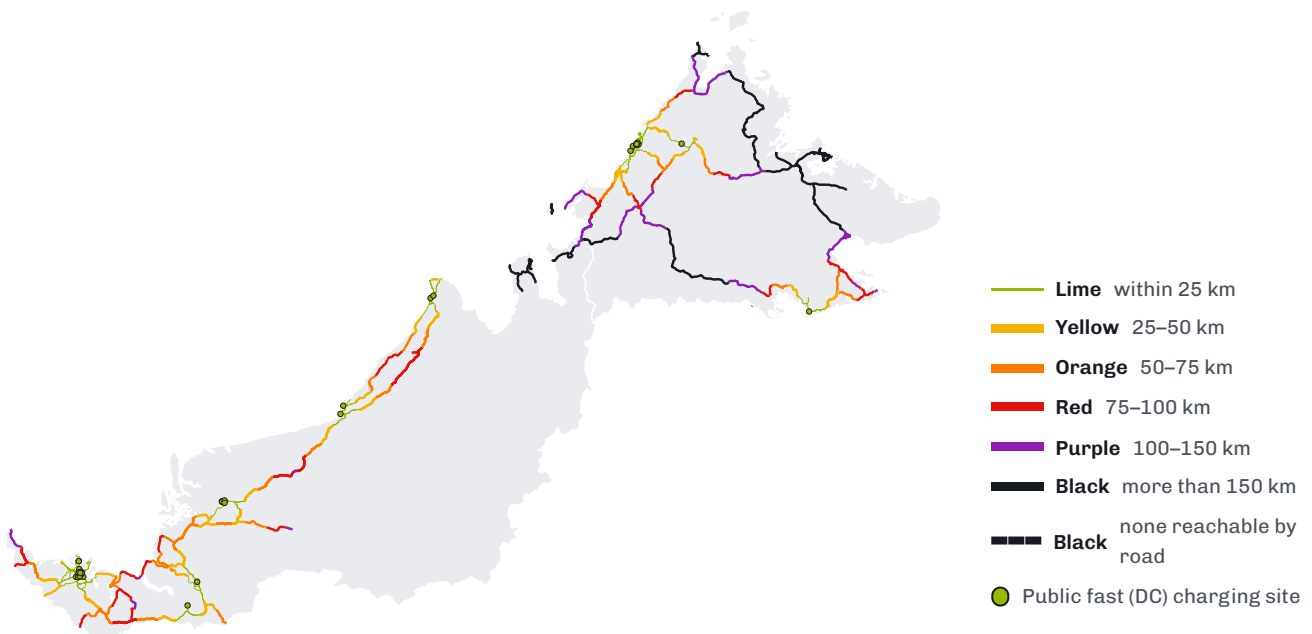


Case study

More than four in ten kilometres of Sabah's and Sarawak's main roads are more than 75 km from a fast charger

How AGA GeoAnalitik merged six charger maps and registers into one list of 36 public fast-charging sites, measured the drive from every point on 5,008 km of Sabah's, Sarawak's and Labuan's main roads to the nearest one, and found where the gaps are.



What GeoAnalitik does

Every gap named, measured and put on the map

AGA GeoAnalitik builds location studies from public records and pins every claim to a place. Here, 36 fast-charging sites and 5,008 km of main road became one question a reader can act on: how far is this stretch of road from the nearest fast charger?

1	2	3
Collect	Measure	Pin
PlugShare, Google Maps, Open Charge Map, OpenStreetMap, Supercharge.info and the government register, merged into one list of sites; OpenStreetMap roads; DOSM household income.	The shortest drive along the road network from every point on 5,008 km of main road to the nearest public fast charger, in both directions.	Each finding names its road, its district and its distance, and the map colours every stretch in one of seven levels.

What this study answers

Charge-point operators	Where the next DC site closes the most far kilometres. Sarawak's FT1 alone has 280 km more than 75 km from a fast charger.
Fuel and highway operators	Where the gaps sit on the expressways and trunk roads they serve, and how far each stretch is from the nearest fast charger today.
Government and planners	Where public money would close a gap, and who the network leaves out: 56% of fast-charging sites stand in the richest two fifths of areas.
Car makers and dealers	Which routes a buyer can drive with confidence: 24% of main road is within 25 km of a fast charger, 44% more than 75 km.

