



# Green NCAP

## The Independent Sustainability Assessment Programme

### 2025 Updates - LCA and consumer aspects

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3<sup>th</sup> September 2025  
Cenex-LCV UTAC Millbrook, Bedford, UK  
Day 1 – Hall 3 Electrification Zone  
**Sustainable, Resilient and Traceable Products and Supply Chains**

# Agenda

Who we are

Test Schedule

Life Cycle Assessment

2025 Rating System

Driving Experience



# Who We Are

# Our Objectives

The **Green New Car Assessment Programme** informs consumers about the environmental impact of today's vehicles by:

- Providing comprehensive, simple, objective rating information
- Making available detailed and transparent test results and analysis
- Acting as a voice for Green industry and consumers

**Thus, Green NCAP:**

- Supports decision making when buying a car
- Stimulates greener cars to enter the market
- Creates a competitive market for more sustainable products
- Highlights important innovations by industry
- Provides evidence for decision makers
- In the long term helps reduce pollutants and greenhouse gas emissions for a healthy planet



# Our Members



# Our Approach

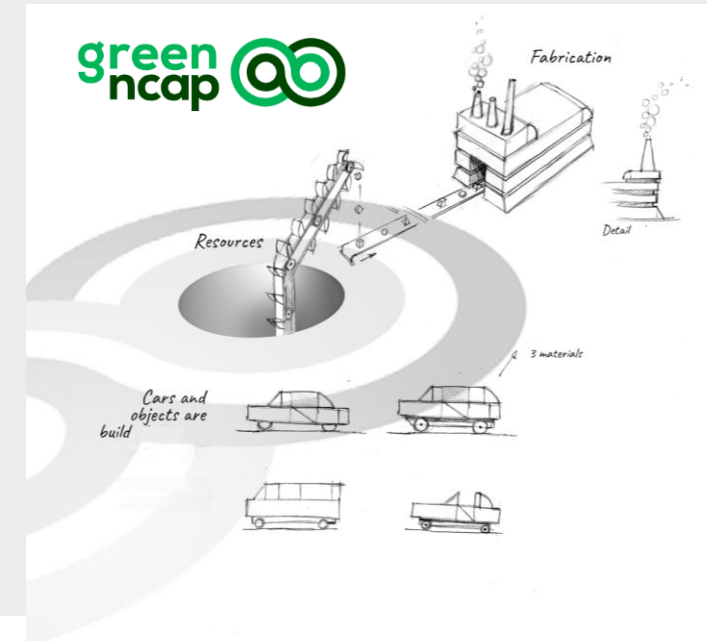
Provide a **test-based** assessment of a vehicle's environmental performance for passenger cars

Develop an understandable vehicle **rating system** for the evaluation of test results that includes three indices:

- Clean Air Index
- Energy Efficiency Index
- Greenhouse Gas Index



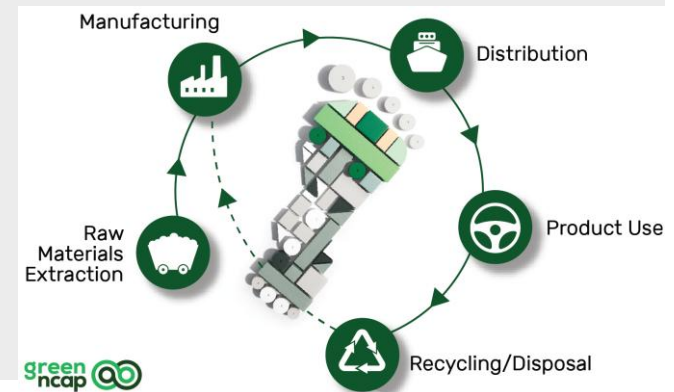
All three indices are now based on **Life Cycle Assessment (LCA)** of vehicles Greenhouse Gas emissions and Primary Energy Demand throughout their product life



# Reasons for Update

Strategic change in Green NCAP assessment to align with state-of-the-art methods and highlight innovations from Industry. **Targets of the new 2025 assessment are:**

- Incorporate **consumer relevant aspects key to a purchasing decision** and **usability** of a vehicle: cabin comfort, fuel/energy consumption and driving range in different driving operations, cold ambient performance and charging capabilities.
- Facilitate a transition to a **more EV focused** programme, but continue to address **all powertrain types**
- Allow **fair differentiation of sustainability performance** of cars within all powertrain types
- **Reduce the assessment gap between ICE and BEV**, by not only assessing the use-phase but the full **Life Cycle**.
- **Increase rating resolution of PEVs**
- Increase **visibility** and website **communication**



