

Spread the seeds for a resilient city with Homegrown Energy



Keep it Local

An initiative of the  European Commission

Utrecht Energized

Utrecht relieves its grid through an innovative car-sharing scheme

Utrecht is turning shared electric cars into mobile batteries. A privately operated vehicle-to-grid (V2G) fleet charges when renewable power is plentiful and can return electricity when demand rises. The city does not own the fleet or the technology. It convened the partners, shaped local rules and permits, and gave the initiative political backing - showing how municipalities can unlock flexibility without becoming the project operator.



Photo: Ana Fota

The challenge

Utrecht's desire to expand local solar production and electric vehicle use created a new problem: with solar panels on roofs, sunny hours can bring more electricity into the local grid than the city can use. Rapid electric-vehicle uptake could add another charging peak. From the start, the project therefore intended to respect the grid's physical limits and use vehicles as a flexible resource rather than an extra burden.

Utrecht | The Netherlands

378,140 inhabitants

Readiness level:
Operational



Energy sector:

☒ Electricity ☒ Mobility

Type of infrastructure:

☒ Charging points

Energy activity:

☒ Storage ☒ Local Flexibility

Who was in lead:

We Drive Solar, with the Municipality of Utrecht as facilitator

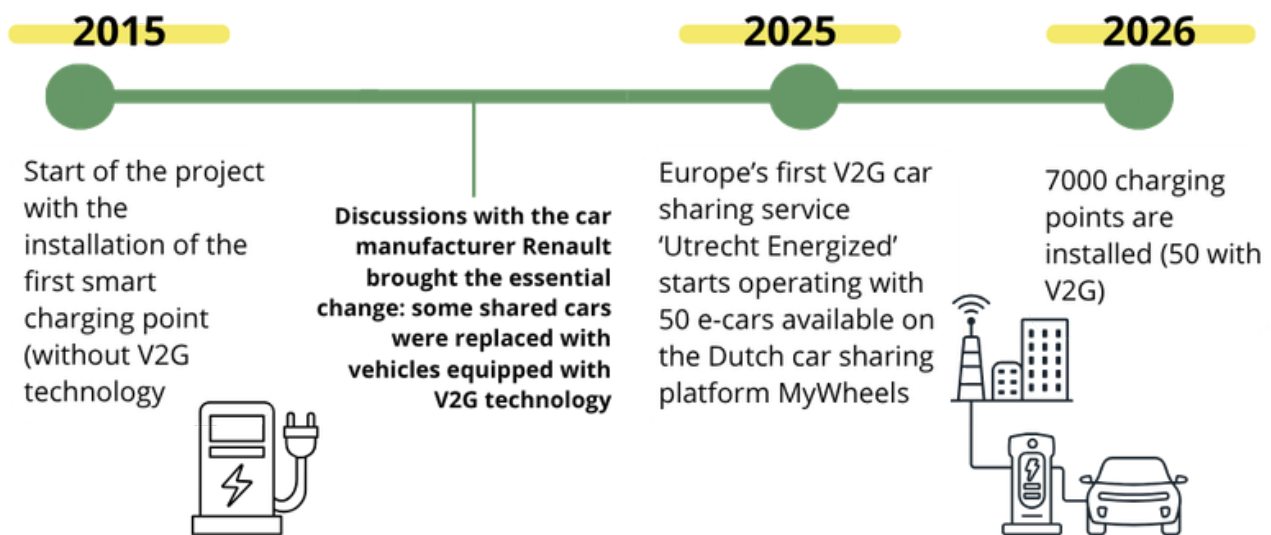
Key partners:

- Private partners such as Renault Group, MyWheels, DSO Stedin and energy/charging partners

The local solution

A citizen-led idea began in 2015 with Utrecht's first smart charging point. The municipality helped bring together the distribution system operator (DSO), car manufacturers, a car-sharing platform, an electricity supplier and charging specialists. That cooperation has grown into Utrecht Energized: a privately operated, large-scale V2G car-sharing service.

When local renewable generation is abundant or electricity prices are low, the shared cars charge. When the grid is under pressure, connected vehicles can feed stored electricity back. A digital platform links cars, chargers and grid, manages energy flows and transactions, and keeps enough charge available for the next booking.



Implementation insights

The key was to treat grid capacity as a design condition from day one - not as a problem to address after the cars and chargers were already in place. The city tested different partners and technical solutions at neighbourhood level to avoid depending on one single manufacturer or technology. Negotiating with charging providers required new expertise: The municipal staff learned on the go and through direct work with private partners, the grid operator and other cities. Most coordination skills were already present inside the municipality.

Support from the mayor's office, easy access to the right municipal teams and a shared willingness to solve problems created trust and made this multi-stakeholder collaboration work.

Role of the municipality and partners

The municipality of Utrecht acted as a facilitator.

- Assigned staff from different services to work across departmental boundaries.
- Connected the citizen initiator with the DSO, manufacturers, mobility and charging companies, the electricity supplier and relevant municipal teams.
- Used local parking rules and the public-charging concession to require V2G-ready charging stations.
- Provided political backing, permits and a trusted meeting ground for private partners.
- Used European projects and advocacy to support testing, interoperability and a more enabling regulatory framework.

Grid operator assessed network impact and provided data

Fleet & technology: private partners Renault, MyWheels, We Drive Solar and energy partners deliver the car-sharing service

What was harder than expected

- Implementing a highly specific new technology while avoiding dependence on a single charging provider.
- Getting timely, usable grid data for planning and testing.
- Navigating tax and grid-fee rules that can charge electricity once when a car stores it and again when it is discharged.



What changed in practice?

- **The city is less dependent on the national grid: More local flexibility**, helping absorb midday solar production and reduce pressure during demand peaks.
- The service launched in 2025 with **50 bidirectional shared electric cars** and is scaling to a total of 500 vehicles and chargers with V2G technology.
- **Around 5 MW of congestion relief:** at full scale, the fleet is expected to provide about 10% of the flexibility needed in the Utrecht region at peak times.



Conditions to grow something similar in your place!

- Try to act instead of waiting for the DSO to provide more grid capacity
- Start with neighbourhood-scale tests, keep options open and plan inclusion from the beginning.
- Support V2G-ready infrastructure with local permits, parking rules and charging concessions



- [City of Utrecht](#)
- [Renault Group - Utrecht Energized](#) | [MyWheels - mobile neighbourhood battery](#)

Homegrown Energy

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