

LIFE CYCLE ASSESSMENT

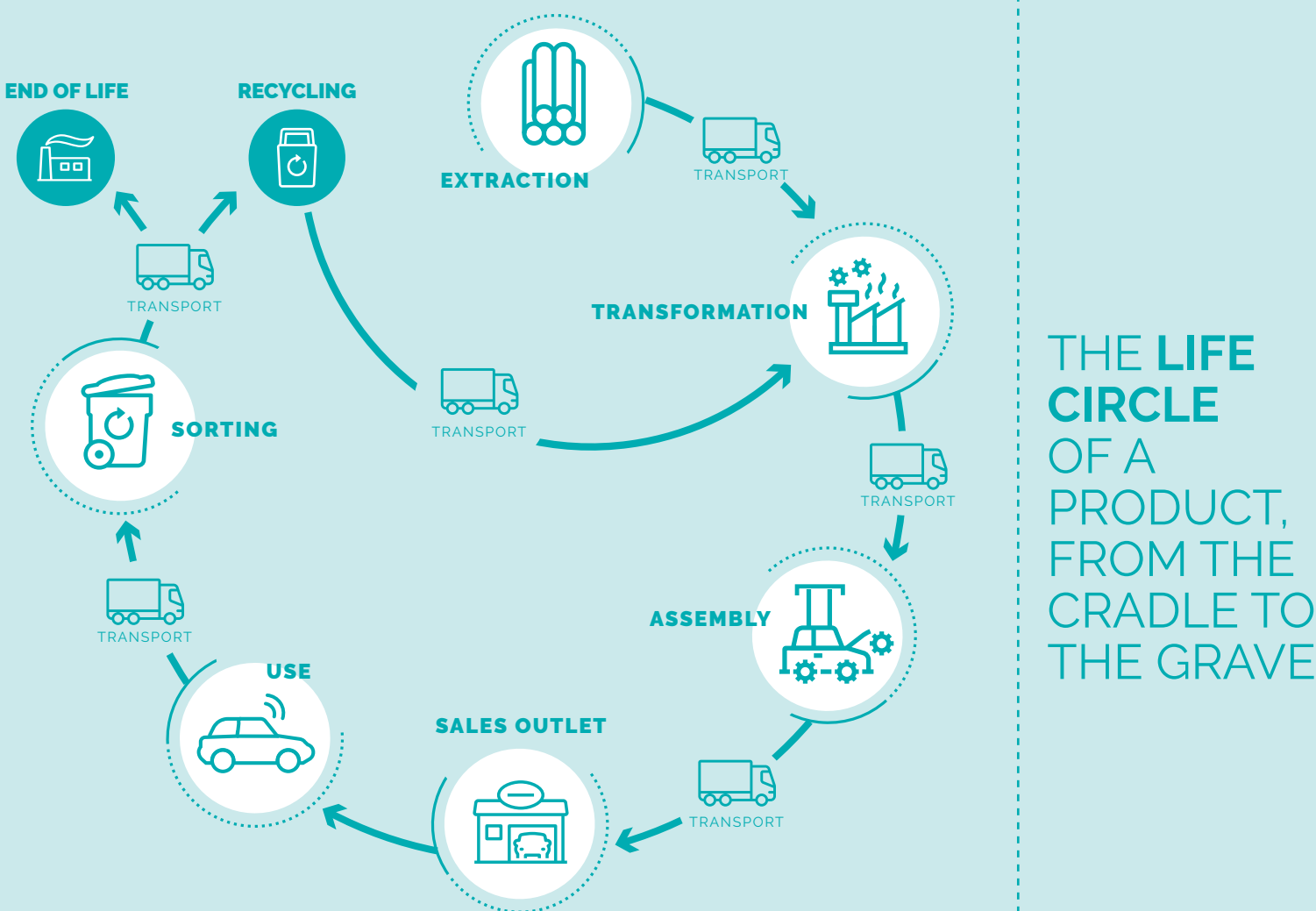


An essential tool for measuring the overall environmental impact of our products



WHAT IS LIFE CYCLE ASSESSMENT?

