

Nissan's Note E-Power: A Glimpse At The Hybrid Car Of The Future?



The Note e-Power delivers smooth effortless acceleration but has no plug-in function. Photo courtesy of Nissan.

With this year (2017) being the 20th anniversary of the world's first production hybrid car--Toyota's Prius--it seems only fitting that a new more efficient rethink of that original technology should surface and take us in an even cleaner direction.

Enter the Nissan Note e-Power.

It's not a pure electric car and it's not a hybrid. It's something in-between. Or at least it's not the type of hybrid that Japan has ever produced before.

The Note e-Power is what the industry calls a "series hybrid" which means, for all intents and purposes, this car is an electric car in that it runs on an electric motor which drives the front wheels. But it also has a 1.2-liter 3-cylinder gasoline engine that acts solely as a generator to charge the batteries. The engine does not drive the wheels in any way, and for Japan, that is a new concept.

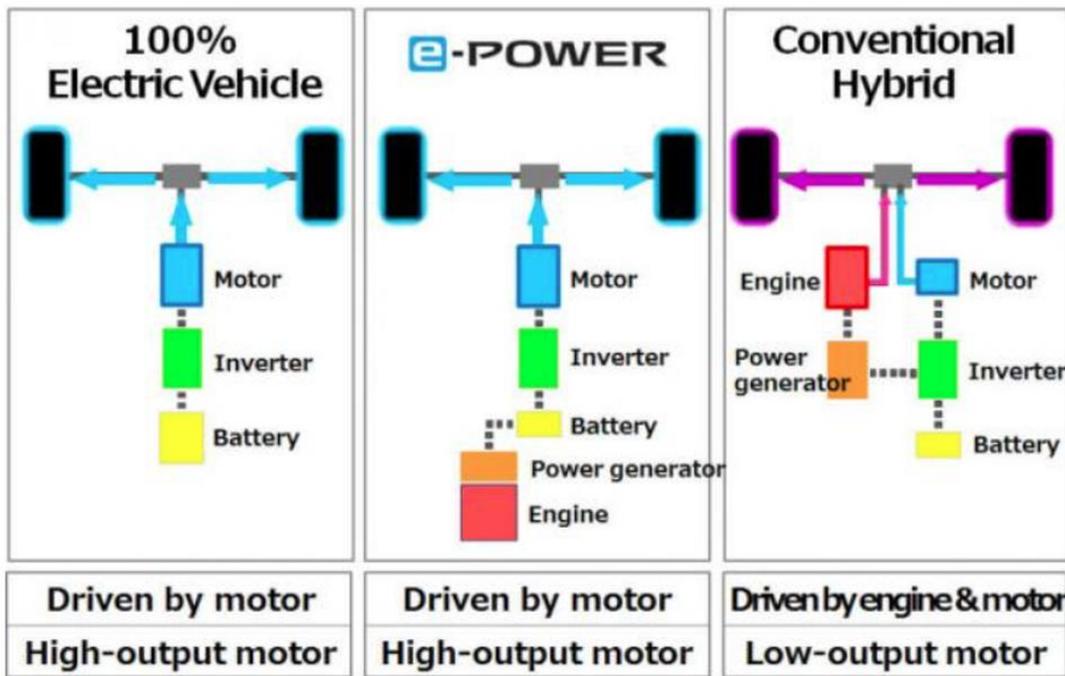


To establish just how revolutionary this powertrain is for Japan, we need to compare the e-Power to Nissan's well-known pure electric Leaf. The e-Power has a 40kW electric motor that is exactly half as potent as the Leaf's while the e-Power's 1.5kWh battery pack is 1/20 the size of the Leaf. In a car that tips the scales at just 1220kgs, the electric motor produces 109 hp and 254Nm of torque and Nissan claims the car achieves **34.0 km/litre** (or 80mpg) although in the real world, that figure would most certainly drop below **30km/litre**. And unlike other similar cars on the market, like the BMW i3, the e-Power has no plug-in facility.

Tested on roads around Nissan’s Global headquarters in Yokohama, the Note e-Power is a revelation to drive. Press the starter button and you hear, well, nothing--exactly like an EV. And just like the Leaf, the e-Power delivers smooth instant acceleration. With the motor, engine, inverter positioned low in the chassis and the batteries located under the front seats, the e-Power registers very little body roll in corners and is pleasantly stable at highway speeds.

Like the Leaf, steering is well-weighted and precise, and understeer is minimal. The regenerative brakes work effortlessly as they help charge the batteries during deceleration and the brake pedal has a progressive firmness with good rigidity. Another special feature of the e-Power is its ability to be driven with one pedal. In “normal” or “D” modes, the e-Power’s regenerative brakes operate almost identically to the brake feel of a standard gasoline car.

In “S” and “Eco” modes however, three times the braking Gs (force) of “normal” mode are made available. This means that when you take your foot off the throttle, the regenerative brakes engage powerfully to slow the car as if you were engaging the brake pedal yourself. It does take some getting used to at first, but with a little practice, you can accelerate and brake, and adjust your driving easily to traffic flow by merely regulating your footwork on and off the throttle. This style of driving will become the norm in the near future.



A comparison between pure EVs, e-Power and hybrids. Photo by Nissan.

Most of the time, the Nissan runs whisper-quiet with only the sound of the wind and tires reaching the cabin. When the batteries run down, or when air-con, headlights and wipers are used excessively, the engine will cut in and out regularly to ensure the e-Power is charged. It might only have a small capacity engine, but when it does fire to life, the sound is noticeable and sometimes unwelcome given the e-Power’s normally quiet running mode.

At present the e-Power is only available in Japan, because, as Nissan says, it was specifically designed for Japan’s urban driving habits. In the near future however, the company said that it was evaluating the potential of incorporating this powerful, fuel efficient powertrain in future models in the United States and Europe.

One Japanese commentator recently told me that within 10 years, every new car will be “electrified” in some way. Just what percentage will take the form of a pure electric powertrain, a hybrid setup or a hydrogen powered fuel cell system remains to be seen. But one thing’s for sure--Nissan electrically-driven Note e-Power is a strong contender for future powertrains.



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I focus on all things to do with cars.

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