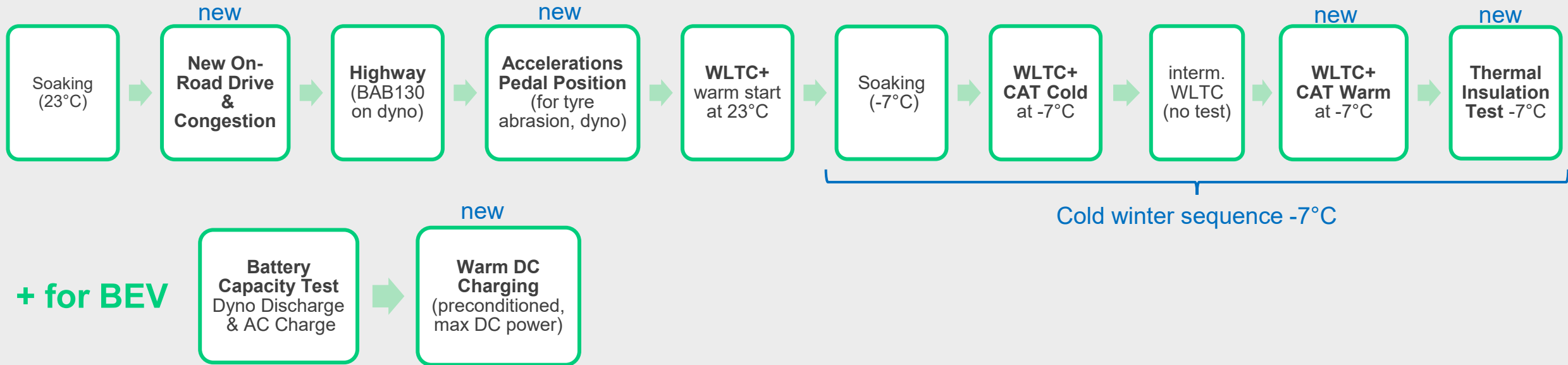
# Test Schedule



# 2025 ICE/HEV/BEV Test Schedule Revision

## New test schedule

- Spans a **range of very good to very disadvantageous** cases and make consumers be able to locate theirs
- Addresses better **winter behaviour** of all powertrains, assesses different cold trip scenarios
- Includes proxy assessments of **tyre and brake abrasion**
- Introduce **PN10** measurement for ICE



# LCA

“

There is international consensus that the environmental effects of transportation systems can only be truly analyzed and compared based on **Life Cycle Assessment** that includes the production, operation and the end-of-life treatment of the various facilities.

”

*Joanneum Research*



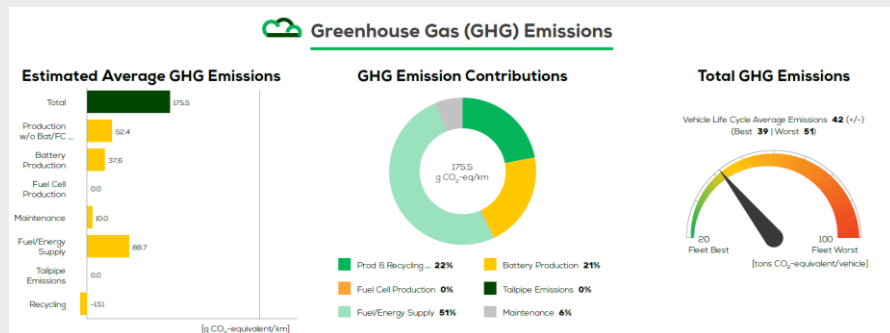
# LCA Methodology and Data

The **4<sup>th</sup> edition** of the **Methodology and Data** paper will be released soon

