Kia EV9

GT-LINE ELECTRIC AWD AUTOMATIC

Sustainability Rating

2025 | ★★★☆☆ | 56%

Clean Air
7.6 /10

Energy Efficiency
4.0 /10

Greenhouse Gases
5.4 /10

Driving Experience

Consumption & Range
ADEQUATE

Cold Winter Performance
GOOD

Charging Capability
GOOD

Our verdict

The EV9 is a large electric SUV with an empty mass of 2.7 tonnes and a 100 kWh battery. Correspondingly, these figures greatly impact the vehicles' life cycle emissions and energy demand. The huge cabin volume, high auxiliary energy demand and the SUV body take additional toll on the car's consumption figures. Being the biggest EV that Green NCAP has ever tested, with 56% percent average score this giant can only collect 3 stars.

- The EV9 has no exhaust emissions but suffers from high tyre and increased brake abrasion, mainly due to its weight. The pollutant emissions of the production processes and those related to the supply of the electric energy are also significant.
- Its life cycle energy demand is high, due to increased energy required for production and considerable consumption values in use, especially at motorway speeds and in cold weather.
- Greenhouse gas emissions over the vehicle's life cycle are ~200 g CO_2-eq./km, driven by production and electricity supply emissions.

Disclaimer

Think before you print

Clean Air

7.6 /10

Comments

Due to the fully electric powertrain, the EV9 doesn't have any exhaust emissions. The car has an aggressive accelerator pedal characteristic, which is likely to increase tyre abrasion. The huge weight also negatively impacts the emissions from the tyres. The score for brake abrasion is mediocre, as the car has a relatively high use of the friction brakes compared to other EVs. For a vehicle of this size and consumption, the pollutant emissions of the production processes and those of the supply of the electric energy also gain significance in the assessment.

Exhaust emissions

Exhaust pollutant emissions are produced from combustion engines. Although current emission legislation is very strict, this type of emission directly affects air quality, and not all vehicles perform equally well. Read more

GOOD 10.0 /10

In laboratory

Green NCAP performs a wide range of tests on cars in the laboratory. This is the best way to ensure controlled conditions and guarantee that all cars are tested in the same way, making their results comparable. Read more

GOOD 10.0 /10

	NMHC	NO_x	NH_3	CO	PN	PM	Score
Legal test (WLTP)	●	●	●	●	●	●	8.0 /8
Warm weather	●	●	●	●	●	●	10.0 /10
Highway	●	●	●	●	●	●	10.0 /10
Winter cold start	●	●	●	●	●	●	10.0 /10
Winter warm start	●	●	●	●	●	●	10.0 /10

On road

An on-road driving test , using portable emissions measuring equipment complements Green NCAP's laboratory tests. Read more

GOOD 10.0 /10

	NMHC	NO_x	NH_3	CO	PN	PM	Score
Real-world mixed drive	●	●	●	●	●	●	10.0 /10
Short city trip	●	●	●	●	●	●	10.0 /10
Congestion	●	●	●	●	●	●	2.0 /2

● good ● adequate ● marginal ● weak ● poor ● not applicable

Clean Air

7.6 /10

Non-exhaust emissions

Driving a vehicle also produces emissions different from those of the exhaust pipe. Green NCAP evaluates vehicle properties that contribute to tyre and brake abrasion.

MARGINAL

4.0 /10

Tyre wear

Tyre abrasion releases small particles during driving, and some vehicle properties have major impact on it. Heavier vehicles, wheel alignment causing increased slip angle, and aggressive acceleration responses all increase tyre wear and particle emissions. Read more

WEAK

1.0 /6

	Result	Score
Influence of mass		0.0 /3
Wheel alignment		1.0 /1
Accelerator response		0.0 /2

Brake wear

Brake dust, produced by friction brakes, can be mitigated through filters, enclosed brake systems (like drums), or by reducing friction brake use with regenerative braking in electrified vehicles. Containment keeps dust inside the system, while recuperation lowers brake wear. However, heavier vehicles still generate more brake abrasion due to their greater stopping demands. Read more

