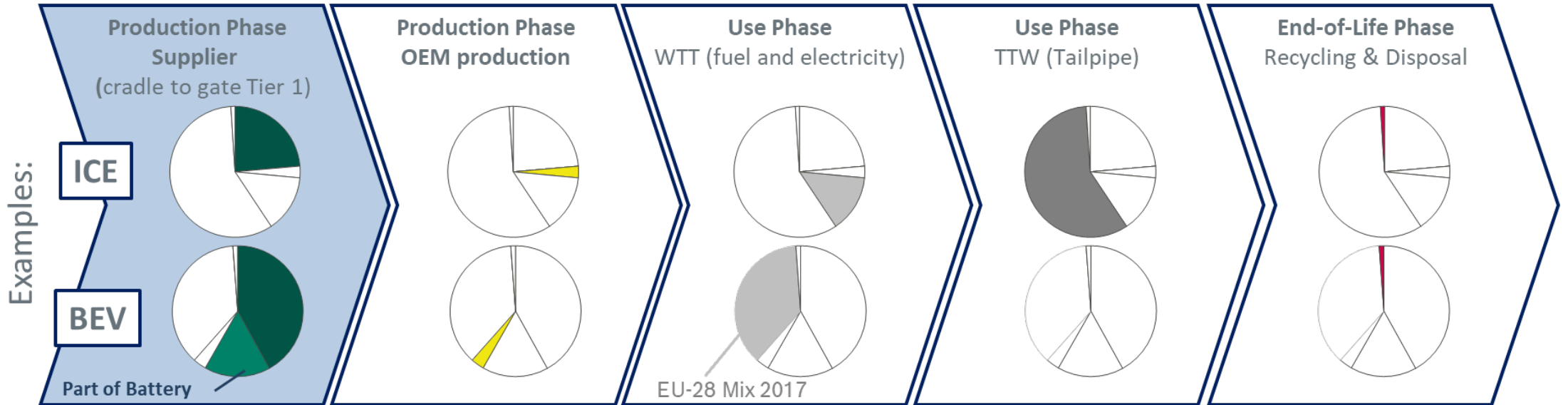
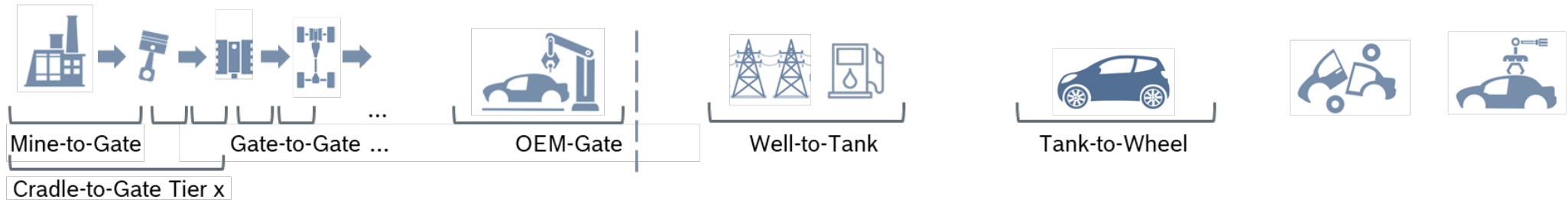
# Eurogas Automotive Life Cycle Assessment Outline

- ▶ Level Concept
- ▶ Production: Vehicle Model in L1 – L4

# Eurogas Automotive Life Cycle Assessment

► Supply chain's share of CO<sub>2</sub>e emissions is increasing

Electrification increases share of GHG emissions upstream within the life-cycle, into supplier responsibility