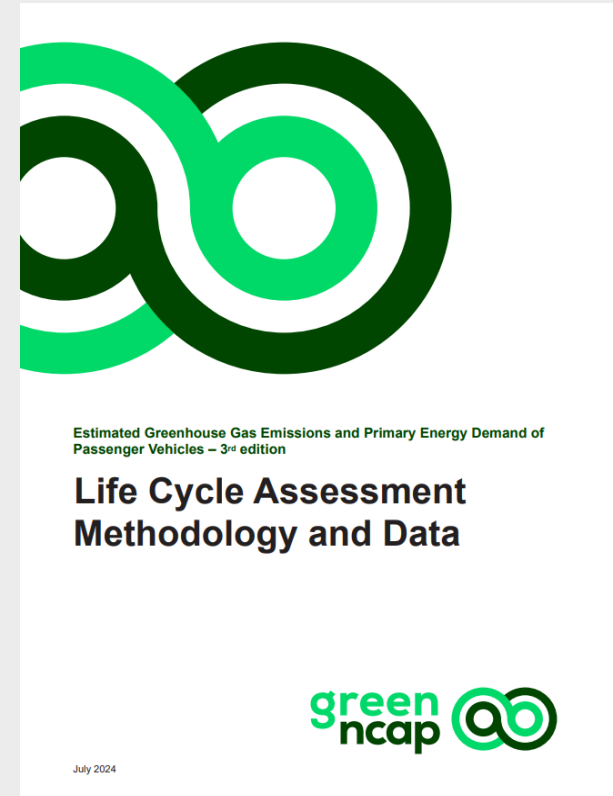
- Additional data necessary to calculate pollutant emissions: NO<sub>x</sub>, NH<sub>3</sub>, CO, NMVOC, SO<sub>x</sub>, PM<sub>2.5</sub>
- Emission factors for fuel/energy supply with forecasts by Ricardo
- Pollutant LCA complements the Clean Air assessment index

## Interactive LCA Consumer Tool

- Online LCA platform, different countries, huge number of vehicles
- Allows maximum customization for individual car users



Ricardo  
Energy & Environment



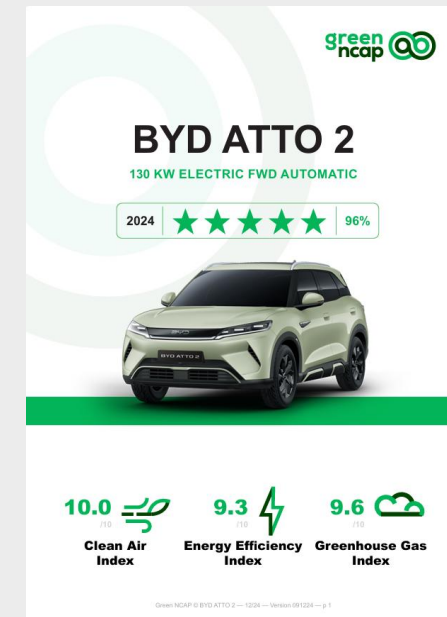
# From Generic to Specific Vehicle LCA

**Manufacturers can submit own LCA relevant data to replace generic assumptions or demonstrate transparency**

- Sustainability reports
- Own PCF / LCA analyses
- Green NCAP data collection template can be fully or partially filled
- Evidence for used materials / energy / processes in production

**The data will be reviewed, and evidence will be requested**

**Sensitive data is handled confidentially (NDA)**



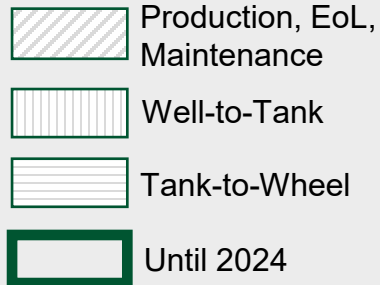
# 2025 Rating System

# 2025 LCA Based Rating System

## Expansion of the LCA approach to all three rating indexes

- Fully LCA based assessment, including all phases to allow fair comparability of true environmental impact
- Allows allocation responsibilities for improvement to manufacturer/energy supplier/consumer
- Better comparability between all tested vehicles and increase of assessment resolution
- **Possibility to replace generic LCA assumptions by data provided by manufacturers after verification**

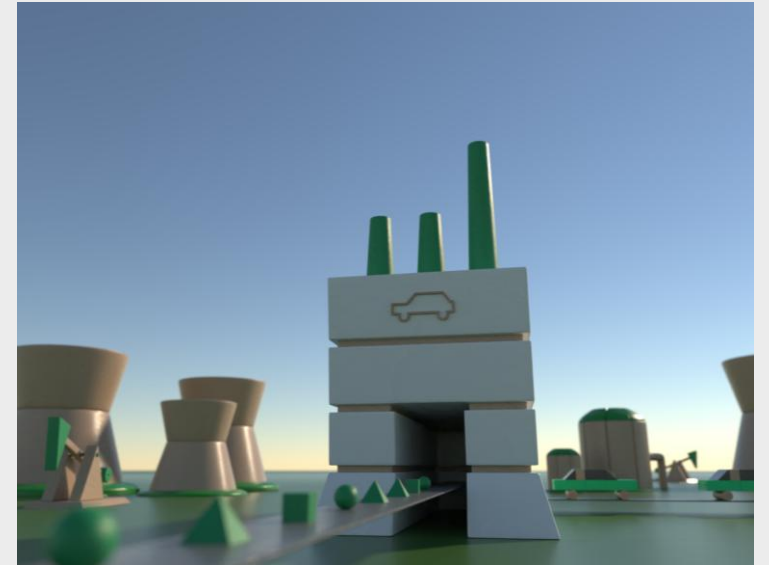
### Legend



\* Index proportions are illustrative



Index weighing is 1/3.

