Toyota to test solar panels for electric cars

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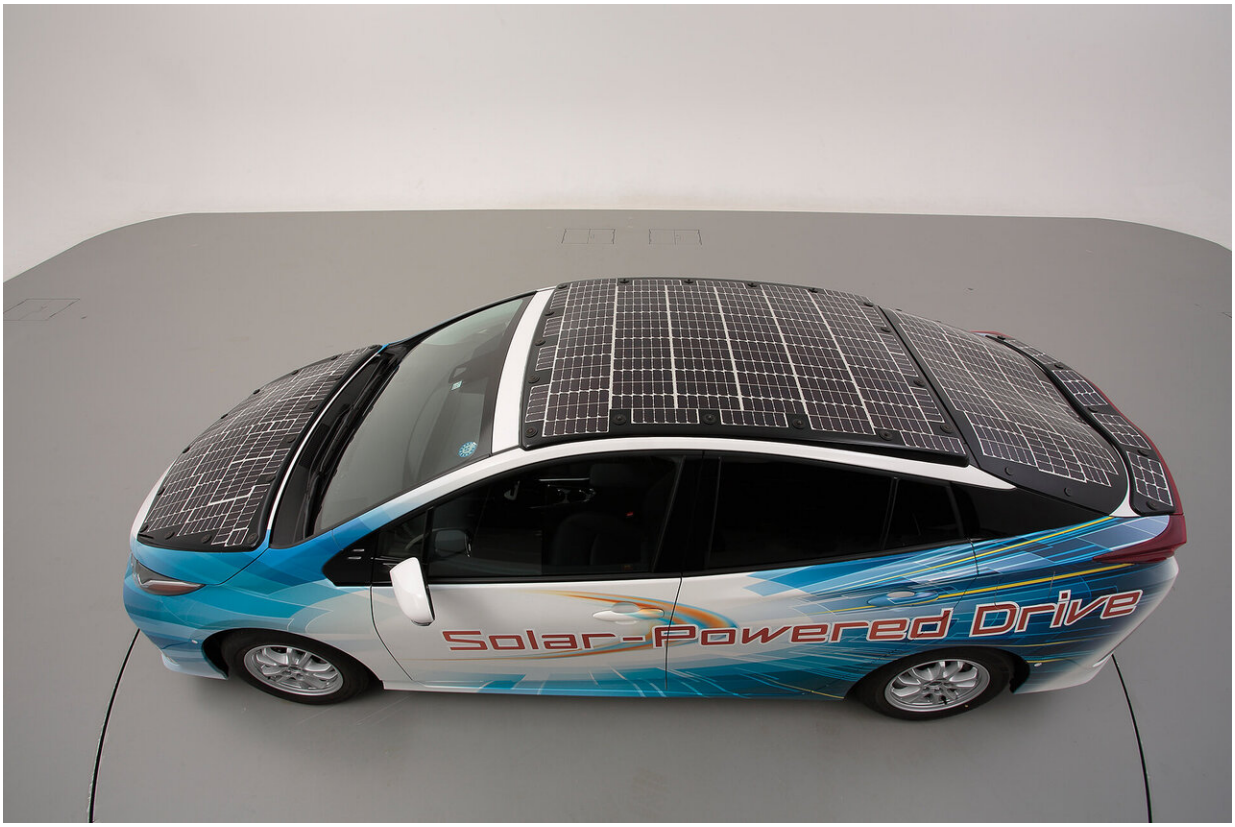

Credit: Toyota

What's not to like about this concept: high-efficiency solar cells gifting electric cars with mileage.

Bertel Schmitt, *The Drive*, said, "The solar roof could morph from mostly a marketing-device to a helpful feature." He noted that, referring

to plug-ins, "On a fair-weather day, the juice would be provided by the sun, a big improvement especially for people who don't have their own garage."

Toyota has ambitions over the concept and is to start testing an onboard solar recharging system where the hood, the roof, and back are covered with cells. The solar roof can charge while the car is on the move.

It did not escape *Interesting Engineering*'s notice that the new solar battery cell can fit a larger surface. "The solar battery cell is a thin film about 0.03 mm thick. Because it is so thin, it can fit the curves of the vehicle including the roof, hood , and rear hatch door," said the report.

Darrell Etherington, *TechCrunch*, said at center stage was the new and improved version of the solar power cells previously launched on the Japan-exclusive Prius PHV.

The Toyota news release said "the demo car employs a system that charges the driving battery while the vehicle is parked and also while it's being driven." This was seen as an interesting development expected to lead to improvements in the electric car's cruising range and fuel efficiency.

"Previously, the Prius PHV charged the driving battery only while the vehicle was parked. However, with improvements in power generation output, the demo car employs a system that charges while the vehicle is being driven. This is expected to boost the BEV-mode cruising range and fuel efficiency significantly," said Toyota.

Credit: Toyota

NEDO, which is a national research and development organization, Sharp and Toyota are to start some road trials where the electric cars will be equipped with solar batteries. NEDO and Sharp will share a selection of trial data results, said Toyota.

Those presiding over the tests are going to see the power generation output of the solar panel. Toyota City, Aichi Prefecture, Tokyo, and other areas are the sites planned for the test, where weather and driving conditions will vary.

Etherington commented that the car's prototype cells being able to

convert solar energy at 34 percent and up was better than the existing commercial version's numbers.

Reports noted the solar cells were extremely efficient. According to *The Drive*, the solar Sharp-made solar cells are of the triple-junction compound type, sporting a conversion efficiency of 34 percent, and occasionally more.

Etherington: "The new system will provide up to 44.5 km (27.7 miles) of additional range per day while parked and soaking up sun, and can add up to 56.3 km (35 miles) of power to both the driving system and the auxiliary power battery on board, which runs the AC, navigation and more."

All in all, *Elektrek* offered its take on the news:

"As we always like to point out with these solar car efforts, a car's roof is not the most ideal place to install solar cells. They would most likely be more efficient installed on the rooftop of a home and then, you can use the power to charge your vehicle. However, there's something appealing about your vehicle producing its own energy and it is starting to get more attractive with the specs Toyota is talking about now."

More information:
global.toyota/en/newsroom/corporate/28787347.html