ADEQUATE

3.9 /6

	Result	Score
Brake dust mitigation		0.0 /4
Brake dust containment		0.0 /6
Recuperative braking - warm test		3.9 /6

good adequate marginal weak poor not applicable

Clean Air

7.6 /10

Additional Life Cycle Assessment information

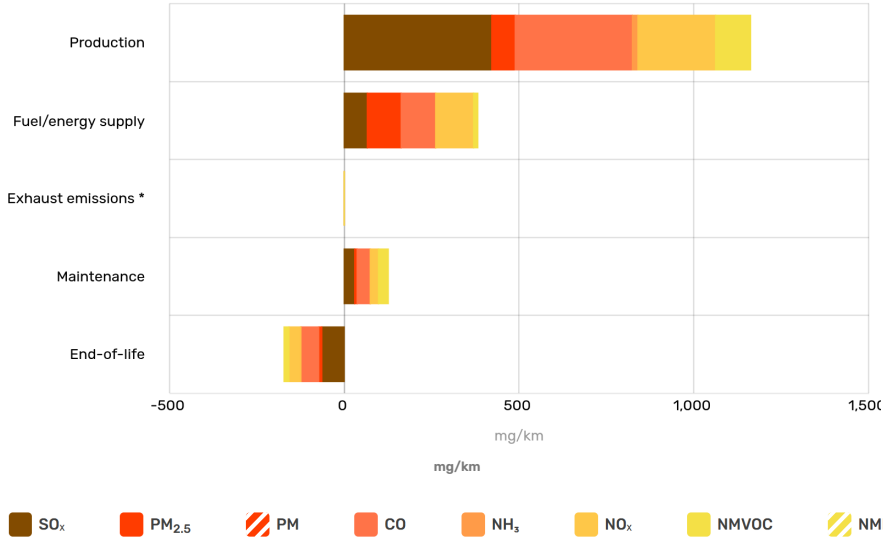
Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime, 'from cradle to grave'. In this section, pollutants are estimated in the various stages of a vehicle's life other than use. The chart also displays the measured emissions related to usage, which are taken as an average from the tests and are scored separately in the 'Exhaust emissions' part above. The end-of-life approach uses results in negative values because the benefit of materials recovery and recycling exceeds the effort of obtaining and processing virgin raw materials.

MARGINAL

3.8 /10

Pollutants

Most of the vehicle exhaust pollutant species are also emitted in others life cycle phases. These are health- and nature-damaging compounds, the amount of which should be reduced as well.



* Exhaust emissions are not contributing to the score in Additional Life Cycle Assessment information because they are scored in the Exhaust emissions section above

good adequate marginal weak poor not applicable

Energy Efficiency

4.0 /10

Comments

Energy efficiency is the poorest discipline of the big Kia. The non-usage life cycle phases require significant amount of energy and together with the high propulsion energy demand, they limit the achievement in this part of the assessment. A lot of energy is required to move this mass, especially at high speeds, but also to quickly provide the high thermal comfort in the cabin in winter conditions. However, the driving ranges are acceptable, thanks to the large battery.