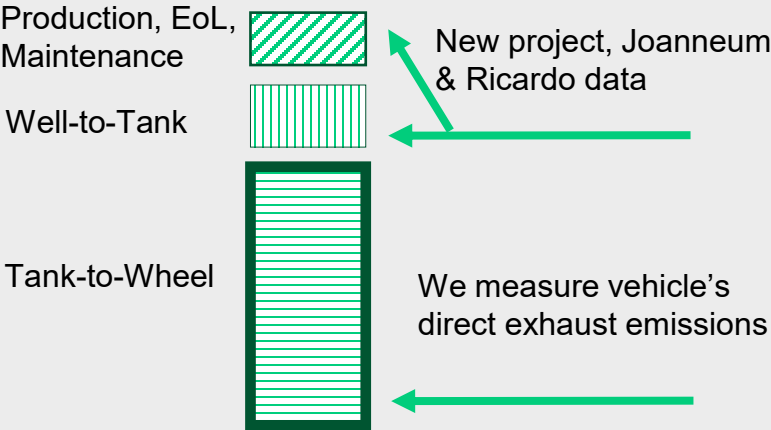


# 2025 LCA Based Rating System

## Clean Air Index

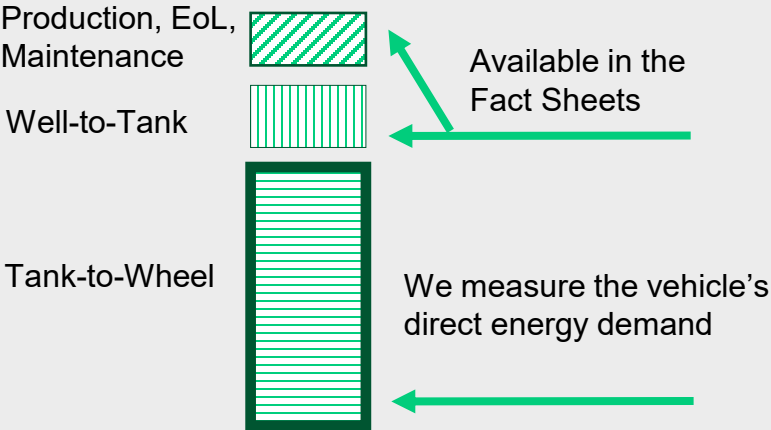
- Exhaust pollutants are combined with the other LCA phases pollutants and abrasion proxys

CA Sub-Index	Weight
Exhaust (Tank-to-Wheel LCA)	60%
Non-tailpipe (tyre & brake abrasion)	20%
Other LCA phases	20%



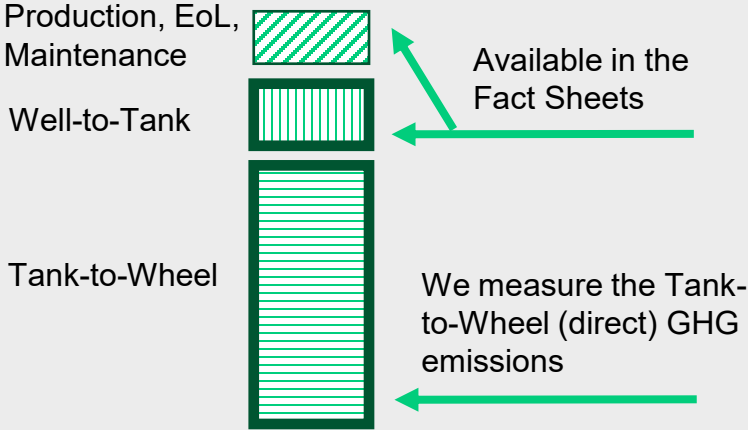
## Energy Efficiency Index

- Each Wh that a car needs in its life cycle leaves one less Wh for other purposes
- GNT decided to include an assessment of vehicle rolling resistance (95% energy demand score / 5% rolling resistance score)



