



EV FACT SHEET

Polestar 2

Created and written by:
Bryce Gatton
Contact:
Bryce@EVChoice.com.au



2021 Polestar 2. Image: Polestar media

INTRODUCTION

Polestar is a new, all-electric sub-brand from Volvo. (Both companies being owned by Chinese auto manufacturer Geely). The Polestar 2 is based on the CMA (Compact Modular Architecture) platform and electric drive system that also underpins the Volvo XC40. As such, the Polestar and XC40 share a number of similarities. The Polestar 2 is manufactured at the Luqiao CMA Super Factory in Luqiao, China.

Polestar, like Tesla (and Hyundai for their Ioniq 5), do not offer vehicles for sale through a traditional dealer network. Instead, all Polestar models will be offered for sale at a fixed price through the Polestar website. Currently, test drives of the Polestar 2 are also only bookable via the Polestar website.

The Polestar 2 is described as a 5 door, crossover liftback and provides a slightly more 'car like' driving position (similar to the Hyundai Ioniq) in comparison to the more upright seating positions of what are regarded as its other BEV competitors. These include the Nissan Leaf e+, Kia e-Niro, Hyundai Ioniq 5, Volvo XC 40 Recharge, Mercedes EQA and the (hopefully soon to arrive) Tesla Model Y.

DRIVING RANGE

Australian test standards are currently in a state of flux, with the Green Vehicle Guide¹ showing some vehicle driving ranges using either an equivalent to the old (and highly over optimistic) European NEDC test cycle figure or the newer European WLTP test cycle figure. Worse still, for recent additions to the Australian market the GVG often gives no data is given at all! Around town, the WLTP figure is the best guide to range or, if doing outer suburban to regional driving – use the US EPA figure.

DRIVING RANGE (continued)

Testing system range estimates:			
Variant	NEDC (Aust)	WLTP (Euro)	EPA (USA)
Std range 2WD	Not yet rated	470	Not rated
Long-range 2WD	Not yet rated	540	426
Long-range AWD	Not yet rated	480	401

Table 1: Driving range estimates for the Polestar 2

Using the US EPA range, a Polestar 2 should be capable of a return trip from the Melbourne GPO to Ararat provided neither the heating nor air conditioning were heavily used. For this sort of trip, it could be useful to do either a ½ - 1 hour 11kW charge at Elizabeth Park in Ararat, or a 10 to 15 min DC fast-charge in Ballarat.

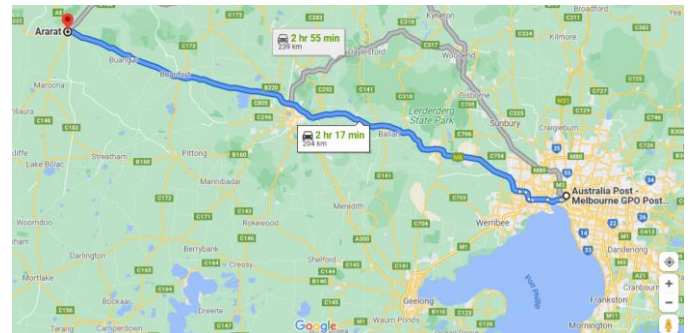


Image: Google maps

CHARGING SPEEDS/REQUIREMENTS

Charging port:

The Polestar 2 is fitted with a CCS2 socket allowing it to charge via Type 2 AC chargers² as well as CCS2 DC fast-chargers.



CCS2 charging plug and socket

Notes:

- <https://www.greenvehicleguide.gov.au>
- The Polestar 2 can be charged at any AC EVSE, however an adaptor will be needed to use the (few) remaining older EVSEs fitted with Type 1 (J1772) plugs.

CHARGING SPEEDS/REQUIREMENTS (CONTINUED)

AC charging:

Like all new EVs sold in Australia, the Polestar 2 is fitted with a type 2 AC socket as part of the CCS2 AC/DC charge plug system.

AC Charging rates:

Single phase: maximum of 7.4 kW (32A)

Three phase: maximum of 11 kW (16A per phase)

DC fast charging:

The Polestar 2 uses the CCS2 DC fast-charge connector and can charge at up to 155 kW DC.

This connector is fast becoming the majority DC fast-charge connector type in both Australia and overseas.

Charging times:

Charging speeds and times vary on the capacity of the EVSE (Electric Vehicle Supply Equipment) it is connected to and the chosen battery size. Charging times for the Polestar 2 Long Range are shown in table 2 below.

AC: 0 – 100% time				DC: 0 – 80% time	
10 A (power point)	15 A 1 phase (Caravan outlet)	32 A (1 phase Home EVSE)	16 or 32 A (3 phase public AC EVSE)	DC Fast charge (50kW)	DC Fast charge (150kW)
38.5h	24h	12h	16A: 8.25h 32A: 8.25h	82m	35m

Table 2: Charging times for the Polestar 2 Long Range

HOME CHARGING CONSIDERATIONS

General:

To get the shortest home charging time for the Polestar 2, an 11 kW three phase AC EVSE would be needed. However, depending on your existing power supply and/or charging needs, a lower rated EVSE may only be practicable, or needed. (See notes below). Lower capacity EVSEs will increase charging times, as shown in table 2 above.

The Polestar 2 also comes with a Mode 2 portable EVSE for plugging into a 10A power point. Charging a Polestar 2 Long Range from 0 – 100% with this EVSE will take around 38.5 hours.

Important notes for any home EVSE installation:

1. High charging rates are generally not needed for overnight charging.
2. Homes do not normally have three phase AC connected.
3. Switchboard and/or electrical supply upgrades may be needed if your home is more than 20 years old. (For more information on this item - read articles in:
(a) Renew magazine edition 143. (EVSE wiring)
(b) Renew magazine edition 156. (EVSE buyer's guide)

SPECIFICATIONS

Boot volumes in litres: (1 litre = 10 x 10 x 10 cm)

- Boot - seats up: 405 L*
- Boot - seat folded/to roof: 1,095 L*
* including 41 L under rear floor
- Froot: 31L ('Froot' = under-bonnet storage)

Dimensions:

- Overall length: 4,606 mm
- Overall width (mirrors folded/mirrors out): 1,800/1,985 mm
- Overall height: 1,479 mm

Battery:

Variant	Battery kWh actual (usable)
Standard range	69 (67)
Long-range	78 (75)

Energy consumption: (WLTP test cycle)

- 17 kWh/100km (standard range, single motor)

Kerb weight:

Variant	Kerb weight (kg)
Standard range 2WD	1,940
Long-range 2WD	1,994
Long-range AWD	2,113

Charging:

- 1 phase AC: 7.4 kW max.
- 3 phase AC: 11 kW max.
- DC: 155 kW (long range), 130 (std range) max.

Charge port location:

- Rear left side

Drive configuration:

- Front wheel drive or all-wheel drive (AWD)

Towing:

- 1500 kg braked/750 kg unbraked.

Performance:

Variant	Max. Power (kW)	0 to 100km/h (Sec)
Standard range 2WD	170	7.4
Long-range 2WD	170	7.4
Long-range AWD	300	4.7

IMPORTANT NOTE

Always check all specifications with the manufacturer prior to any purchase. No responsibility accepted by AEVA or Bryce Gatton (EVChoice) for errors factual or due to reproduction in this Fact Sheet. Whilst all efforts are made to ensure the accuracy of the material in this Fact Sheet, manufacturers regularly make changes (often unannounced) to their model ranges and specifications.