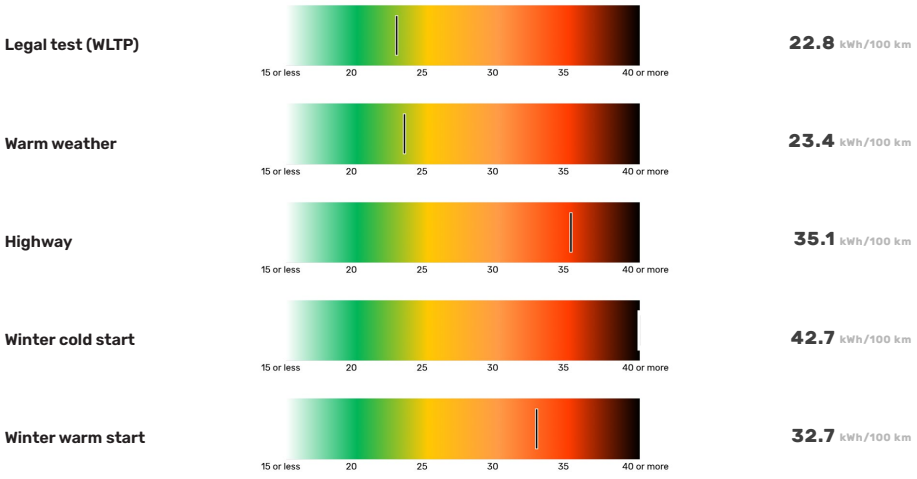
Energy demand

MARGINAL 4.2 /10

Propulsion energy consumption in laboratory

ADEQUATE 7.7 /10

The vehicle's measured consumption figures are displayed in the bar chart. The colour scheme positions the values relative to low and high figures in a typical range. The ranges are different for combustion engine and pure electric vehicles.



good adequate marginal weak poor not applicable

Energy Efficiency

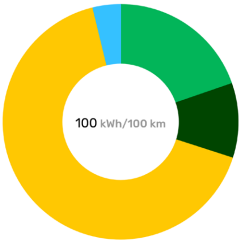
4.0 /10

Additional Life Cycle Assessment information

MARGINAL 5.2/10

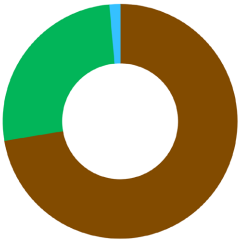
Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime 'from cradle to grave'. In this section, the total vehicle life cycle primary energy demand is displayed. The scoring does not consider the direct propulsion energy use, because it is scored separately in the 'Propulsion energy consumption in laboratory'.

Total LCA energy consumption



- Production & recycling 19.7%
- Battery production 10.3%
- Fuel/energy supply * 66.2%
- Maintenance 3.8%

Energy source share in total LCA consumption



- Fossil 72.4%
- Renewable 26.2%
- Other 1.4%

Direct propulsion energy share is not shown, it is included in 'Fuel/energy supply'.

Rolling resistance

Rated here is the vehicle's resistance to movement at low speeds. Different factors have an impact on it, but the most significant one is mass.

POOR 0.0/10

good adequate marginal weak poor not applicable

Greenhouse Gases

5.4 /10

Comments

Similarly to the Energy Efficiency Index, the score in the Greenhouse Gas Index is curbed by the high emissions of the vehicle production and the upstream emissions of the electricity supply. The estimated overall life cycle greenhouse gas emissions are close to 200 g CO_2-eq./km.

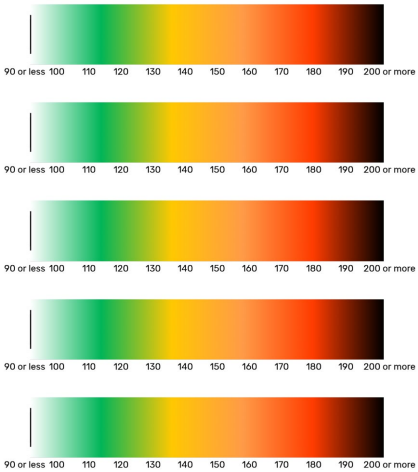
Exhaust GHG emissions

Combustion of conventional fuels releases greenhouse gases at the vehicle's tailpipe. The most significant of these gases are the emissions of CO_2. Green NCAP's assessment considers methane (CH_4) and laughing gas (N_2O) as well. Together, these are counted with their global warming potential to a sum known as CO_2 equivalent.