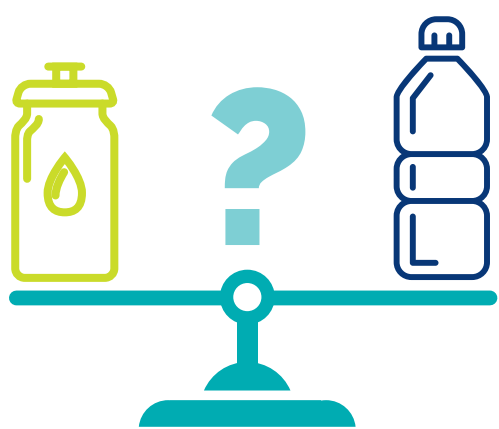
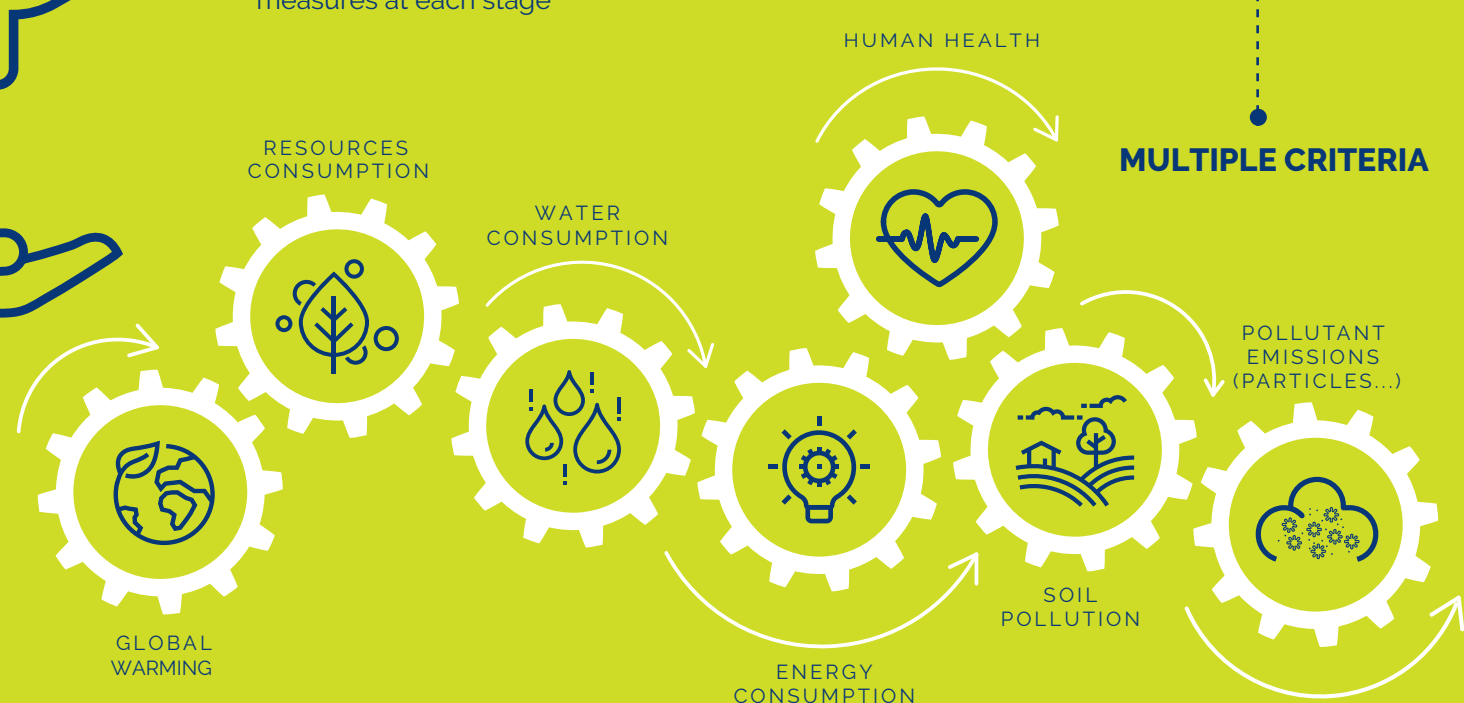
LCA is a methodology used for assessing the potential environmental impacts of a product or a service throughout its life cycle.