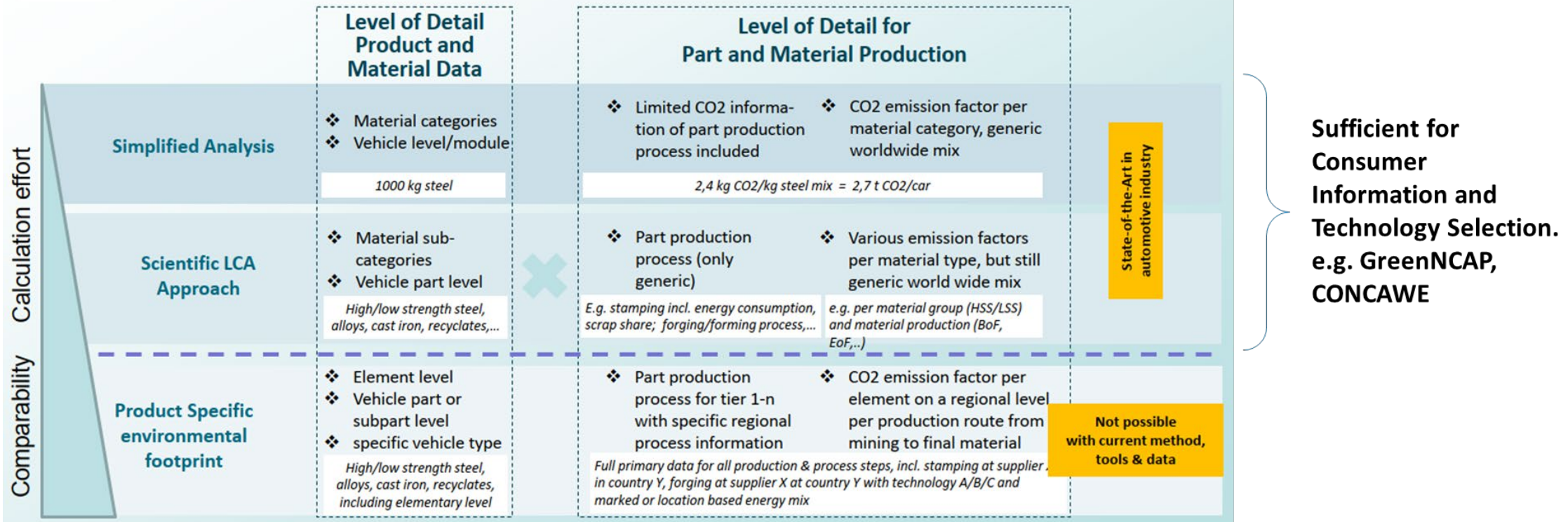
(1) CLEPA estimate based on [Volvo C40 Recharge LCA Report](#)

# Eurogas Automotive Life Cycle Assessment

## Motivation for CFP Analysis



## Granularity and Comparability



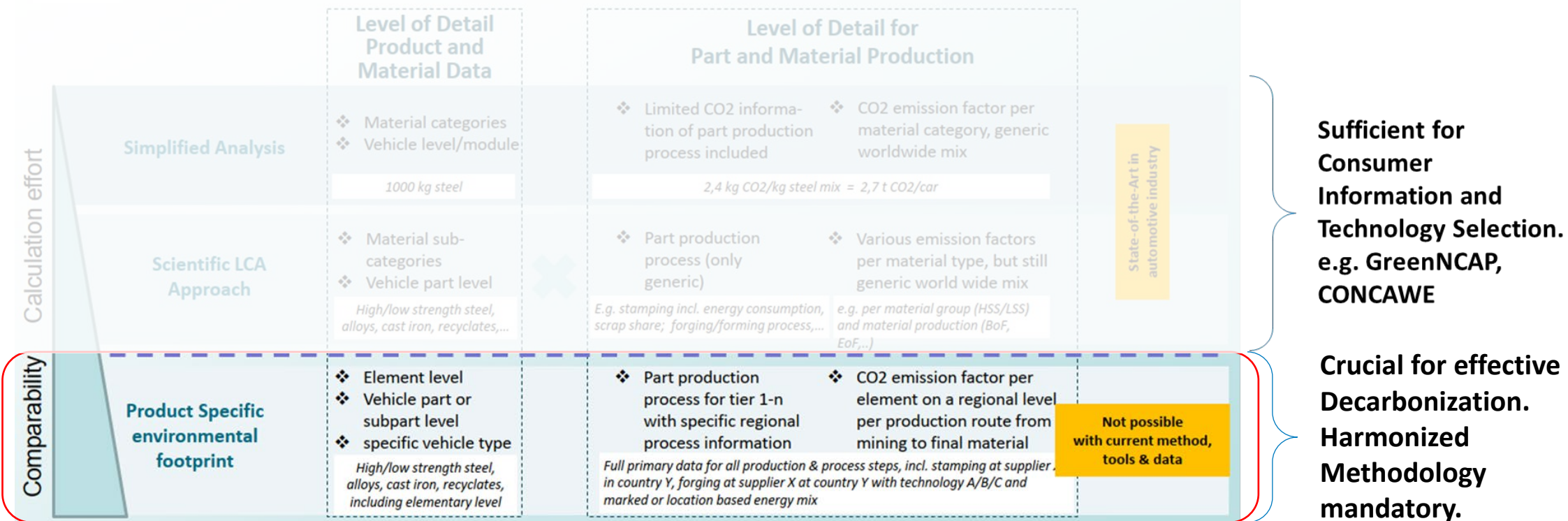
Source: OICA presentation @ UNECE WS on A-LCA

