Tesla batteries will live longer than expected, survey finds

The packs are on track to last over 500,000 miles.
Steve Dent, @stevetdent

Tesla batteries retain over 90 percent of their charging power after 160,000 miles, according to data gathered by a Dutch-Belgium Tesla owners group. According to its survey of over 350 owners, the EVs dropped about 5 percent of their capacity after 50,000 miles, but lose it at a much slower rate after that. If the trend holds, most Tesla vehicles will still have 90 percent capacity after around 300,000 km (185,000 miles), and 80 percent capacity after a whopping 800,000 km (500,000 miles).

Tesla has no battery degradation warranty on its Model S and X luxury EVs, but guarantees that the Model 3 will retain 70 percent battery capacity after 120,000 miles (long-range battery) and 100,000 miles (shorter-range battery). That's a bit more generous than the one Nissan offers on the Leaf (66 percent over 100,000 miles) for instance. According to the survey data, Tesla will easily be able to meet this mark.

Lost battery capacity over time is one of the biggest concerns for EV buyers, so this new data, based on real-world usage, should be reassuring. There are some outlier EVs that lost capacity more quickly than others, for reasons that aren't clear, though. As such, while the data looks promising, it might be best to reserve judgement pending larger scale surveys with higher-mileage EVs.

Via: Electrek
Source: Tesla Motors club
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Highest Mileage Tesla Now Has Over 420,000 Miles

Aug 22, 2018 at 8:01pm

By: Vanja Kljaic

The Model S proves to be a longevity champion, racking up miles without too much hassle

The list of Tesla's with the highest mileage is growing in both users and miles traveled by the day. It's an internet resource that paints a pretty swell picture for the U.S carmaker. After all, the Tesla Model S with the highest mileage just crossed a whopping 420,000 miles (675,000 kilometers).

While many have argued about the longevity of the Model S, the vehicle keeps on plugging away. In order to put things into perspective, the mileage done by a user @gem8mingen equates to around 150 travels between Los Angeles and New York City. Even more, according to data from just one site, the total mileage covered by all the Teslas running on the roads today is 8.9 billion miles.

The long life is owed mostly to some particular traits of the battery-powered car. For example, unlike gasoline cars, Tesla vehicles require no traditional oil changes, fuel filter, spark plug replacements, or emission checks. For Tesla Model S owners, even brake pad replacements are rare, as the regenerative braking both returns energy to the battery and decelerates the vehicle. No moving parts within an ICE (Internal Combustion Engine) also decrease vibration, one of the most impactful items towards the health of the car.

In most ordinary situations, the only work done by the Tesla service staff within the inspections performed on these cars is simple wheel alignments, checking the tire condition, assessing replacement parts like key fob batteries and windshield wiper blades, and finally, installing the latest software update.

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Tesla Model S battery life: what the data show so far

John Voelcker April 27, 2017

Perhaps the biggest question in buyers' minds over electric cars is how long the batteries will last. Most new-car buyers have mobile phones whose batteries have only lasted a couple of years, perhaps less. Even as electric-car battery packs are warranted against outright failure for eight or 10 years, how much degradation should owners anticipate?

The question has surfaced again as a few of the earliest Nissan Leafs now appear to have lost up to half their battery capacity, with drivers finding their range has fallen below 50 miles of real-world use. Nissan has replaced those battery packs for some early Leaf owners, and others are likely to follow. It also swapped in a new chemistry for 2015, known as the "lizard cell," that is said to be far more resistant to high temperatures.

But the stories of those early Leaf owners—and advice on how best to negotiate for that Leaf replacement battery—have generated intense interest on this site and others. Beyond the Leaf, different electric cars appear to have different degradation rates: the Chevrolet Volt range-extended electric car, for instance, seems to have little or no range loss even after 300,000 miles (in one highly followed case).

What about the Tesla Model S? The sleek, fast, pricey luxury sedan was the first volume electric car to offer more than 200 miles of range, and its owners clearly use that range. With the earliest Model S cars having gone into service in June 2012, what have we learned?