## Greenhouse gases Index

- Each gram CO2-eq. going to the atmosphere impacts the climate the same way
- A generic data regionally dependent production correction factor is included (EU +20%, USA +40%, Asia +50%, India +60%)



# 2025 Rating System

Bunch of 2025 vehicles publication	CA	EE	GHG	AVG	Stars
Very large PEV SUV, 100 kWh, 2.7 t	7.5	4	5.4	5.6	★★★★★
Small, clean, efficient petrol	7.7	6.1	4	5.9	★★★★★
Large luxury PEV sedan, 105 kWh, 2.5 t	7.8	5.8	7.6	7.0	★★★★★
Urban PEV SUV, low efficiency	9.2	8.1	9.8	9.1	★★★★★
Urban PEV SUV, high efficiency	9.6	9.5	10	9.6	★★★★★

Stars	Threshold
★★★★★	9.0
★★★★★	8.0
★★★★★	7.0
★★★★★	6.0
★★★★★	5.0
★★★★★	4.0
★★★★★	3.0
★★★★★	2.0
★★★★★	1.0
★★★★★	0.0

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About Green NCAP

Ratings

Tests Explained

LCA Information

Press & Media

For Engineers

Press Releases

Date	Comment
18 September 2025	Results
30 October 2025	Results
27 November 2025	Results

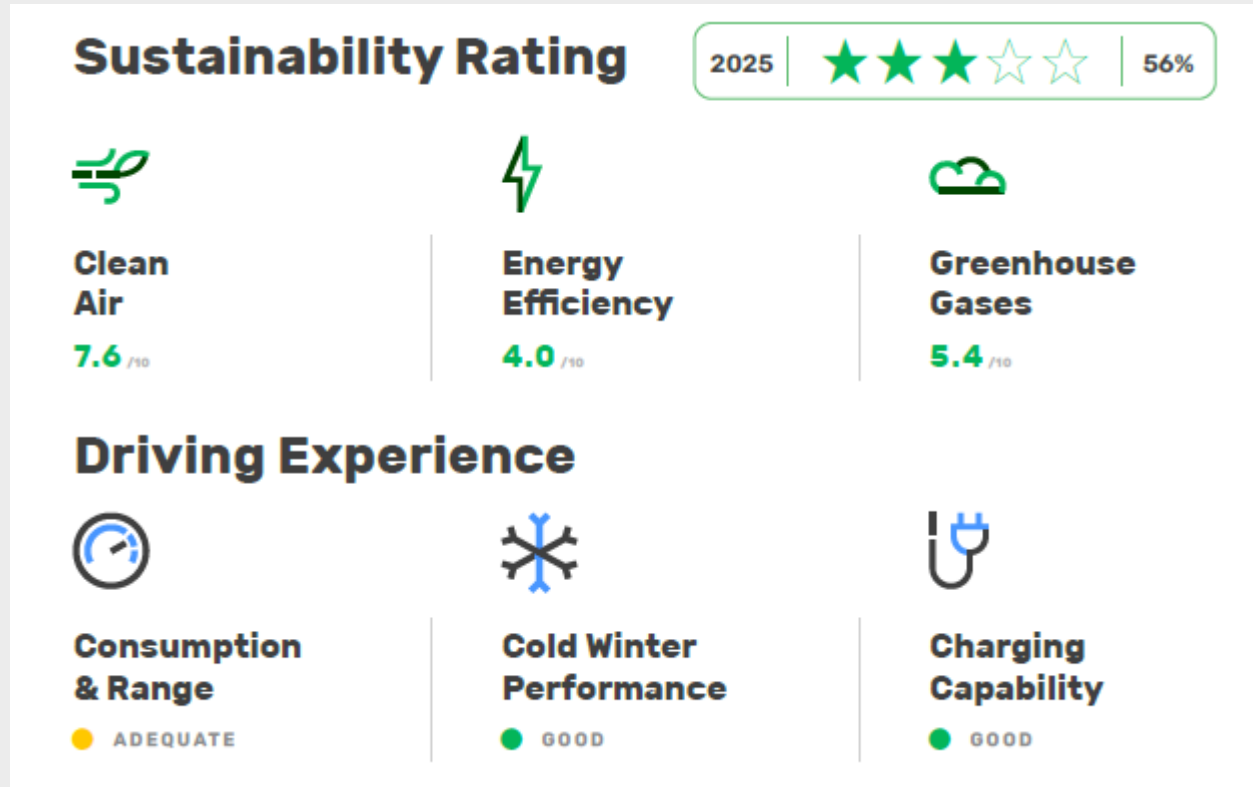





# Driving Experience

# Driving Experience System

An assessment of parameters with high importance for consumers will be done in a separate ranking system, not interfering with the environmental rating. Ranking as **Poor/Adequate/Good**

