

# MRV of transport measures

## Linkages to (bottom-up) inventories

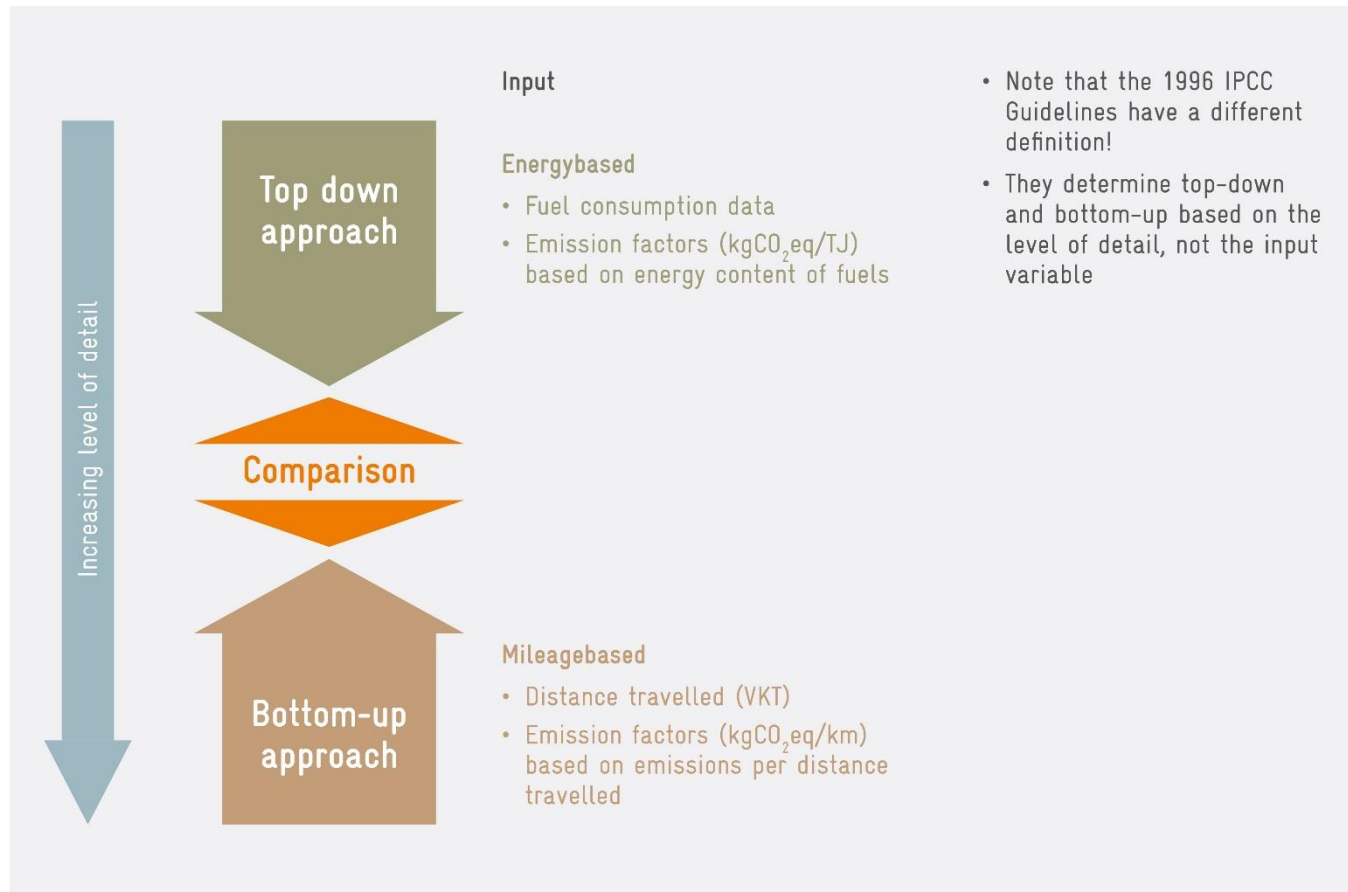
# Outline

- Differences in terminology
- GHG inventories in the transport sector
- Boundary setting for inventories and MRV
- Calculation approaches and data needs for MRV of mitigation
- Examples: using inventory data for the MRV of measures
- Synergies and limitations

