electreon

Charging the way forward

Tel Aviv University Station Project, Israel

Period:
2020 - 2022

Transport Operator:
Dan Bus Company

OEM Partner:
HIGER

Project Sponsor:
Tel Aviv-Yafo Municipality

Additional Partners:

Ayalon Highways, Israel Innovation Authority, Ministry of Transport & Road Safety, Ministry of Energy

Size:

700 meters of wireless Electric Road for dynamic charging of e-bus, as part of a 5 km (3.1 mi) route between university bus terminal and railway station, with additional static wireless charging at the station

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In September 2020, the Tel Aviv-Yafo Municipality, in partnership with Electreon and the Dan Bus Company, and with financing from the Israel Innovation Authority and Israel's Ministry of Transportation, initiated construction on a pilot project to install Electreon's wireless Electric Road System technology to charge public transportation in the city.

The pilot, which has been operational since March 2021, is the first of its kind in Israel and charges an electric Dan bus with 42 kWh supercapacitor technology, which is a nearly 90% reduction in the bus's regular battery size of ~ 400 kWh.

The bus operates a line between the Tel Aviv University Railway Station and Klatzkin Bus Terminal in Ramat Aviv – a 5 km (3.1 mi) round-trip route that includes 700 meters of wireless Electric Road for dynamic wireless charging. The Railway Station is also equipped with a stationary wireless charging station to enable the bus to charge between trips.

With this unique combination of both dynamic wireless electrified road segments installed along approximately 14% of the bus route and stationary wireless charging at the railway station, the e-bus is able to receive top-up charging at regular intervals throughout its daily operations. This reduces vehicle charging downtime and enables extended operational hours without the need for large, heavy, and expensive batteries to carry more energy throughout the day. Charging occurs seamlessly in the background, resulting in no interruption to the e-bus's workflow. The e-bus's charging schedule is designed to be spread along the route, at two different locations, so the vehicle's power demand is spread throughout the day as well. This decreases energy costs and significantly minimizes the need for overnight charging.

The execution of this pilot project is part of a municipal policy supporting the introduction of electric vehicles and reducing air pollution in the city. The construction of a wireless Electric Road to charge public transportation vehicles made Tel Aviv-Yafo the first city worldwide to roll out this technology for charging buses on a large scale. By having this wireless charging technology in place on public roads, the city continues to evaluate the possibility of adding additional electric fleet vehicles, including public transportation, distribution trucks, and private and autonomous vehicles, to the charging infrastructure.

Meital Lehavi, Deputy Mayor for Transportation at the Tel Aviv-Yafo Municipality, has stated, "Electric transportation will assist municipal efforts to reduce air pollution and noise, and assist the transition to green modes of transport, which will contribute to improving the quality of life and the environment for residents and visitors to the city. We have no doubt that, if the wide-scale experiment is successful, it will not only benefit the public, but also save resources, improve the operational efficiency of public transportation, and maybe even a new world-class method of electrification will emanate from Tel Aviv-Yafo."