GOOD ● **10.0** /10

In laboratory

Green NCAP performs a wide range of tests on cars in the laboratory. This is the best way to ensure controlled conditions and guarantee that all cars are tested in the same way, making their results comparable. Read more



good adequate marginal weak poor not applicable

Greenhouse Gases

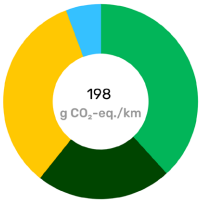
5.4 /10

Additional Life Cycle Assessment information

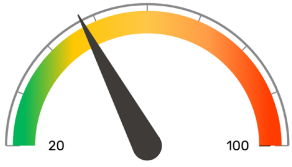
Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime, 'from cradle to grave'. In this section, the total vehicle life cycle greenhouse gas emissions are displayed.

WEAK **0.1**/10

Total LCA GHG emissions



- Production & recycling 38.2%
- Battery production 22.5%
- Tailpipe emissions * 0.0%
- Fuel/energy supply 33.6%
- Maintenance 5.7%



tonnes CO_2-equivalent/vehicle

Vehicle Life Cycle average emissions **48** (+/-)
(best **43** | worst **53**)

* The scoring does not consider the direct exhaust GHG emissions at the tailpipe, because they are scored separately in 'Exhaust GHG emissions' above.

good adequate marginal weak poor not applicable

Driving Experience

Consumption & Range

ADEQUATE

Cold Winter Performance

GOOD

Charging Capability

GOOD

Green NCAP Comment

The large SUV Kia EV9 might consume a lot of electricity but it scores remarkably in the driving experience assessment.

- The estimated real-world consumption figures are high and the car receives poor grades for its energy demand in all driving scenarios. However, it must be noted that Green NCAP assesses the absolute values, regardless of the vehicle class. Consumers interested in the vehicle should also compare its consumption figures to those of similar competitor cars. With a large 100 kWh battery, the resulting driving ranges are seen as adequate. The consumption values displayed on the vehicle's screen are higher than the measured figures.
- A significant driving range can be achieved in cold winter conditions, if the vehicle can be pre-conditioned before the trip, while being plugged to the charger. The cabin heat-up performance of the EV9 is excellent, providing very quickly high thermal comfort in cold conditions. Even in the rear footwell, only 300 seconds were needed to reach 16°C. The fact that the time needed to reach the same temperature in the footwell of the non-occupied rear seat was almost 1,400 seconds, suggests that the vehicle actively provided heat only to the passenger present in the vehicle and used smart management to save energy by not wasting it on non-present occupants. The vehicle's cabin is very well thermally insulated, which helps to reduce energy consumption for heating.
- While the home AC charging performance is found to be adequate with a 87.4% grid-to battery-output efficiency, the EV9 impresses with its fast DC charging capabilities. Furthermore, the vehicle is one of the few EVs on the market to offer high-level bidirectional-charging functionalities.

Consumption & Range

ADEQUATE

Estimated actual consumption

POOR

What consumption can be expected in real world conditions?

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

What driving range can be expected in real world conditions?

Of special importance to consumers is the real-world driving range of electric vehicles. Green NCAP estimates this 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

Accuracy of display

ADEQUATE

Is the consumption figure on the display correct?

good adequate poor not applicable

Cold Winter Performance

GOOD

Driving range benefit of pre-warming

GOOD

How much further can you drive in winter, if the car is pre-warmed?

A cold vehicle has increased energy consumption at the start of its trip, mostly due to the cabin heating demand. Pre-warming the car while it is plugged, when possible, can significantly benefit its driving range in cold weather conditions. Green NCAP's winter tests are performed at -7°C.

Type	Driving Range Benefit	Result
Urban trip	+131 km	
Mixed trip	+78 km	

Cabin heating

GOOD

Does the vehicle get warm quickly in winter?

This indicates the time needed to reach 16°C in seconds at different positions in the cabin.

	Front	Rear
Head area	248 s	390 s
Footwell	192 s	

It took 1,394 seconds to reach the target temperature in the rear left footwell. The vehicle possibly recognised the empty seat and optimised energy use. Rear right footwell reached 16°C in 299 seconds.

good adequate poor not applicable

Cold Winter Performance

GOOD

Additional heating functions

What functions can be used to improve heating comfort?

