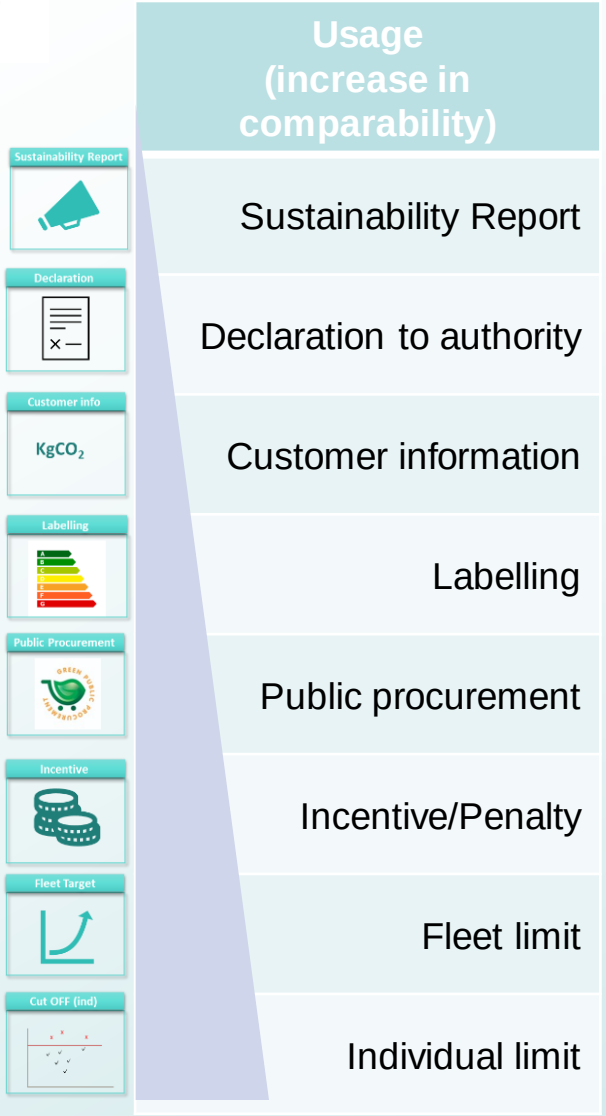
Representative vehicle

Draft version

17-12-2023

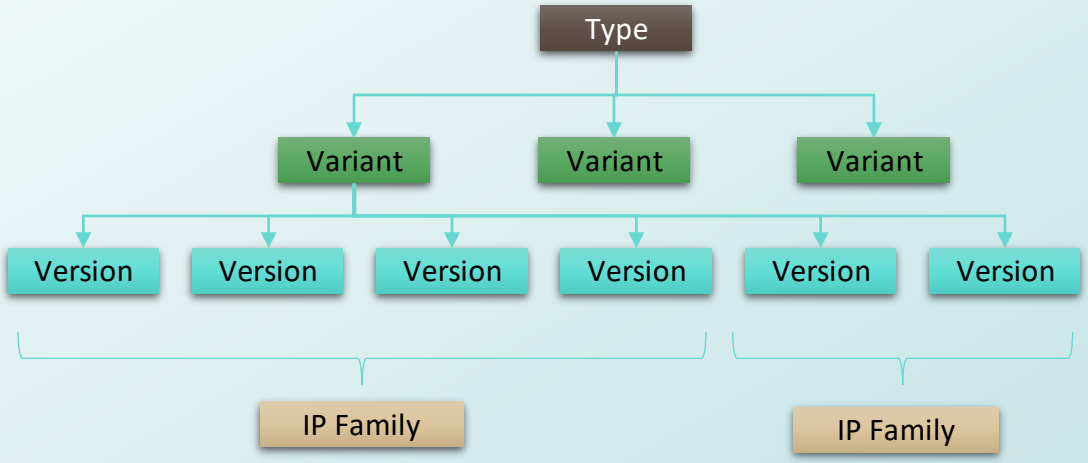
Representative vehicle depends on usage



- To provide LCA carbon footprint of each individual vehicle require high administrative burden
- Usage of ‘LCA carbon footprint for vehicle’ values are not known
- It is reasonable to go for a ‘representative vehicle’ which provide LCA carbon footprint information of a group of vehicles and at the same time accurate enough for the purpose