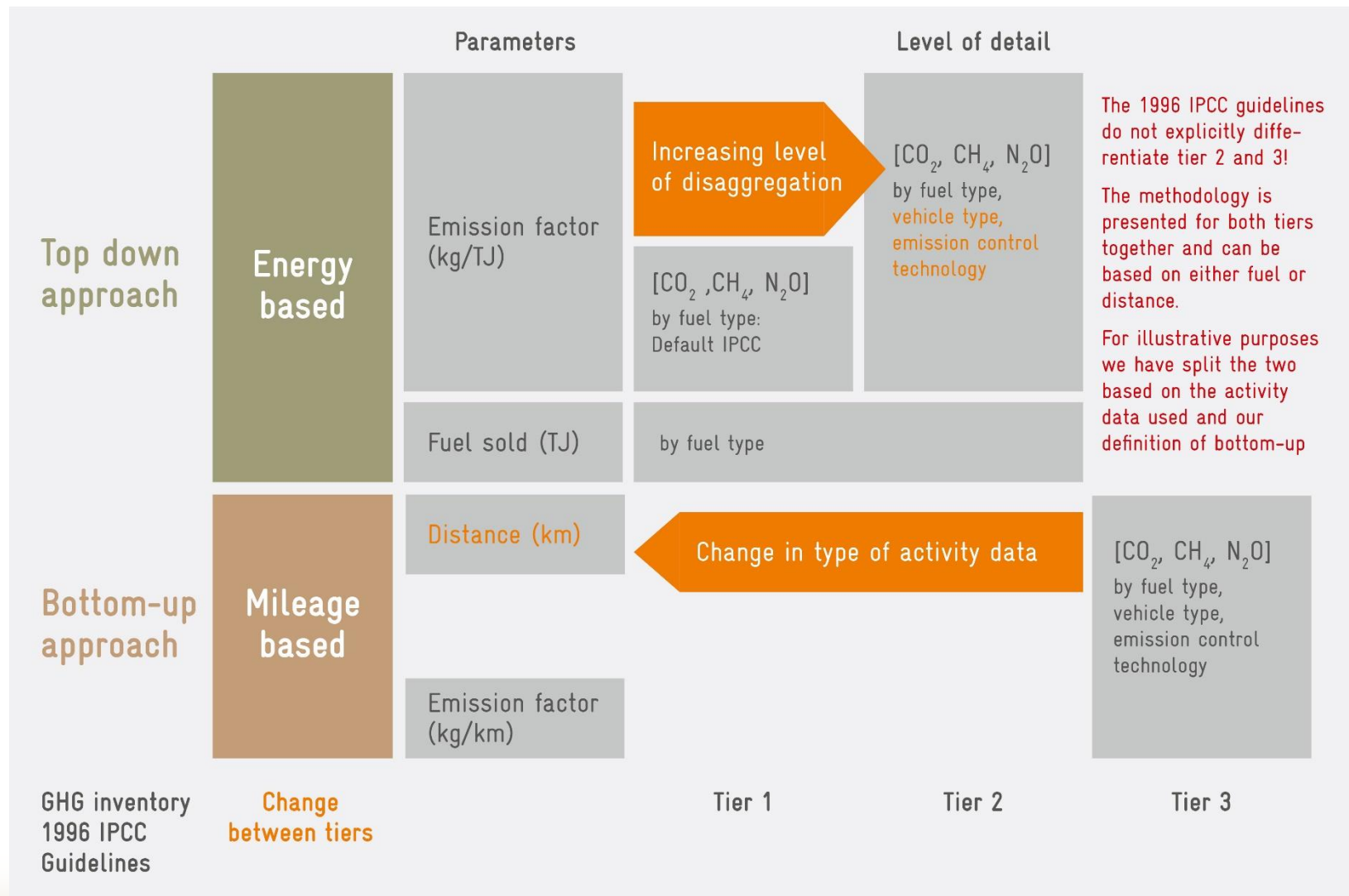
# Terminology: activity data

- The most basic equation for calculating emissions is
  - **Emissions = Activity x Emission factor**
- It is important to note that both terms in this equation can be used to specify very different things, for example:
  - Activity = Fuel used (IPCC tier 1)
    - ➔ Emission factor CO<sub>2</sub>e / energy content (TJ)
  - Activity = Distance travelled (IPCC tier 3)
    - ➔ Emission factor CO<sub>2</sub>e / vehicle kilometre (vkt)
- In transport sector MRV “activity” usually refers to the distance travelled, as
  - Vehicle kilometre (vkt) or
  - Passenger kilometre (pkt) / tonne-km
- It is important to always specify what type of “activity” data is meant

