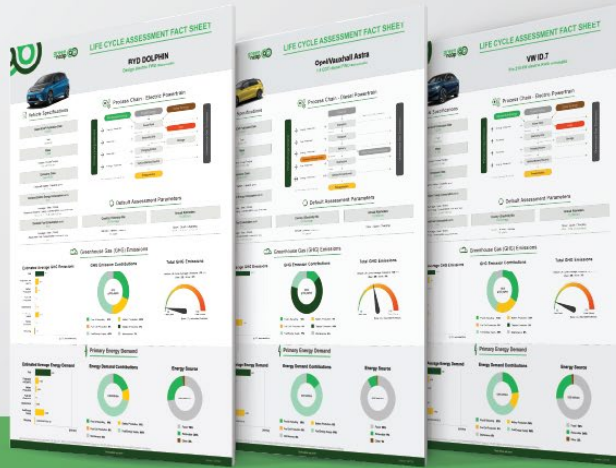


NEW

LCA

Updates



Press Release

1 August 2024 | Leuven

UNDER STRICT EMBARGO until 11 am CET

Green NCAP Reveals Reduction in Life Cycle Carbon Footprint of EVs

Green NCAP has recently implemented an update of its Life Cycle Assessment (LCA) data and **fact sheets**. The update includes increased data coverage of countries, including Norway, and fuel types, such as LPG and E85, as well as more up to date information on battery production, supply of electricity and biofuel mixes. This update reflects the evolving automotive industry and the rapidly changing energy sector. More than ever, Green NCAP's LCA creates a bridge for knowledge between science, industry and consumers.

Through this recent data update, Green NCAP can reveal changes happening in industry. From the evolving raw materials blends for biofuels to the increasing efficiency of battery production, our experts have observed a steady positive change in the sustainable picture of industry. It can be said that the ever-increasing scope of our LCA data is a direct response to the growth and innovation currently taking place in the automotive sector. Green NCAP's new LCA results have revealed the lowered environmental impacts of electric and plug-in hybrid vehicles over their lifetime, compared to conventional combustion engine vehicles. This change can be attributed primarily to the decreasing carbon intensity of battery production and the improving expectations for Europe's future energy mix.

Emissions from battery production, in kg CO₂-equivalent/kWh capacity, have decreased by ca. 16 percent in the new data, driven primarily by economies of scale and sustainability efforts of manufacturers. On average in Europe, electricity emission

projections between today and 2039, in grams CO₂-eq./kWh, are expected to decrease by about 26 percent compared to old data. Increasingly ambitious policy initiatives, such as Fit for 55, are the driving force behind heightened expectations for greener European energy. Overall, these improvements in the industry, now reflected in the data, have resulted in a decrease in emissions of some 20 grams CO₂-eq./km for the average battery electric vehicle representing about 15 percent reduction of their total carbon footprint. This equates to a saving of 4.8 tonnes of CO₂-eq. for each vehicle over its lifetime. Biomass mix of biofuels is also changing. Most notably, FAME fuel (Biodiesel) is expected to contain 13 percentage points more used cooking oil and 16 percentage points less palm oil by 2050, which lowers the lifetime emissions of this fuel.

LCA is a methodology that estimates all the emissions associated with the production and use of a specific product from cradle to grave. There is a broad consensus that this method is essential for producing fair environmental assessments of transportation systems. LCA calculations therefore allow us to compare vehicles in a more neutral and systematic manner. Additionally, Green NCAP's LCA produces results and fact sheets that are especially catered to what consumers are driving today. Green NCAP's updated data better reflects the energy supply and batteries currently on the market and can deliver more realistic results as it uses Green NCAP's actual test consumption measurement data. With this update, Green NCAP's LCA has been praised for its reliability and validity, setting itself apart from other LCAs available on the market.

Ricardo, the global strategic environmental and engineering consultancy, and a leader in vehicle life-cycle assessment, assisted Green NCAP in this update by providing data projections for electricity supply in European countries. These data projections, used in Ricardo's own LCA work, are widely regarded as high quality and transparent, and provided a valuable contribution to the overall LCA data update. Ricardo has also participated in Green NCAP industry expert stakeholder meetings, providing advice and feedback into the ongoing development of Green NCAP's methodology.

Ricardo and Green NCAP have a long collaborative relationship. We appreciate Green NCAP's approach to LCA with a focus on providing authentic data and customer usability. It is important that LCA data evolve to remain relevant and in step with industry, so we strongly support this update. We look forward to seeing its results.

— Nikolas Hill, Ricardo Technical Director, Head of Vehicle Technologies and Fuels, Sustainable Transport Team

We are looking into the future, and nobody knows how electricity will be generated in 5 or 10 years. So, we need a kind of scenario for all the European countries with the same assumptions. That was one of the key reasons we took the data from Ricardo. They have a very consistent scenario for each of the 27 European countries based on technical feasibility and political expectations. Their numbers are extrapolated under two existing scenarios: Baseline (REF2020) and

Tech1.5 (further updated based on the MIX scenario from Fit-for-55 package).

What is crucial is to be as transparent as possible, by showing the tables and data we use. This has, from the very beginning, been a guiding principle in this project. LCA can bridge knowledge from science to the broader public. Car manufacturers are increasingly publishing their very own LCAs, given they understand their vehicles and supply chains the best. But they still lack transparency in the data and methods used, making comparability between vehicles impossible. This is what Green NCAP's LCA offers.

— Dr. Gerfried Jungmeier, JOANNEUM RESEARCH leading scientist on the LCA tool project for Green NCAP

The LCA of vehicles has been an essential part of the information Green NCAP offers. However, continual data updates are necessary to stay aligned with industry developments and changing energy supply trajectories. Green NCAP's LCA, we believe, provides improved standardization, more realistic and relevant results, consumer-operability, and good comparison abilities.

— Dr. Aleksandar Damyanov, Green NCAP Technical Manager

[To the 2024 fact sheets](#)

Editor's notes

In summary for consumers, results from Green NCAP's LCA provide:

1. Improved standardization:
 - Centralized LCA calculations and data storage allow for better standardization of assumptions, vehicle input data, background data, foreground data, and LCA results.
 - High transparency of methodology and data used.
2. More realistic and relevant results:
 - Providing state-of-the-art LCA calculations for vehicles and fuels that are on the market.
 - Use of real data from Green NCAP's fuel/energy consumption measurements. Taking the technical specifications of the tested cars as basis for our calculations.
3. Simplified, consumer-friendly fact sheets:
 - Easy to understand LCA fact sheets that provide a snapshot overview of the lifetime emissions and energy demand of Green NCAP tested vehicles.
4. Customization and comparison abilities in the LCA Consumer Tool:
 - The Consumer Tool offers a vast number of vehicles for selection and comparison of up to three cars simultaneously.

- As the expected annual mileage has a significant impact on the total life cycle results, consumers can adapt this input to better fit their usage case.

The Green NCAP LCA analysis is based on publicly available scientifically accepted information about vehicle production or recycling processes and does not consider specific data of single vehicle manufacturers or models. Some manufacturers may calculate results differently from the values estimated here using in-house data.

For full results, visit www.greenncap.com.

For media information, please contact media@greenncap.com.

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About Green NCAP

Green NCAP is an independent initiative which promotes the development of cars which are clean, energy efficient and cause as little harm to the environment as possible.

Green NCAP uses a broad range of tests to address the flaws in approval tests and, through consumer information, rewards those manufacturers whose vehicles go beyond the minimum requirements and offer excellent, robust, real-world performance.

We believe that consumers need to be adequately informed about the energy consumption and related greenhouse gas emissions of the vehicle of their choice.