THE LIFE CYCLE OF A PRODUCT, FROM THE CRADLE TO THE GRAVE

A METHODOLOGY

MULTIPLE STAGES measures at each stage



AREAS OF APPLICATION

LCA can be applied to any day-to-day object. For example, it can be used to assess whether a reusable flask has more or less impact on the environment than a plastic bottle.

A TOOL TO ASSIST DECISION-MAKING



Helping to improve the environmental performance of an existing product



Helping to design new products in a more environmentally friendly way

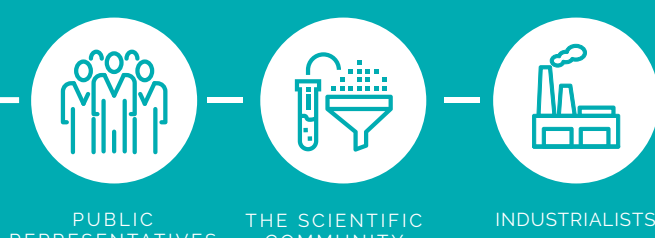


Comparing the environmental impact of several products that have the same function



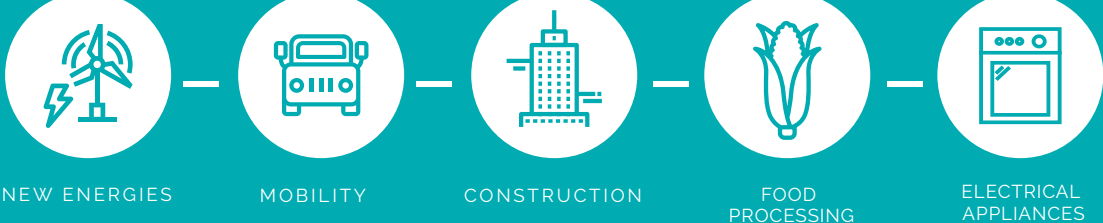
Providing law-makers with data to enable them to draw up environmental regulations

TODAY, EVERYONE NEEDS TO USE LCA...