Every source is public; no operator's own data was used. The data is correct as of the study date, 30 September 2026, and the study is not refreshed after it.

The study at a glance

2,228 km of main road more than 75 km from a fast charger

5,008 km

of expressways, main federal and state roads and roads to 11 resorts, jetties and parks

36

public fast (DC) charging sites, merged from six maps and registers

44%

of main road is more than 75 km from a fast charger

24%

is within 25 km of one

100%

of Labuan's main road is more than 75 km from one, the highest share; then Sabah 63% and Sarawak 26%

264 km

from Sukau to the nearest fast charger, the farthest destination

What we found

1	Sabah has no listed fast (DC) charger from Ranau to Sandakan and Lahad Datu.	p. 6
2	Sabah's interior, south of Keningau and inland from Sipitang, is more than 200 km from one.	p. 6
3	Sabah's best-known wildlife sites are more than 200 km from a fast charger.	p. 8
4	Sarawak's Pan Borneo Highway has two gaps of about 200 km.	p. 5
5	The fast chargers sit in the better-off towns.	p. 9
6	Labuan has no fast charger at all.	p. 5
7	The map holds when the least certain sources are dropped.	p. 10

The map

Every stretch of main road, coloured by the drive to the nearest fast charger

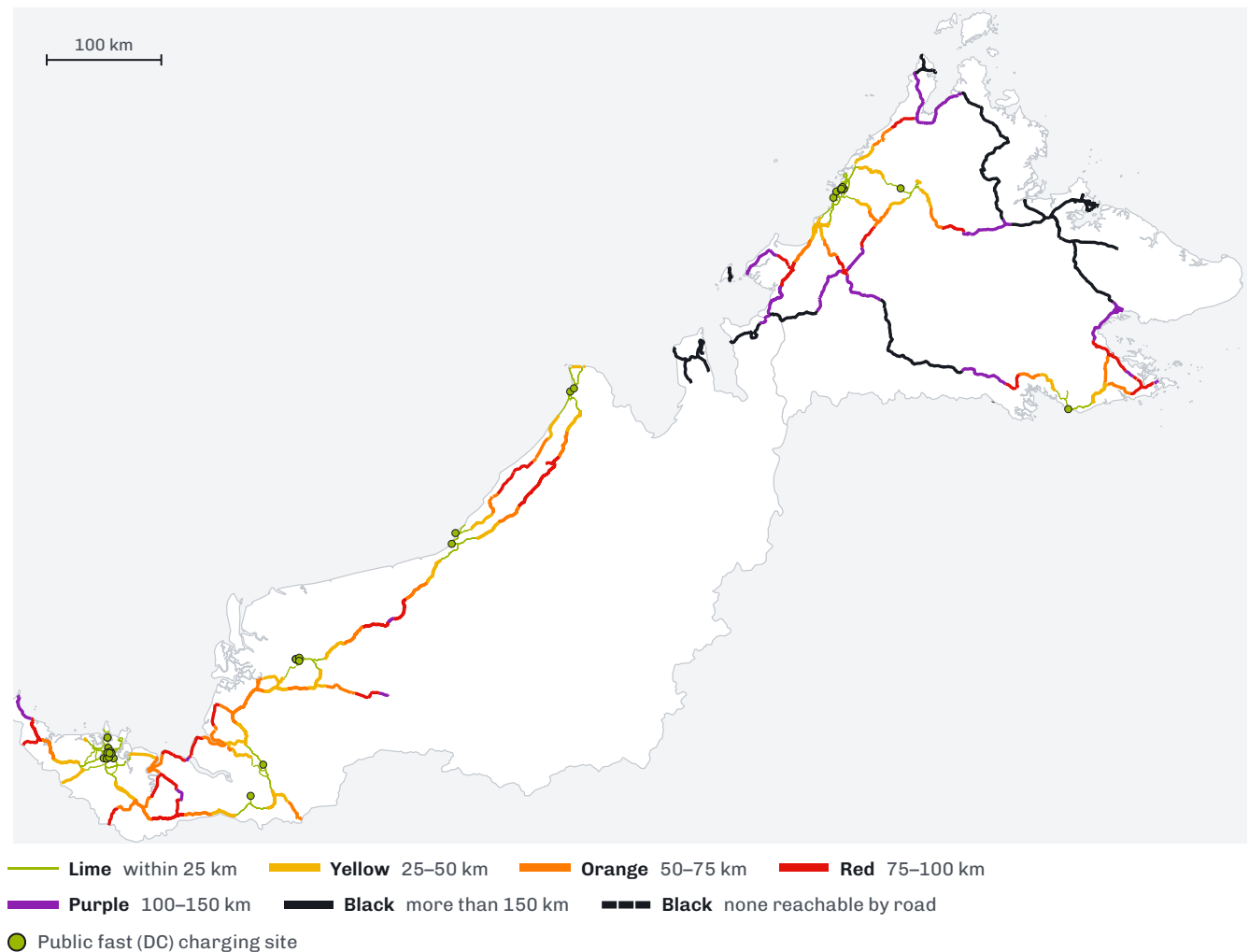


Figure 1. The main roads of Sabah, Sarawak and Labuan: expressways, main federal and state roads and the roads to 11 resorts, jetties and parks, coloured by the distance by road from each point to the nearest public fast (DC) charger (lime dots). A stretch 75 km from one sits in a gap of 150 km or more between them.

By state

Sabah holds more than two thirds of the far kilometres

Of the 2,228 km of main road more than 75 km from a fast charger, 1,534 km are in Sabah, 676 km in Sarawak and 19 km in Labuan (Figure 2). Sarawak has three times Sabah's fast-charging sites, 27 to nine, on a slightly longer network.

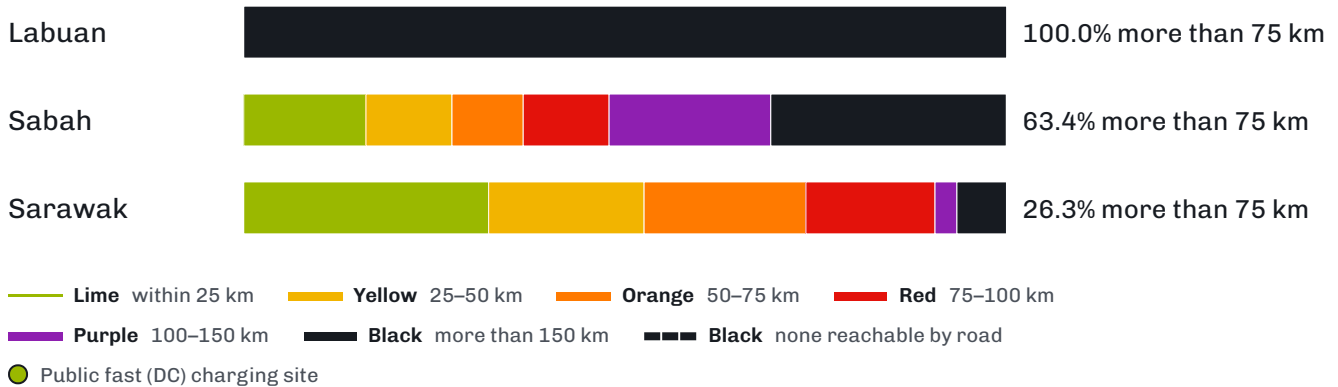


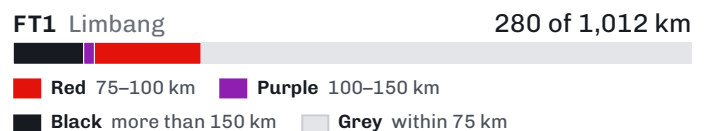
Figure 2. Kilometres of main road by distance by road to the nearest public fast charger, by state, the farthest first. The figure at the end of each bar is the share more than 75 km from one.

Pan Borneo's two gaps, and Labuan

Sarawak's Pan Borneo Highway has two gaps of about 200 km.

