

Pilot project to develop high-powered fast-charging plaza for electric vehicles



With Singapore's plans to switch its entire fleet of buses – numbering around 5,800 now – to [electric and hybrid buses by 2040](#), fast charging systems that can cater to high power output – over a few hundred times higher than those required by electric cars – will be required.

Current electric vehicle chargers are relatively low powered and may take many hours to fully recharge the large capacity batteries in electric buses.

The ideal scenario would be for an electric bus to fast charge during the driver's usual break time at the bus interchange and to continue the scheduled route thereafter without compromising commuter travel time, safety and comfort.

To tackle this high-power consumption during fast-charging, scientists from Nanyang Technological University, Singapore (NTU Singapore) and tech start-up Ecotech Mobility will be developing a high-power density charge and converter system for electric vehicles.

The new power system will be piloted in a first of its kind fast-charging platform called the “[High Power Energy Plaza](#)”, which can charge multiple electric vehicles quickly with its high-power DC chargers, with capacities up to 550 kilowatts (kW).

It can also support low-power applications such as charging of electric bikes, cars and light commercial vehicles.

The Plaza will be designed to operate in different urban environments, to meet both electric vehicles (EVs) and power grid requirements as well as cater to multiple configurations of EV chargers made by different brands.

This ambitious project is spearheaded by Ecotech Mobility Pte Ltd, in partnership with two NTU entities – the Energy Research Institute@NTU (ERI@N) and the EcoLabs Centre of Innovation for Energy, a joint initiative by NTU, Enterprise Singapore, and Sustainable Energy Association of Singapore (SEAS).

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