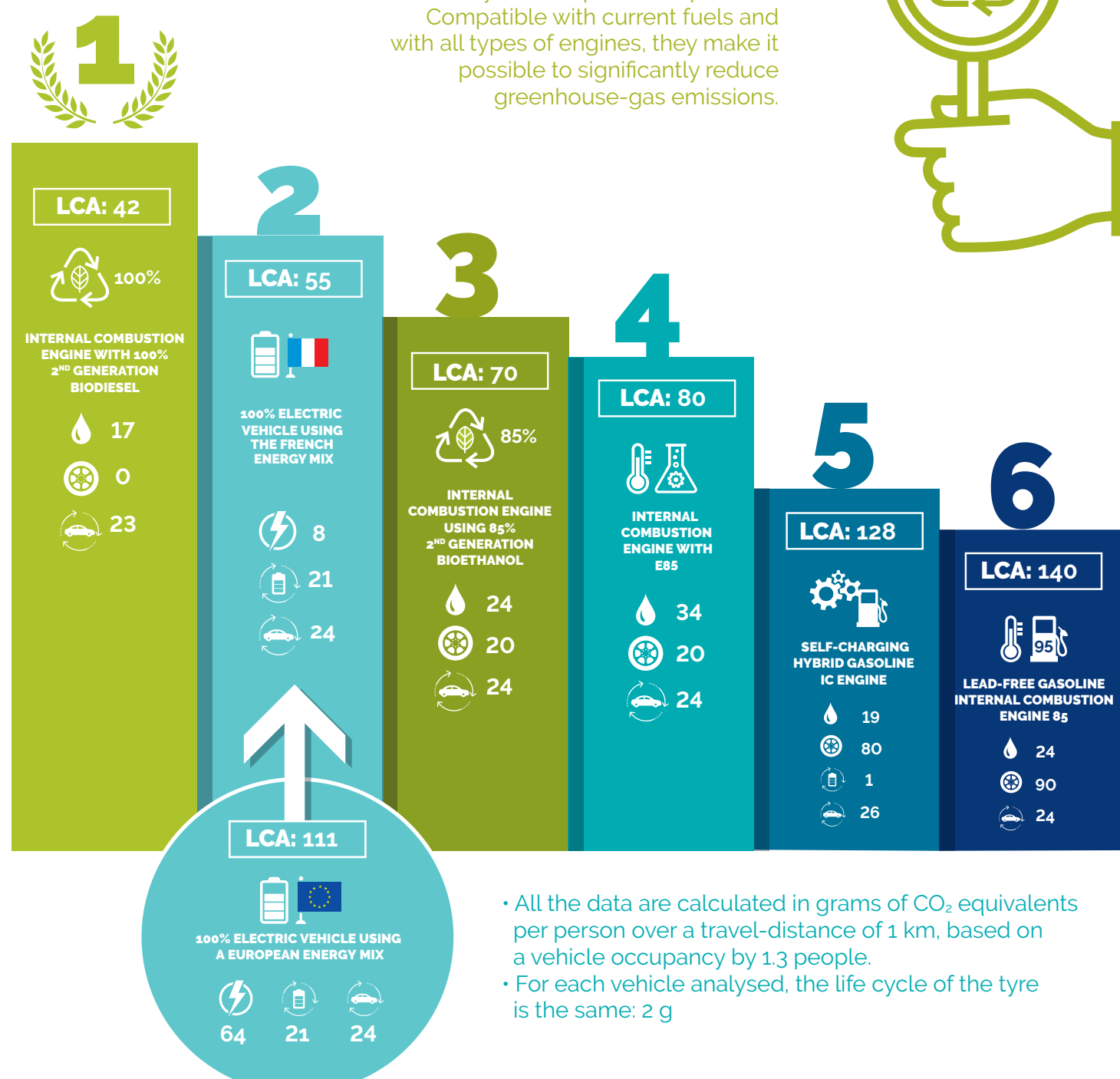
LCA methodology is based on an international standard

...IN A WIDE VARIETY OF SECTORS



AN EXAMPLE OF LIFE CYCLE ASSESSMENT: WHICH VEHICLE EMITS THE LOWEST AMOUNT OF GREENHOUSE GASES?

Second generation biofuels (advanced biofuels) are fuels made from plant matter, which do not compete with food production (agricultural residues, forestry waste, specific crops, etc...). Compatible with current fuels and with all types of engines, they make it possible to significantly reduce greenhouse-gas emissions.



• All the data are calculated in grams of CO₂ equivalents per person over a travel-distance of 1 km, based on a vehicle occupancy by 1.3 people.
• For each vehicle analysed, the life cycle of the tyre is the same: 2 g

LEGEND

From the well to the fuel tank: fuel production stage	From the fuel tank to wheel: fuel combustion stage	Vehicle life cycle	Battery life cycle	Production and use of electricity
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• Vehicle category: C-segment (sedan and MPV).
• Data calculated within the framework of the homologated WLTC procedure to measure fuel consumption, electric range and emissions of CO₂ and pollutants from passenger cars and light duty vehicles.
*Data taken from the IFPEN-AFG-AFGNV study of September 2019 and the European Renewable Energy Directive (RED II)

ABOUT IFPEN:

IFP Energies nouvelles (IFPEN) is a leading player in research, innovation (R&I) and training in the fields of energy, transport and the environment. All the R&I work conducted by IFPEN is developed on the basis of Life Cycle Assessment (LCA) linked to different economic and energy scenarios.