FT1

Sibu to Bintulu and Bintulu to Miri have no fast charger between the towns. Limbang and Lawas, reached from Miri through Brunei, are more than 200 km from one.



Labuan has no fast charger at all.

L700

Its roads are drawn dashed: no fast charger can be reached from them without the ferry.

Findings 1 and 2

Sandakan, Lahad Datu and Sabah's interior

Sabah has no listed fast (DC) charger from Ranau to Sandakan and Lahad Datu.

FT22 **FT13**

Seven of Sabah's nine fast-charging sites are in and around Kota Kinabalu; the other two are at Kundasang and Tawau. From the one at Kundasang to Sandakan, and on to Lahad Datu, a driver is up to 239 km by road from the nearest one, the farthest of any federal road in the report.



Sabah's interior, south of Keningau and inland from Sipitang, is more than 200 km from one.

Jalan Keningau-Nabawan **SA3**

The road from Keningau to Nabawan and the Sipitang–Tenom road are up to 206 and 207 km from a fast charger; every kilometre of both is more than 75 km from one.

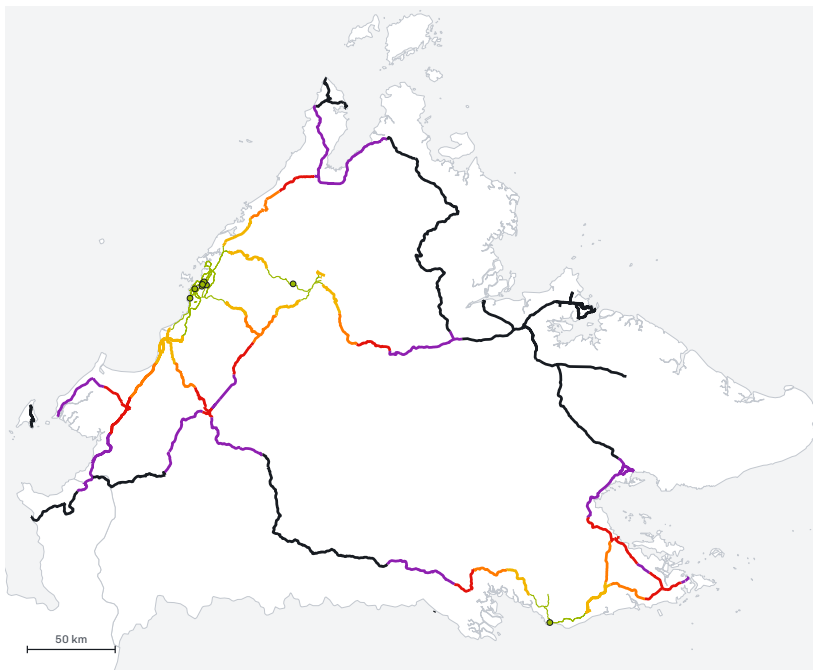


Figure 3. Sabah, closer: the same colours at a larger scale.

The far roads

The roads with the most kilometres more than 75 km from a fast charger

Sabah: from Ranau to Sandakan (**FT22**) and Sandakan to Lahad Datu (**FT13**) there is no listed fast charger; nor in Keningau's interior south to Nabawan, nor north of Kota Belud to Kudat. Sarawak: the Pan Borneo Highway (**FT1**) has fast chargers in Kuching, Sibu, Bintulu and Miri, and gaps of about 200 km between the last three.

Road	Km more than 75 km away	Farthest point	Districts
FT1 Jalan Sibu-Bintulu	280 of 1,012	206 km Limbang, Sarawak	Lawas, Subis, Limbang, Selangau, Lundu, Serian
FT22 Jalan Ranau-Telupid	164 of 297	239 km Sandakan, Sabah	Telupid, Sandakan, Beluran, Ranau
Jalan Nangoh Paitan Kanibungan	133 of 133	243 km Beluran, Sabah	Beluran, Pitas, Telupid
FT13 Jalan Sandakan-Lahad Datu	122 of 131	224 km Sandakan, Sabah	Kinabatangan, Lahad Datu, Sandakan
Jalan Keningau-Nabawan	110 of 110	206 km Nabawan, Sabah	Keningau, Nabawan
FT500 Jalan Penampang-Keningau	93 of 172	136 km Tenom, Sabah	Keningau, Tambunan, Tenom
FT1 Jalan Beaufort-Papar	85 of 212	140 km Sipitang, Sabah	Beaufort, Sipitang, Kota Marudu, Kota Belud
SA3 Jalan Sipitang-Tenom	71 of 71	207 km Sipitang, Sabah	Sipitang, Tenom
A5 Jalan Lahad Datu-Tawau	70 of 137	145 km Lahad Datu, Sabah	Kunak, Lahad Datu
Q157 Jln Simunjan	54 of 62	106 km Simunjan, Sarawak	Simunjan