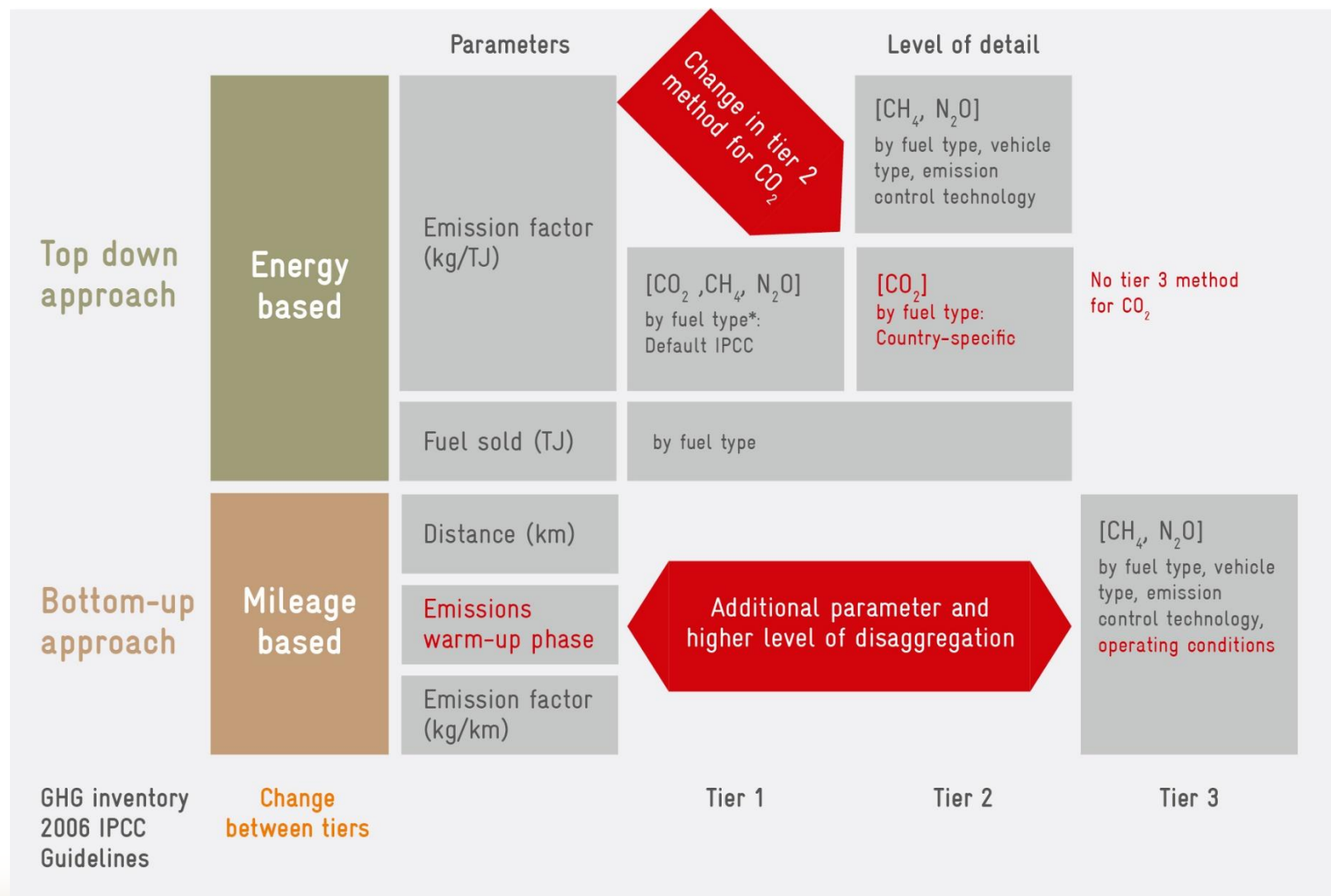
# Terminology: top-down vs. bottom-up



