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Singapore

NTU, BlueSG trial ultra-fast charging electric shuttle



An electric tram that requires just 20 seconds to recharge - while passengers board or alight at stations - will be trialled at the Nanyang Technological University (NTU) campus for the next six months.

SINGAPORE: An electric tram that requires just 20 seconds to recharge - while passengers board or alight at stations - will be trialled at the Nanyang Technological University (NTU) campus for the next six months.

The trial was launched on Monday (Jan 22) by NTU and BlueSG, the same company that started an electric car-sharing scheme last year.

Dubbed Singapore's first flash-charging electric shuttle, the Bluetram can travel 2km on a single charge, with backup power that provides for an additional 30km.

The 22-seater tram will run between JTC's CleanTech One and NTU's North Hill area, a distance of close to 1km.

As the vehicle stops along each station along the route, a robotic arm will emerge from the station, insert itself into the charging port and charge the super-capacitor in the vehicle.



The charging arm that charges the Bluetram's super-capacitor. (Photo: Gwyneth Teo)

NTU and BlueSG said the super-capacitor is 10 times more efficient than lithium-ion batteries in discharging power, but holds power for a proportionally shorter length of time.

It is thus ideal for vehicles that do short sprints with lots of starts and stops.

Dr Subodh Mhaisalkar, Executive Director of Energy Research Institute @ NTU, said: "We look at vehicles like these for first- and last-mile transportation, such as feeder bus services."

He added that the vehicles may be a game-changer in transportation here. "These can go indoors. These can go into the foyer of a building, the lobby of hospitals, into the airport. It brings up new possibilities in public transportation."

The vehicles had previously been trialled at the 2015 United Nations Climate Change Conference in Paris, where six trams ran across seven stations up and down the Champs-Élysées.

As the NTU campus has more hilly terrains compared to the relatively flatter Champs-Élysées, the trial will allow the tram's makers to test its performance on various terrains.

Additionally, the data collected will let scientists understand how the super-capacitors might react to different climate conditions, and what impact a larger roll-out of these vehicles will have on power grid infrastructure.

"For example, if there are hundreds of buses and taxis charging in a small area, we need to understand what impact it will have on the grid. The grid stability and reliability are things we cannot compromise," said Dr Subodh.

Source: CNA/ng

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