Unlike a combustion car, which usually uses the engine's waste heat to provide warmth to the cabin, in electric vehicles, the energy needed comes from the battery. Therefore, there is a trade-off between thermal comfort and energy consumption. Some additional heating functions can deliver good thermal comfort performance at lower energy use compared to heating up the entire cabin. If they can be scheduled or remotely activated before a trip, while the vehicle is still plugged, both comfort and driving range can be notably improved.

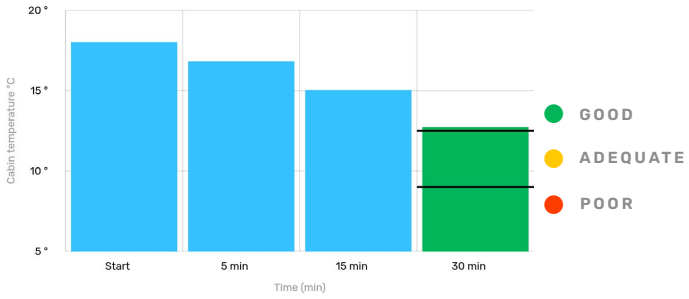
	Y/N	Fitment
Heat pump	✓	Standard for the tested version
Seating heating front	✓	Standard
Seating heating rear	✓	Standard for the tested version
Steering wheel heating	✓	Standard
Sheduled pre-heating of seats	✗	
Scheduled steering wheel pre-heating	✓	Standard
Scheduled cabin air pre-heating	✓	Standard
Smart cabin heating management	✓	Standard

Cabin thermal insulation

GOOD

How well does the cabin maintain its temperature?

Assessed here is the average cabin temperature drop after 30 minutes, starting from 18°C when the outside temperature is -7°C and the vehicle is inactive.



good adequate poor not applicable

Charging Capabilities

GOOD

Battery pre-conditioning

Does the vehicle have the ability to optimize the battery temperature for fast charging?

Fast charging is quicker when the battery temperature is in a certain range, and many vehicles possess the function to actively prepare for a coming fast charging event. Most use the charger destination in the navigational system to control the process, and some would offer a manual activation function.

	Manual	Automatic
Battery pre-conditioning	✓	✓

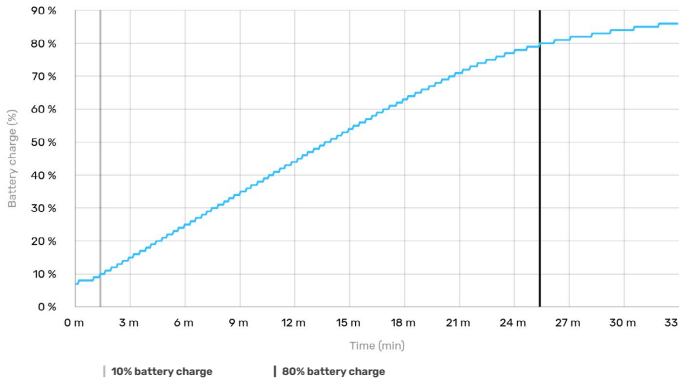
Fast charging

GOOD

Green NCAP's fast charging test verifies the vehicle's ability to recharge fast, which is crucial at long trips or tight schedules. Although constantly improving, not all vehicles offer the same capabilities.

Charging time

How quickly can the battery charge?