These parameters are:



- 
  - Estimated actual consumption Warm weather & Cold Winter (Urban, Rural, Highway, Mixed)
  - Driving range Warm weather & Cold Winter (Urban, Rural, Highway, Mixed)
  - Accuracy of consumption display
- 
  - Driving range benefit of pre-warming
  - Cabin heating and additional heating functions
  - Cabin thermal insulation
- 
  - Fast charging performance
  - Pre-charge battery conditioning
  - Home Charging Efficiency
  - Bidirectional Charging (V2L, V2H, V2G)

# Consumption & Range

Very large PEV SUV, 100 kWh, 2.7 t

## Estimated actual consumption POOR

In-laboratory measured consumption values are only partially representative of real-world use. Green NCAP's estimates aim at providing more realistic figures, which are based on measured results, modified by correction factors.

Conditions	Urban	Rural	Highway	Mixed	
Warm weather	23.3	24.7	28.4	25.0	kWh/100 km
Cold Winter	41.8	32.6	38.2	37.7	kWh/100 km

## Driving range ADEQUATE

Of special importance to consumers is the real-world driving range. Green NCAP estimates it based on measured data, modified by correction factors.

Conditions	Urban	Rural	Highway	Mixed	
Warm weather	469	442	384	436	km
Cold Winter	261	335	285	289	km

Urban PEV SUV, high efficiency

## Estimated actual consumption GOOD

In-laboratory measured consumption values are only partially representative of real-world use. Green NCAP's estimates aim at providing more realistic figures, which are based on measured results, modified by correction factors.

Conditions	Urban	Rural	Highway	Mixed	
Warm weather	14.7	15.7	19.5	16.4	kWh/100 km
Cold Winter	28.5	20.1	25.3	24.8	kWh/100 km

## Driving range ADEQUATE

Of special importance to consumers is the real-world driving range. Green NCAP estimates it based on measured data, modified by correction factors.

Conditions	Urban	Rural	Highway	Mixed	
Warm weather	380	355	287	340	km
Cold Winter	195	277	220	225	km

# Cold Winter Performance

Large luxury PEV sedan, 105 kWh, 2.5 t

**Cabin heating**

Time needed to reach 16°C in seconds.

GOOD

	Front	Rear
Head area	248	356
Footwell	160	

Urban PEV SUV, high efficiency (Veh 1)