Table 1. The ten main roads with the most kilometres more than 75 km by road from a public fast charger, the farthest point on each, and the districts they run through. The report lists them all.

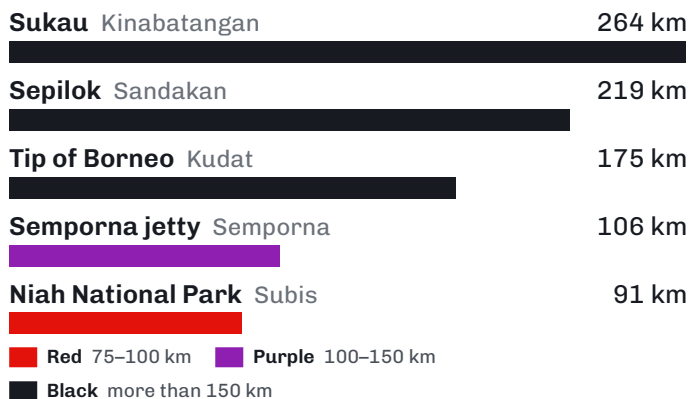
Finding 3: destinations

Sukau, Sepilok and the Tip of Borneo are more than 170 km from a fast charger

Sabah's best-known wildlife sites are more than 200 km from a fast charger.

Sukau road **Sepilok road**

The Kinabatangan river at Sukau is 264 km by road from the nearest one, and the Sepilok orangutan centre 219 km. Both are reached from Sandakan, which has none.



We added the roads to 11 resorts, jetties and parks. By road, the Kinabatangan river at Sukau is 264 km from the nearest fast charger, the Sepilok orangutan centre 219 km, the Tip of Borneo 175 km and the Semporna jetty for Sipadan and Mabul 106 km. In Sarawak, Niah National Park is 91 km from one; Damai Beach, Bako and Similajau are within 25 km of Kuching's and Bintulu's.

Destination	Kind	To the nearest fast charger	Access road
Sukau Kinabatangan, Sabah	attraction	264 km Black	41 km
Sepilok Sandakan, Sabah	attraction	219 km Black	2.8 km
Tip of Borneo Kudat, Sabah	attraction	175 km Black	17 km
Semporna jetty Semporna, Sabah	island ferry	106 km Purple	1.0 km
Niah National Park Subis, Sarawak	national park	91 km Red	9.5 km
Poring Hot Springs Ranau, Sabah	national park	28 km Yellow	8.5 km
Similajau National Park Bintulu, Sarawak	national park	24 km Lime	9.2 km
Bako jetty Kuching, Sarawak	national park	23 km Lime	4.6 km
Tawau Hills Park Tawau, Sabah	national park	21 km Lime	9.6 km
Damai Beach Kuching, Sarawak	beach	14 km Lime	0.5 km

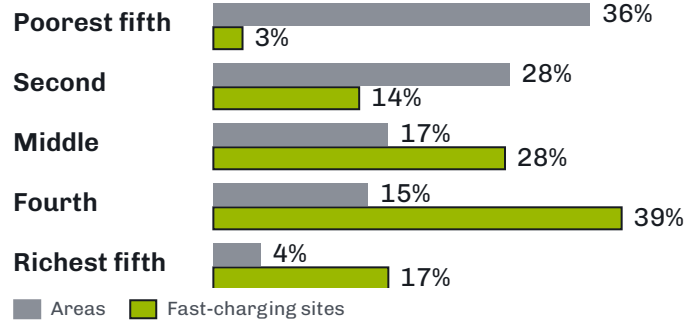
Table 2. The ten destinations farthest by road from a public fast charger, of the 11 resorts, island ferry jetties and parks in the study, and the length of the road from each to the main roads.