good adequate poor not applicable

Charging Capabilities

GOOD

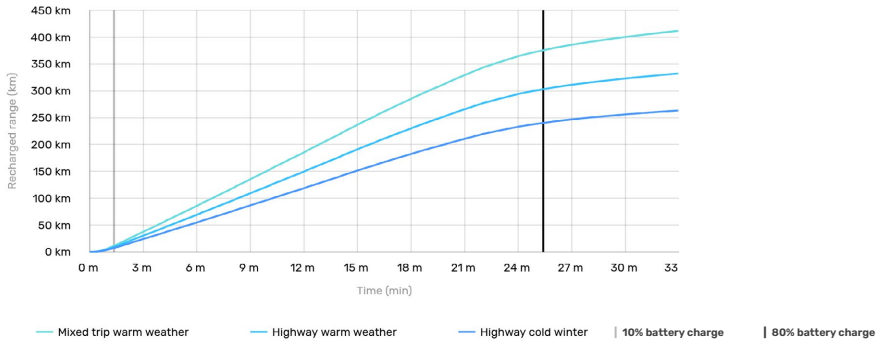
Fast charging

GOOD

Green NCAP's fast charging test verifies the vehicle's ability to recharge fast, which is crucial at long trips or tight schedules. Although constantly improving, not all vehicles offer the same capabilities.

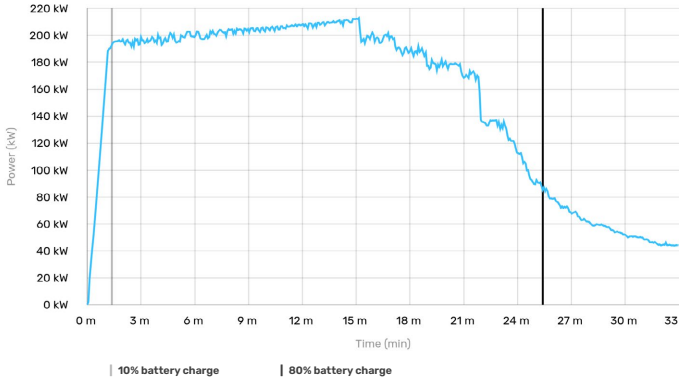
Recharged range gain per charging time

How long do you need to fast charge to drive a certain distance?



Charging power

How quickly does energy flow into the battery, depending on its charge level?



good adequate poor not applicable

Charging Capabilities

GOOD

Home charging efficiency

ADEQUATE

Is charging at home efficiently utilizing the energy withdrawn from the grid?

The assessed efficiency value is the grid-to-battery-output efficiency, which describes what share of the energy taken from the electricity grid is available for the vehicle to use for propulsion and other auxiliary functions. The value encompasses not only the charger efficiency but considers several other losses as well.

Home charging efficiency	87%	
Maximum home charging power	11.0 kW	Standard

Bidirectional charging

GOOD

How capable is the vehicle of supplying energy from its battery to other devices or systems?

Bi-directional charging is available in some vehicles and is gaining increasing popularity. It comes with different power and functionality levels. However, battery usage for purposes additional to regular vehicle driving and charging might be disadvantageous for its durability and manufacturers might introduce limitations to protect it.

Power output

3.6 kW

Fitment: Standard

Compatibility

Vehicle-to-Load (V2L)
The inlet or the interior socket can provide AC power through an electrical domestic socket.

Vehicle-to-Household (V2H)
The vehicle can provide power to a household through a charger.

Vehicle-to-Grid (V2G)
The vehicle can return power to the grid.

Fitment: Standard

Grid integration

Basic
No integration (just a socket for a stand-alone load). No scheduling option. Very basic visualisation.

Limited
Energy management system through the vehicle app (timers availability and power monitoring). Dedicated interface in the car, with mobile app monitoring.

Advanced
Advanced settings available such as tariff and consumption control, linked to distributor energy prices. Advanced real time energy flow visualization. AI powered suggestions for optimal usage.

Fitment: Standard

good adequate poor not applicable

Specifications

Vehicle class
Large SUV

System power/torque
283 kW/700 Nm

Engine size
n.a.

Declared consumption
22.8 kWh/100 km

Declared driving range
Overall 505 km
City 668 km

Declared CO_2
n.a.

Declared battery capacity
Usable (net) 99.8 kWh
Installed (gross) 99.8 kWh

Mass
2,682 kg

Heating concept
Waste heat & PTC heater & heat pump

Tyres
285/45 R21

Emissions class
AX

Tested car
KNAAE8150R601xxxx

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