# Eurogas Automotive Life Cycle Assessment

## Motivation for CFP Analysis



### Granularity and Comparability



Source: OICA presentation @ UNECE WS on A-LCA

# Eurogas Automotive Life Cycle Assessment

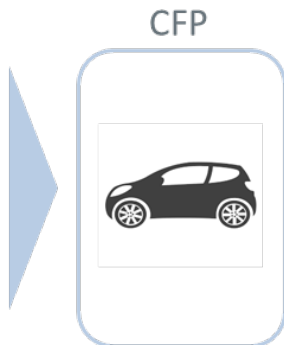
## ▶▶ Level Concept

| Level | Intended Use  | Approach | e.g. Research Question  | Vehicle Model   |
|-------|---|----------|---|---|
| L1    | <ul style="list-style-type: none"> <li>General use, research and public policy making,</li> <li>Industry strategic planning</li> </ul>  | Flexible | “What is the right mobility concept for a city?”<br>- comparison of vehicle segments                            | Mass representation   |
| L2    | <ul style="list-style-type: none"> <li>Research and public policy development</li> <li>Industry strategic planning</li> <li>Product development and improvement</li> <li>Marketing, e.g. technology choices</li> </ul>            | Flexible | “What is the carbon footprint of powertrain technologies in urban traffic?”<br>- comparison of ICE, HEV, BEV... | Material break-down   |
| L3    | <ul style="list-style-type: none"> <li>OEM’s official reporting for public information, marketing, gov. programs ...</li> <li>Partially supplier’s official reporting for public information, Tier n-1, marketing, ...</li> </ul> | Fixed    | “What is the carbon footprint of EM-technologies in OEM model xy?”<br>- comparison of PSM and ASM technology    | Two part model: <ul style="list-style-type: none"> <li>Hotspots: components &amp; parts break-down</li> <li>Rest of vehicle: Material break-down</li> </ul> |
| L4    | OEM’s and supplier’s official reporting <ul style="list-style-type: none"> <li>for public information, marketing, ...</li> <li>government programs, ...</li> </ul>  | Fixed    | “What is the carbon footprint of a specific vehicle model?”<br>- comparison of model xx w/ xy                   | Component & parts break-down, (transport and energy specific)   |

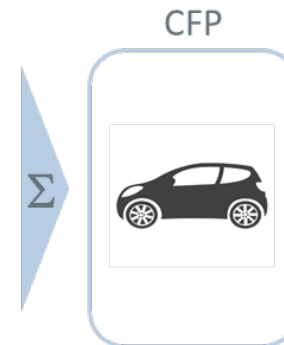
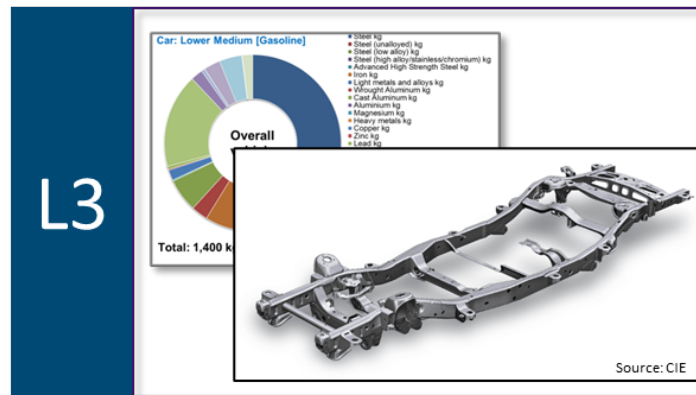
# Eurogas Automotive Life Cycle Assessment

## ► Production: Vehicle Model

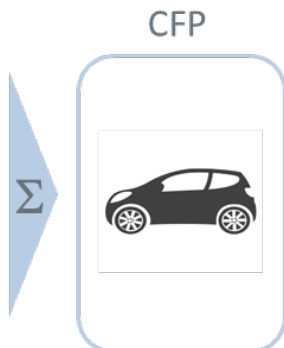
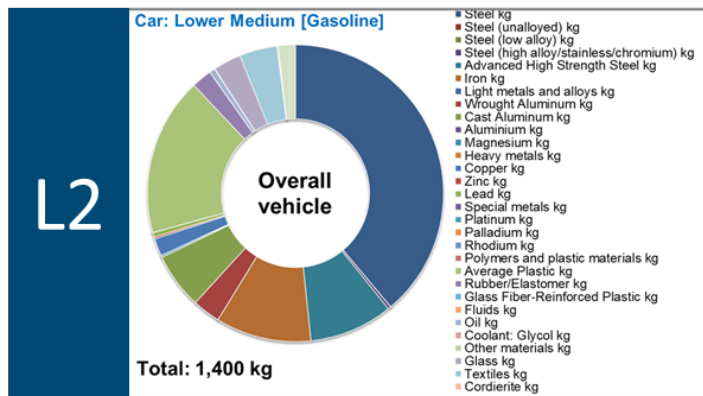
Mass representation