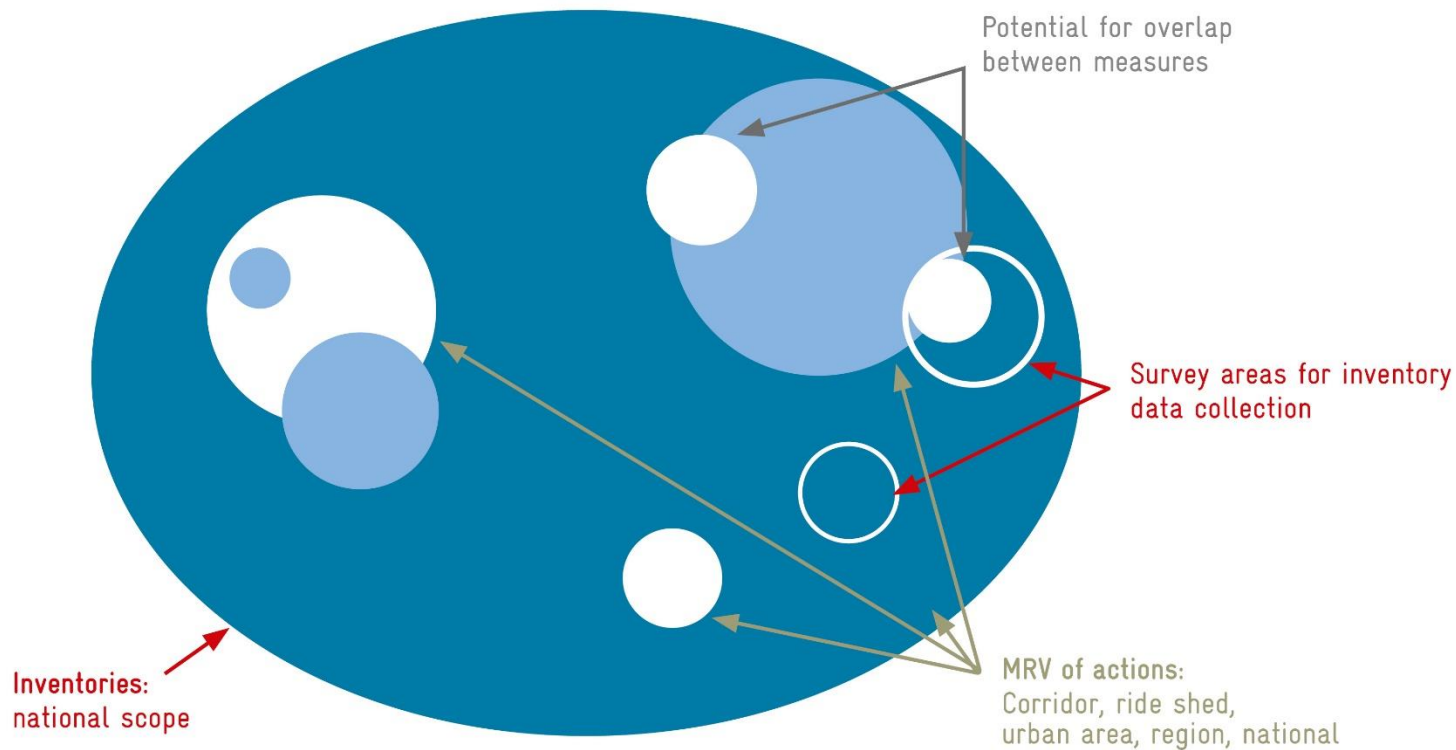
# Transport inventories: Increasing data needs for higher tiers



