

Sweden tests world's first electrified road

Sweden is testing the first road of its kind that can charge a vehicle as it drives along. The state-funded scheme, named eRoadArlanda, could potentially help cut the high cost of electric cars

HOW IT WORKS: Conductive technology transfers energy to vehicle from rail embedded in road

Arlanda airport

Rosersberg depot

3km
2 miles

SWEDEN

Stockholm

Conductive rail

Connected to power grid

eRoadArlanda: 2km of public road 893 on outskirts of Stockholm

Energized road

Rail divided into sections – each section is powered only when vehicle is above it

Movable contact arm

Detects location of rail in road. Arm retracts while vehicle is overtaking

ELECTRIC VEHICLE

Modified mail truck

Battery

Recharged as vehicle moves along road

Charger

Rail earthed at surface to prevent electric shocks – conductor buried below ground

Wheel hub motors

System calculates energy consumption, enabling electricity costs to be debited per vehicle

Charging while driving could allow for smaller batteries, making electric cars cheaper