Finding 5: household income

Two thirds of the areas, the poorest nationally, have one in six fast chargers

The fast chargers sit in the better-off towns.

By median household income (DOSM, 2024), 56% of the fast-charging sites are in areas in the richest two fifths nationally, a fifth of Sabah's, Sarawak's and Labuan's areas; the poorest two fifths, two thirds of the areas, have 17%.



Of the 36 fast-charging sites, 20 (56%) are in areas in the richest two fifths nationally by median household income, which make up 19% of the areas in Sabah, Sarawak and Labuan. The poorest two fifths, 64% of the areas, have 6 (17%) (Table 3).

Area median household income	Areas	Fast-charging sites
Poorest fifth	56	1
under RM 4,040 a month	36%	3%
Second	44	5
RM 4,040–4,800 a month	28%	14%
Middle	26	10
RM 4,800–5,860 a month	17%	28%
Fourth	23	14
RM 5,860–7,460 a month	15%	39%
Richest fifth	7	6
over RM 7,460 a month	4%	17%
Total	156	36

Table 3. Areas and public fast-charging sites by the median monthly household income of the area, in national fifths (DOSM Household Income Survey 2024).

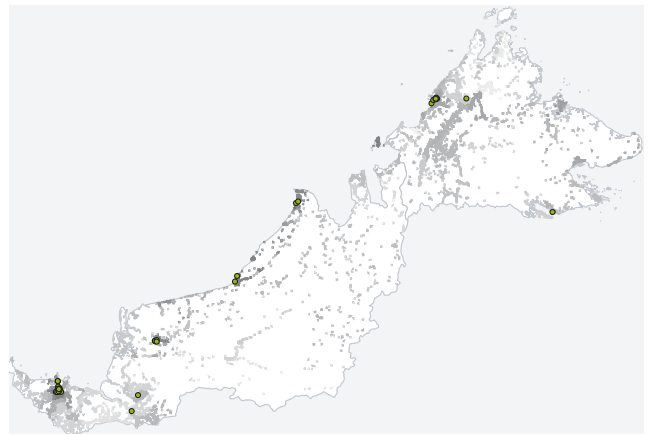


Figure 4. Median household income by area, darker for richer, with the fast-charging sites.

How we check our work

The gaps hold when the least certain sources are dropped

The map holds when the least certain sources are dropped.

Leaving out Tesla-only sites, or sites known only from the government register (last updated May 2025), moves no road's kilometres beyond 75 km by more than 1 km.

Six sources, one list of sites

Each source misses sites the others list. We merged all six: records within 100 m of each other are one site, fast if any source reports a DC connector there. The counts are records for all of Malaysia on 30 September 2026.

Source	Records	What it adds
PlugShare	3,418	Public and restricted locations reported by drivers
Google Maps	1,127	Listings typed as EV charging stations
Government register (MEVnet)	1,370	Kept by KPKT and PLANMalaysia; rows dated up to May 2025
Open Charge Map	811	Open data, export of 22 April 2026
OpenStreetMap	217	Charging stations mapped by volunteers
Supercharge.info	31	Tesla Supercharger sites

How the study was built

Data, method and stated limits

Study date: 30 September 2026. Every figure, map and table is correct as of that date. The study records what the sources listed then; it is not refreshed as chargers open or close, roads change or new surveys are published.

Chargers, 30 September 2026, for all of Malaysia: PlugShare (public and restricted locations; 3,418), Google Maps listings typed as EV charging stations (1,127), MEVnet, the government charger register kept by KPKT and PLANMalaysia (1,370 existing sites, rows dated up to May 2025), Open Charge Map (811; export of 22 April 2026), OpenStreetMap (217) and Supercharge.info (31 Tesla sites). Home chargers were never collected.

Sites: records from any source within 100 m of each other are one site. A site is fast if any source reports a DC connector there, and counted unless every source marks it restricted or any listing says it is ("[Restricted]", "residents only": mostly condominium car parks, 247 sites in Malaysia). In Sabah, Sarawak and Labuan: 36 open public fast-charging sites; 82 more with slow (AC) charging only.