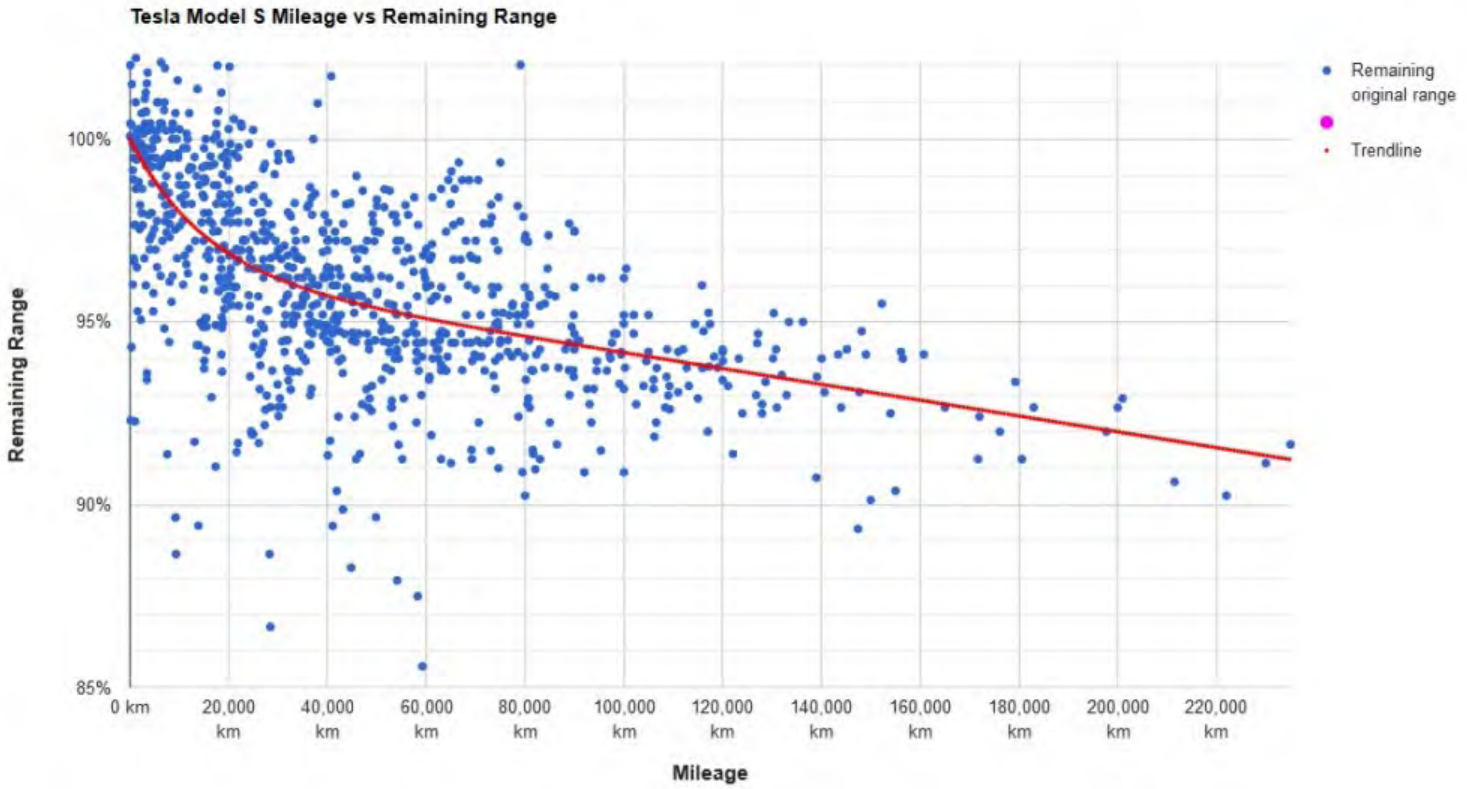
A wonderfully wonky and profusely linked blog post by Maarten Steinbuch, originally published in January 2015 and updated with new data last month, offers some answers. It presents multiple graphs of data points that plot Model S miles covered (in kilometers) against remaining battery range (in percent), from a variety of sources.

There are individual data points scattered on both sides of that line, of course.

But, overall, the data offer some basis for confidence that a Tesla Model S will lose—on average—less than 15 percent of its battery capacity over the average 150,000-mile (250,000-km) life of a vehicle.

We encourage reading the full post to appreciate the nuances, the constraints on the data, and the caveats that Steinbuch offers in his analysis.

But it seems safe to say that overall, the liquid-cooled large battery packs that gang thousands of small "commodity" cells that Tesla uses seem to hold their capacity better than the passive air-cooled packs with smaller numbers of large-format cells used by Nissan.



As always, many factors may affect pack condition: average speed, ambient temperature, frequency of fast charging, and a host of others. But the data so far appear to offer Tesla owners some confidence in the long-term prospects of their cars' batteries. That's good for electric cars in general, though it doesn't do much for owners of the earliest Nissan Leafs.

Naturally, issues like battery degradation and electric motor fatigue may appear with higher mileage vehicles. But that is easily serviceable and judging by the recent examples, even with such, high-mileage Tesla vehicles, the battery is still offering over 80% of its original capacity. The list to theright may be topped off by two Tesla Model S', but the Model X owners are slowly crawling for the top spots.

Name	Model	Miles	KM
@gem8mingen	S P85	420,000	675,923
E-Hawk@Tesloop	S 90D	410,000	659,829
Rex@Tesloop	X 90D	330,000	531,082
Deuxy@Tesloop	X 90D	315,000	506,942
Toro@Tesloop	X 90D	250,000	402,335
Ruby@Tesloop	X 90D	230,000	370,148
@AFHallMD	S P85+	206,000	331,524
Trevor58	S 85	157,000	252,666
Sccrendo	S 85	145,000	233,354
diaretical	S P85	143,000	230,136
@sneale2k	S P90D	136,000	218,870
Tes-s	S 85	135,000	217,261
Johnx64652	S 85	125,000	201,168
@_Tesla8	S 85	108,000	173,809
KevinR.co.us	S P85	107,000	172,199
dr_gko	S 85	106,000	170,590

That's really a no surprise. Recently, one company racked up 300,00 miles on their Tesla in just two years, putting their Model X to the ultimate test. After two years of what can only be described as ultimate overutilization, the battery pack of that particular vehicle lost only 12.6% of its original capacity. Additionally, Tesloop - the owner of that Model X - has noticed that their 2016 Model X battery degradation has essentially plateaued after about 9 months.

Certainly, we're not saying that there are no issues, but in most situations, drivers can rack up a significant amount of miles without too much hassle. Naturally, proper usage concerning charging, servicing, and maintenance is key to your cars long life expectancy. Electric vehicles are not any different.