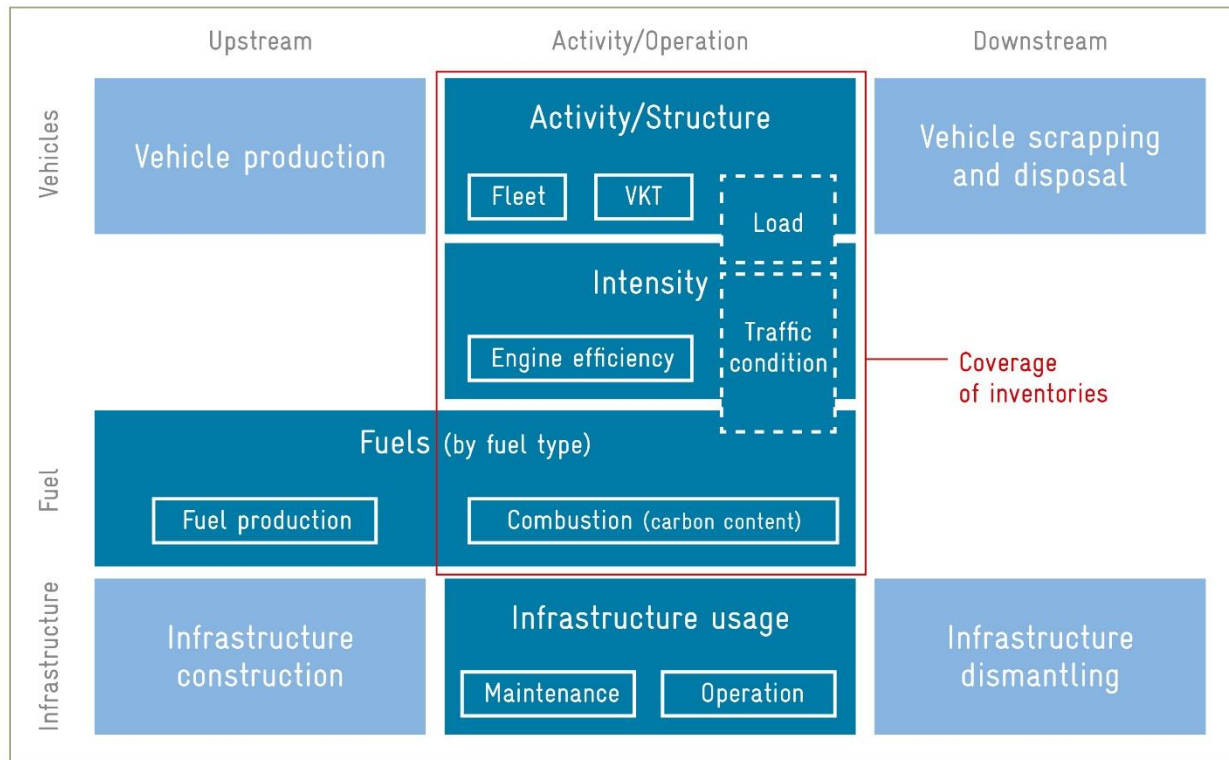
# Transport inventories: Differences in 2006 IPCC Guidelines



