

SUPPORTING SOLAR-PLUS-EV HOUSEHOLDS

By Tan Siew Mung

For years, the biggest selling point of electric vehicles (EVs) has been lower running costs compared with petrol-powered cars. As EV adoption accelerates in Malaysia, however, many consumers are discovering that cheaper motoring comes with a trade-off: higher household electricity bills.

Thus, a new trend is emerging whereby homeowners are pairing EVs with rooftop solar systems to offset charging costs and shield themselves from rising electricity tariffs and volatility in global energy markets.

With the Iran war, fuel subsidy rationalisation and rising electricity tariffs creating uncertainty around future energy costs, solar is becoming less an environmental purchase and more a financial hedge in Malaysia.

The local EV market has reached an inflection point, with registrations surging 105% year on year to 44,813 units in 2025, says Jagjit



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Sidhu, ChargeSingh

Sidhu, managing director of ChargeSingh, the EV charging arm of solar installer SOLS Energy.

"That is not a blip. That is a structural shift." He attributes much of the momentum to the arrival of more affordable models, particularly the Proton e.MAS 5.

The growing popularity of EVs has also been supported by an expanding range of models from Chinese brands such as BYD, government incentives and increasing awareness that EVs are cheaper to run than petrol-powered vehicles because of lower repair and maintenance costs.

As EV adoption accelerates, home charging is becoming a key consideration for buyers. While EV ownership can increase household electricity consumption, Sidhu says the overall cost of transport remains significantly lower than that of petrol-powered vehicles.

According to him, a full charge for a typical 60kWh to 70kWh EV battery costs between RM15 and RM25 under Tenaga Nasional Bhd's current tariff structure. On a per-kilometre basis, drivers can typically save 60% to 70% compared with petrol vehicles.

Still, EV charging can have a noticeable impact on household electricity bills. SOLS Energy deputy CEO Jaran Walia estimates that home charging adds 336kWh to 400kWh of monthly consumption, translating into an additional RM150 to RM200 on a typical Tenaga bill.



SOLS ENERGY

More households are now looking for solar and EV charging solutions

As a result, more EV owners are exploring rooftop solar. About a quarter of SOLS Energy's new enquiries now come from customers who either own or plan to buy an EV. "Solar is the first time they can actually own their energy," says Walia.

ECONOMICS OF SOLAR-PLUS-EV

The convergence of EV adoption and rooftop solar is becoming increasingly evident in Malaysia. According to Sidhu, one in three home charger enquiries now involves discussions about solar, up from one in 10 in 2022.

"Three years ago, we introduced the solar-plus-EV idea. Today, customers come in having already decided they want both and are just asking how," he says.

He attributes the shift to rising electricity costs and growing awareness that homeowners can offset EV charging expenses through solar.

The Solar Accelerated Transition Action Programme (ATAP) introduced in January 2026 has further strengthened the proposition by allowing households to earn export credits from excess daytime generation and use it to offset electricity consumed at night.

Beyond EV ownership, Walia says demand for solar is being driven by rising living costs, electricity tariff hikes and concerns over global energy market volatility. Increasingly, homeowners are viewing solar not only as a sustainability investment but also as a way to gain greater control over long-term energy costs.

He notes that a typical landed home solar system costs RM15,000 to RM55,000, depending on capacity, equipment and inverter type. The government rebate under the Program SuRia Home can offset up to RM3,000, helping to lower entry costs.

Payback periods generally range from four to six years. A mid-sized 7.56kWp system, typically around 12 panels, recovers its cost in about 5.2 years, while larger 12.6kWp systems of about 20 panels can reach break even in roughly four years, depending on usage patterns. Beyond the payback period, the system effectively offsets grid purchases for the remainder of its 15- to 20-year lifespan.

As most EV charging occurs overnight, he notes consumption does not directly coincide with daytime solar generation.

Instead, households rely on export credits under the ATAP framework to offset usage, with surplus daytime generation credited against

night-time demand. The export credit rate is currently RM0.2703 per kWh and does not fluctuate with retail tariffs.

The rising tariffs improve the relative value of self-consumption, since households avoid paying higher retail rates for each unit of solar-generated electricity used directly, he adds.

REMAINING OBSTACLES AND POLICY GAPS

Malaysia's uptake of residential solar and home EV charging is being held back, however, more by awareness gaps, trust issues and regulatory friction than by cost, Sidhu and Walia observe, even as government incentives continue to support adoption.

Walia says affordability is often misunderstood as the main obstacle. "You do not need to pay upfront. We offer credit card payment, instalment plans and financing. For many homeowners, the monthly solar payment is less than what they are currently paying Tenaga," he says, adding that the key constraint is awareness of available financing options.

He notes that trust remains another challenge in a market that has seen inconsistent installer quality. "Malaysia's solar market has had its share of installers that disappeared after the sale. Homeowners are right to be cautious," he says, adding that track record and operational history are increasingly important to customers.

On EVs, Sidhu says perceived technical barriers often deter homeowners more than actual costs. "The reality is simpler than the rumour. Most standard single-phase landed homes can take a 7kW charger without major electrical work," he says.

He adds that confusion around approvals and safety slows decisions. "We supply only Sirim-approved hardware. Every installation is Tenaga-compliant, carried out by certified technicians. That is not a marketing claim. It is what responsible installation looks like," he says.

Both executives say existing incentives, including Solar ATAP, the SuRia Home rebate and EV charger tax reliefs, are helping drive adoption.

They point to gaps, however, in strata housing access and approval timelines as areas needing policy attention to unlock broader uptake of solar-plus-EV households. 🍷



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