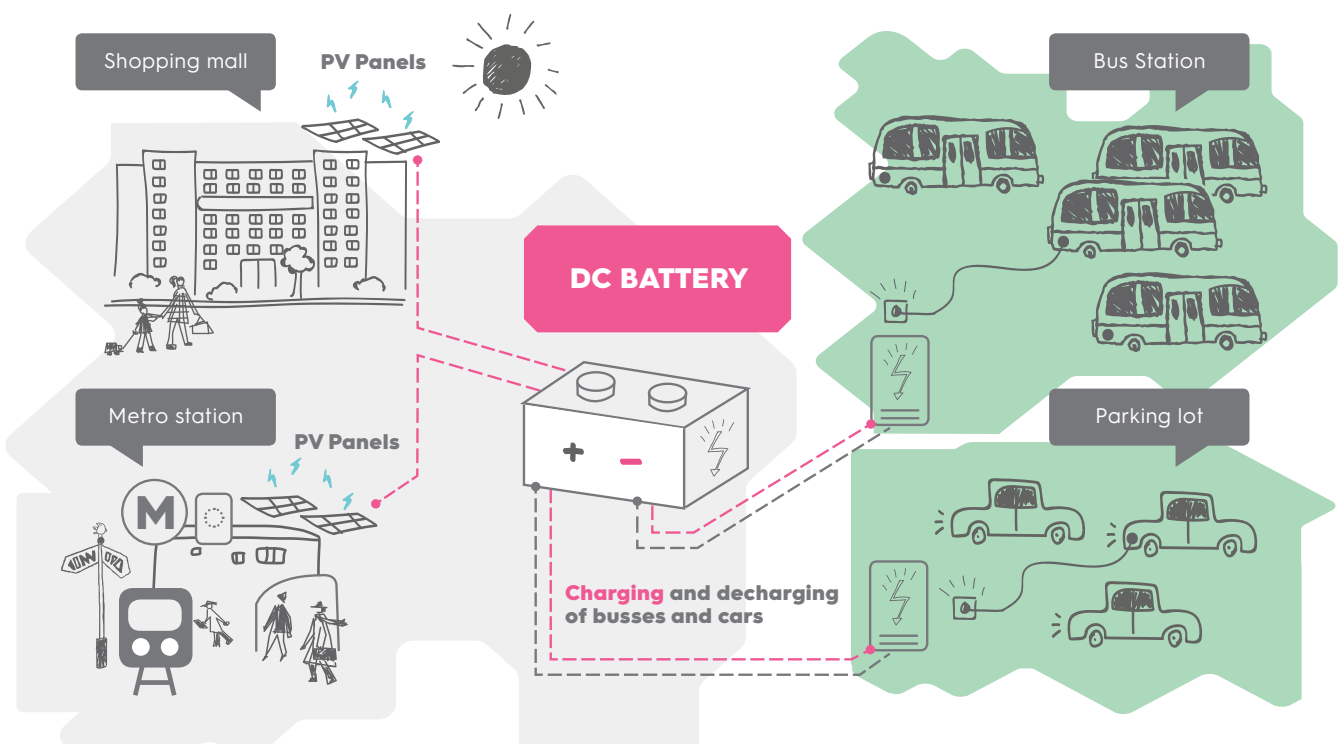


## DC grid, PV and storage for mobility and smart-charging parking spaces

Rotterdam

Smart electricity grid and e-mobility



The aim of this smart solution is to minimise and optimise the usage of electricity and avoid peak load demands in the electrical network, by using photovoltaic (PV) panels. Private electric cars that are parked in parking spaces in the Heart of South district will then be able to charge with electricity coming from the PV panels connected to charging poles through an electric direct current (DC) grid.

### Main partners involved:



## FACTSHEET R5+R6

# DC grid, PV and storage for mobility and smart charging parking lots



### How does it work?

The use of solar panels is widespread. Within the Heart of South district we try to install as many PV panels as possible on the roofs of the buildings. The solar heat is transformed into DC-energy (direct current electricity) and will be stored in a DC battery. All electric busses can get their electricity power from loading poles, connected to the battery by means of an electric DC grid.

In addition, private electric cars which are parked in car parks in Heart of South will be charged with electricity from the electric grid. Therefore loadings poles will be placed on the AHOY parking lot and in the parking garages beneath the shopping centre.

The effort within RUGGEDISED is to realise bi-directional loading poles that can charge and 'decharge' buses and private vehicles.

All parts will be connected to be one smart electric grid.

### Estimated impacts

By making the bus fleet more sustainable and installing innovative charging infrastructure in the south of Rotterdam, this knowledge can and will be used in the rest of the public transport domain of the RET. In total, about 270 conventional buses will be replaced. This should result in an improvement of the air quality in the entire city and region, as well as a reduction of about 20-25% to the carbon foot print of RET operations.

### Replication potential

Other cities can learn from the scenarios RET is able to develop with the new planning software. Furthermore, the relationship between input of e-bus operation parameters with the output in a schedule could be very useful for other European cities that are also planning to replace their diesel bus fleet for zero-emission buses.

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[www.ruggedised.eu](http://www.ruggedised.eu)