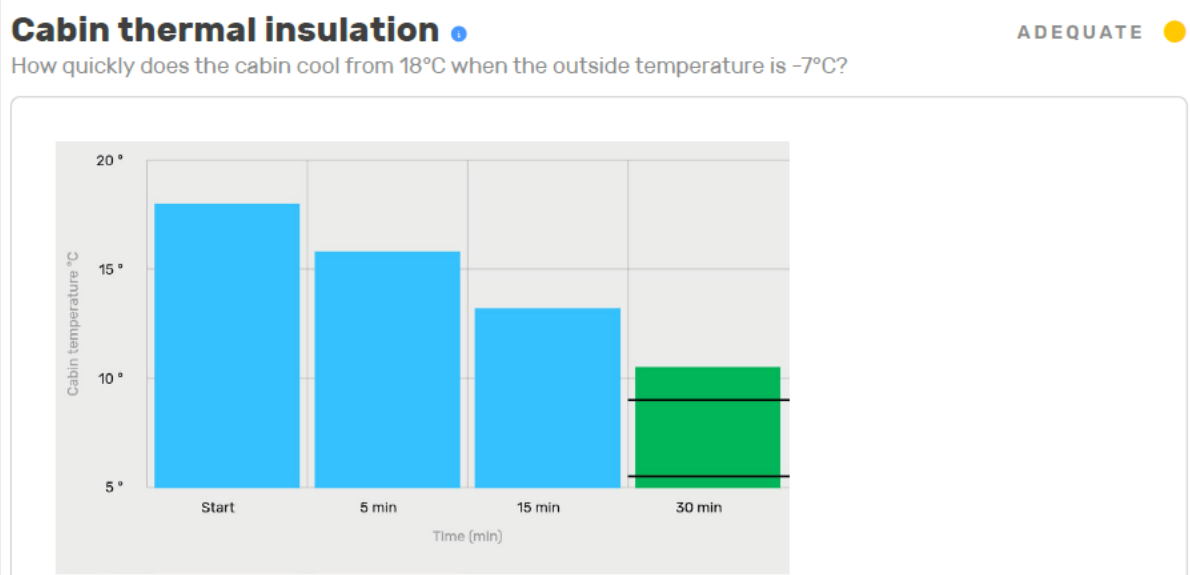
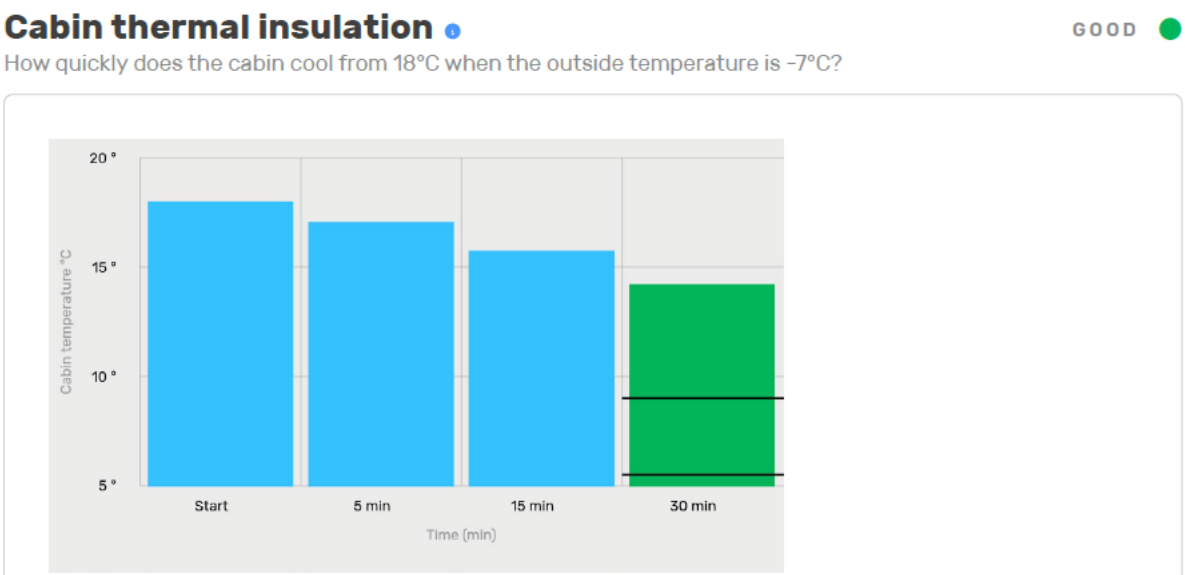
**Cabin heating**

Time needed to reach 16°C in seconds.

ADEQUATE

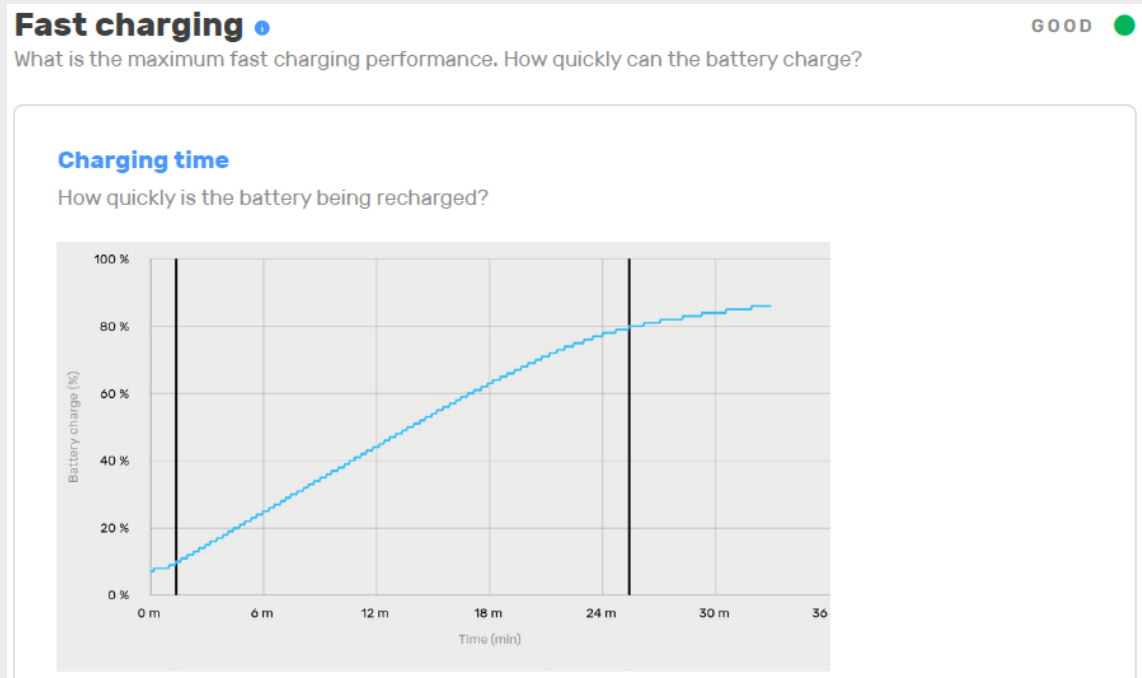
	Front	Rear
Head area	398	740
Footwell	86	