# Inventories and MRV: Geographic scope



# Inventories and MRV: Upstream / downstream



Possible focus for MRV, depending on type of measure

= Main impact



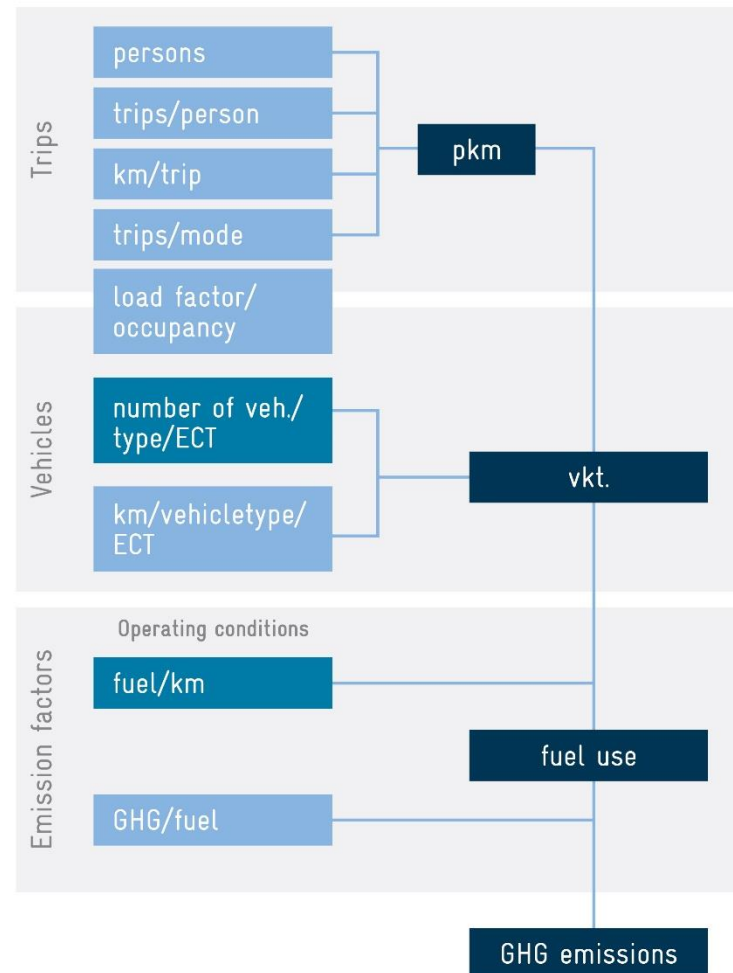
# Example 1: national vehicle-based efficiency standards (fuel or emissions)