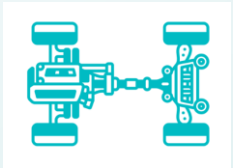
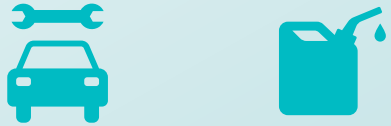
TVV put additional administrative burden

	Parameters (not exhaustive, just for idea)	Comment
Type	Manufacturer's company name	▪ Not linked powertrain
	Design and assembly of essential parts of body structure	
Variant	Number of lateral doors or type of bodywork	▪ Not linked to energy consumption
	Power plant construction (energy supply)	
	Number of axles	
	Number, and interconnection of powered axles	
	Number of steered axles	
	Stage of completion (e.g. complete/incomplete)	
Version	Technically permissible maximum laden mass	▪ Linked to in-use energy consumption but linked to other criteria such as engine capacity, power output , sound level , seating position
	Engine capacity (in case of internal combustion engine)	
	Maximum power output	
	Nature of fuel	
	Maximum number of seating positions	
	Drive-by sound level	
	Exhaust emission level	
	CO_2 emissions	
	Electric energy consumption	
	Fuel consumption	

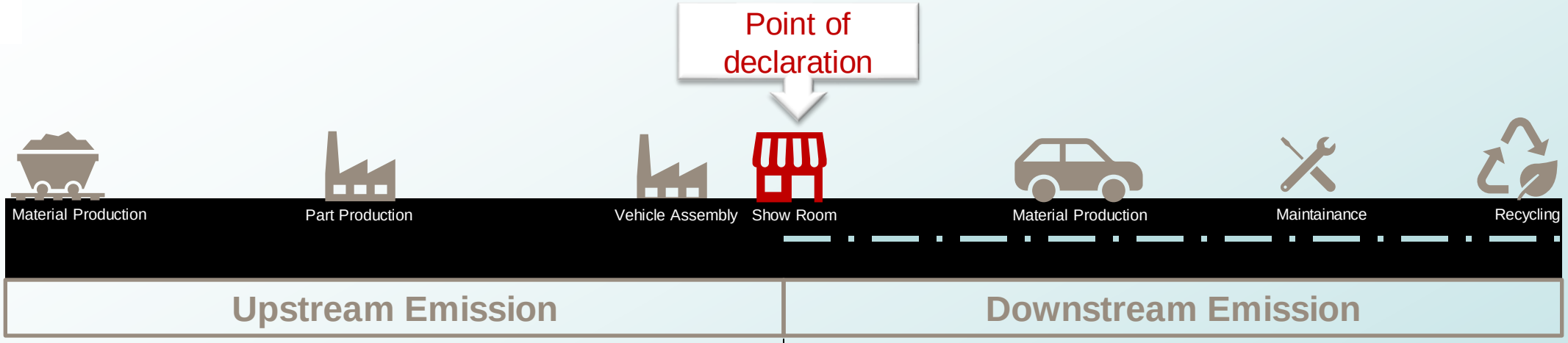


- TVV is not appropriate to define representative vehicle for carbon footprint as it **increases highly the administrative burden**

Major factors that impact LCA value

Material + Production + EoL		Use
 Body +  Powertrain (inc Battery) + Options	+	 Use phase +  Maintenance
Physical components of vehicle		Regular consumptions during usage

Upstream vs Downstream emission



- **Measured** (primary data) or **estimated** (secondary data)
- Carbon Emission during material acquisition, production (and recycling phase) of parts and assembly are already defined **before putting the vehicle into the market**
- Upstream carbon emission depends on **energy mix of country of sourcing**

- **Prediction/projection** only based on some measured values
- Use phase energy consumption depends on aero dynamic, rolling resistance, calibration etc. for a given upstream carbon emission but also individual driving behavior of customer
- Use phase contribution depends on **energy mix of region of usage** and type of usage (one upstream emission value with multiple downstream emission)