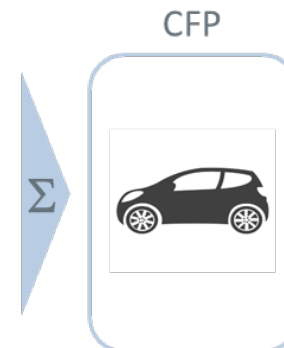
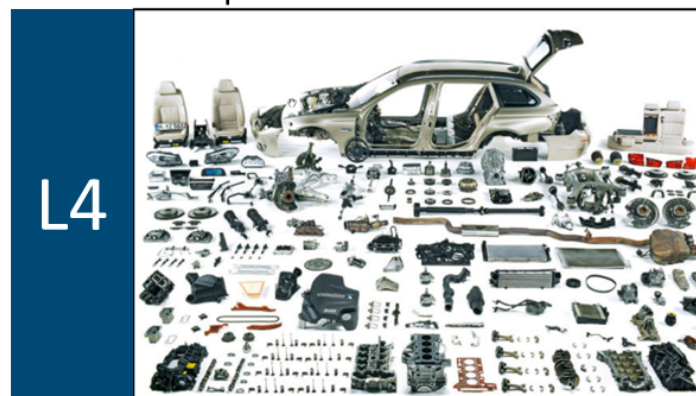
Material & C/P break-down



Material break-down

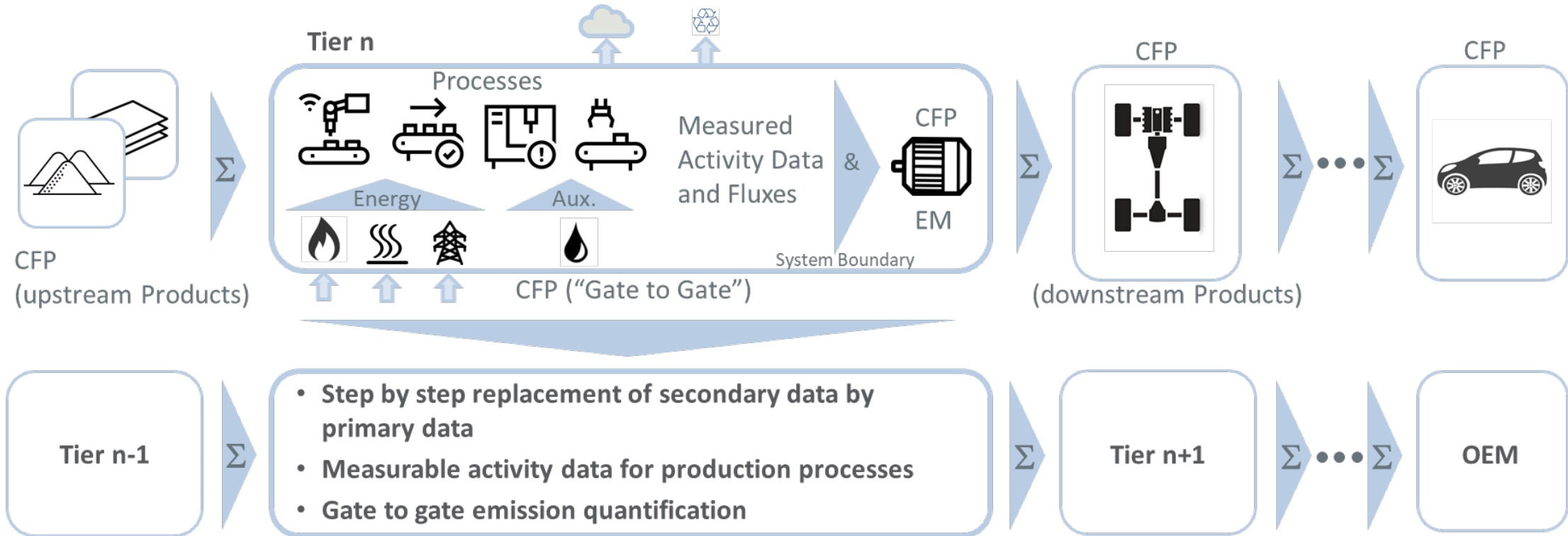


Component & Part break-down



# Eurogas Automotive Life Cycle Assessment

## ► How to quantify the CFP contribution along the supply chain?



- Cradle to gate emission quantification summing up through supply chain → product individual data
- Reduced effort: Tier n quantifies emissions of own operations only



# Thank You!