Targeted parameters depend on details of the regulation

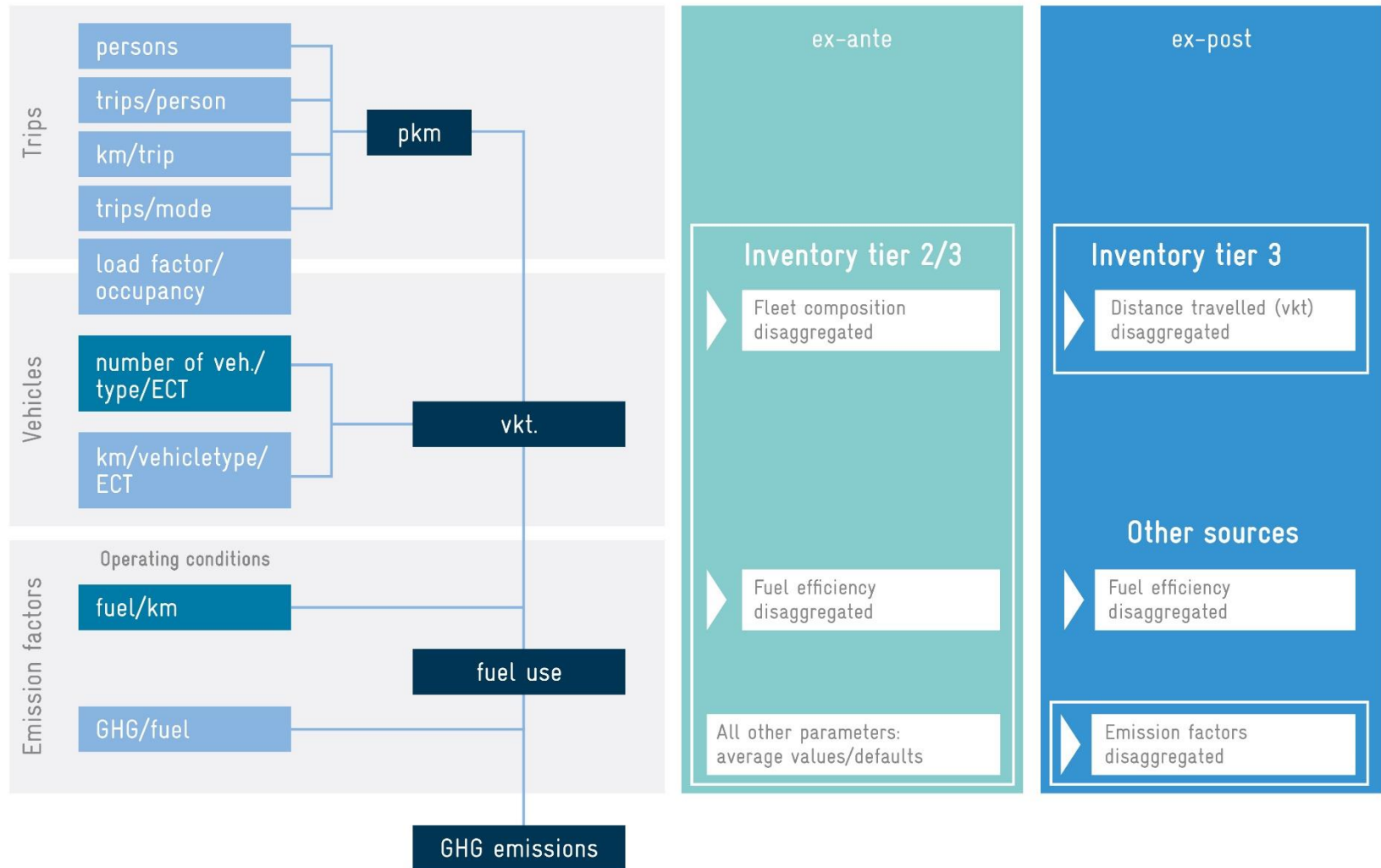
- Applicability to new vehicles or total fleet
- Standards set for fleet or individual vehicle classes

Normally these are

- Fleet composition: distribution between vehicle types
- Fuel efficiency



# Data sources for national vehicle-based efficiency standards (fuel or emissions)



# Limitations

- For sub-national measures the difference in geographic scope will limit usability of inventory data, particularly for ex-post assessment
- For measures including electric forms of transport (e.g. metro, electric cars), the sectoral scope of inventories will require additional data collection to complement inventory data
- The same is the case for measures involving a switch to biofuels
- For ex-post assessment more detailed information than available in the inventory is required in many cases

- Data collected for the MRV of measures can be used to supplement available national level data
- If coordinated between different measures/geographic regions, data collected for the MRV of measures can provide a representative sample that can be used to estimate national values
- Data collected for tier 2 and 3 inventories can often be used as an approximation for estimating effects of measures ex-ante
- To maximize synergies
  - Data definitions and collection methods need to be harmonized
  - Frequency and timing needs to be aligned
  - Data formats and calculation methods used should be consistent
  - Institutional cooperation should be formalized