Roads: OpenStreetMap motorway, trunk and primary roads, and the road from each of 11 resorts, jetties and parks to them (the cheapest drive, costing village lanes and car parks up; listed in Table 2), 5,008 km in Sabah, Sarawak and Labuan. A divided road is counted once: OpenStreetMap draws each carriageway as a one-way road, and each counts half. Secondary roads, Brunei's roads (the route from Miri to Limbang and Lawas) and dead ends within 150 m of another road are used to connect them, but not counted or drawn.

Household income: DOSM Household Income Survey 2024 (storage.dosm.gov.my/hies), median monthly gross household income for the smallest area DOSM publishes (613 in Malaysia), placed with DOSM's open area outlines. Only built-up land is shaded: OpenStreetMap's residential, commercial and industrial land and buildings, and about 250 m around each village it names (30 September 2026), so estates, forest and water inside an area stay blank. Each patch takes its area's median. The map shades each area in proportion to its median, from RM 1,500 (palest) to RM 8,000 (darkest); the 5 areas above RM 8,000 take the darkest shade. The Peninsular report runs its scale to RM 16,000, so a shade does not mean the same income in the two. Table 3 groups the areas in national fifths, which break at RM 4,040, 4,800, 5,860 and 7,460. A charger takes the income of the area it stands in; one just offshore takes the nearest area of its own state.

Distance: the shortest drive along that network from each point to the nearest fast-charging site, both directions treated alike. A stretch's colour is the larger of the distances at its two ends.

Colours: in this report thin lime is within 25 km, yellow 25–50, orange 50–75, red 75–100, purple 100–150 and black more than 150 km. The Peninsular report uses 10, 20, 30, 50 and 75 km, so a colour does not mean the same distance in the two.

Route numbers: OpenStreetMap references; a number alone is a federal route (FT), a letter first a state route. Sarawak's Pan Borneo sections (1-57, 1-70 and so on) are read as one route.

Sensitivity: the same run without Tesla-only sites, and without sites known only from MEVnet, changes no road's kilometres beyond 75 km by more than 1 km.

Limits

A road far from a *listed* fast charger may have one that no map or register lists. We checked the longest gap (Sandakan and Lahad Datu) against PlugShare directly: it lists no charger of any kind there.

Any DC charger counts as fast, whatever its power; some are 20–30 kW. The power is unknown for many sites.

Distances follow the road network in both directions: a charger at an R&R on the other carriageway counts as reachable, a few kilometres short of the real drive.

A charger up to 5 km off a main road counts, with its detour (1.3 times the straight line) added.

Brunei's chargers are not in our data, so Limbang and Lawas may be closer to a fast charger than shown.

Whether a charger works, is open at night, or takes your car is not known; Tesla sites are counted as open to all.

What a study for you adds

The same measurement, run for your decision

Traffic on every gap	JKR's road traffic counts put a number of cars on each stretch, so the gaps that strand the most drivers rank first.
Sites that would close a gap	Petrol stations, R&R stops and towns midway along each gap, ranked by how many far kilometres a fast charger there would close.
Charging points, not sites	The DC points and their power at every site, so a gap bridged by one charger shows as one fault away from reopening.
Hills and range	The Crocker Range, which climbs more than 1,000 m between Kota Kinabalu and Keningau and shortens a car's range.
Your own network	Your stations, dealers or planned sites added to the map, and the gaps each would close.

How a study runs

- 1 You tell us the decision.** A region, a corridor, or the sites you are weighing.
- 2 We measure every road** against today's fast chargers, and against yours or your candidates'.
- 3 We rank the sites** by the far kilometres each would close, weighted by traffic.
- 4 You read the results on a private link:** the report, the map and a page per site.

Tell us who you are, a charge-point operator, a station network, a planning office or a car maker, and the decision in front of you.



Digital transformation through data analytics and artificial intelligence. Turning data into decisions, and intelligence into impact.

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Other AGA platforms

Climate Risk intelligence
RoadAsset
War Room intelligence