Urban PEV SUV, high efficiency (Veh 2)

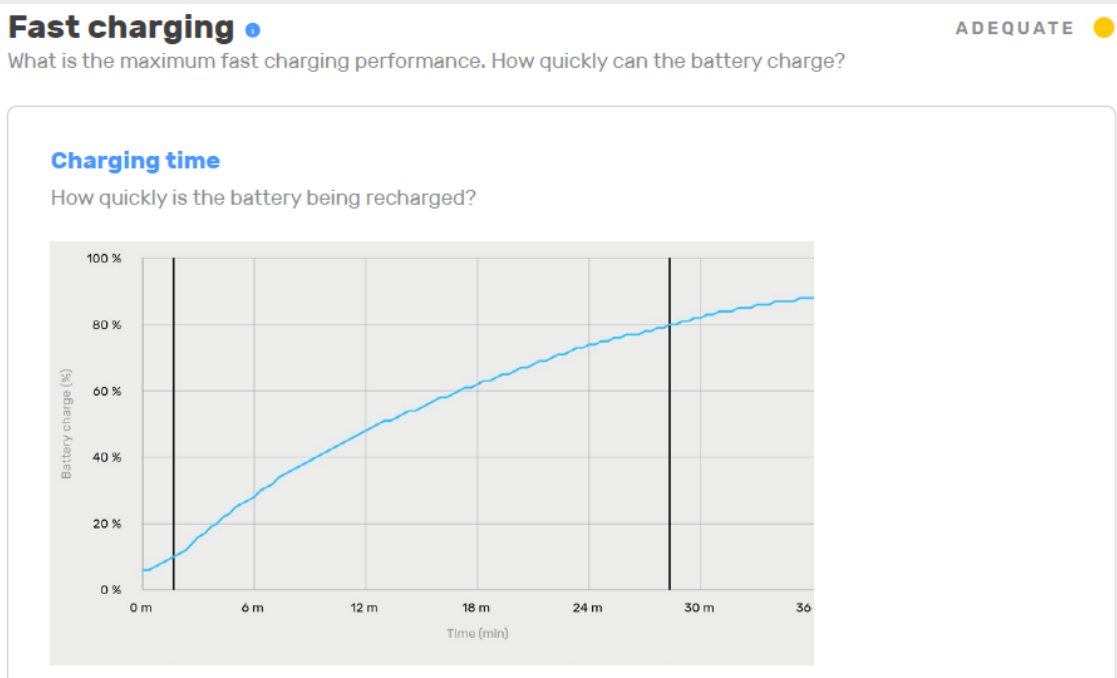


# Fast charging

Very large PEV SUV, 100 kWh, 2.7 t



Urban PEV SUV, high efficiency



# Join us on our Mission

Market and regulatory environment are developing fast.

Green NCAP is **constantly improving** its procedures and rating to maintain accurate and relevant.

Consumers today increasingly want to contribute to a cleaner planet but need **guidance**.

Green NCAP has been taking **technology neutral approach** and wants to support the transition, not by introducing new barriers but **highlighting innovation** and providing **objective, transparent information**.

Green NCAP has prepared **thoroughly improved 2025 programme**, including LCA based assessment, new test matrix and increased focus on consumer relevant vehicle properties.

The Green NCAP consortium **welcomes international cooperation**.

**Your engagement can help us accelerate the programme, improve information quality and capitalise sustainability effort.**

**Join us on our mission!**

## CONTACT US

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