



Dutch resort uses solar-powered containers for bidirectional charging





Overview

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Facing €2 million grid upgrade costs for new fast-charging hubs near Amsterdam, Dutch innovators deployed a deliciously clever fix: modular EV Charging BESS Container Buffers. The 2025 ElaadNL trial used 750kWh battery containers (2C discharge) to absorb off-peak and solar power, dynamically.

Truly 'green' Electric Vehicles (EVs) require renewables for charging. Hence, we have developed a bidirectional smart charging station for EVs with integrated solar electricity generation, increased efficiency and reduced costs. How?

The EVs are directly charged from PV panels on Direct Current.

Batteries not only power electric cars, but can supply energy to buildings and stabilize power grids, through bidirectional charging. Electric cars boast increasingly powerful batteries that are charged from the energy grid or rooftop solar systems. But when the car isn't in use, its battery can.

But Utrecht has now launched the real-world operation of a significantly larger initiative – starting with 50 bidirectionally charging EVs, with a target of 500. What is the Dutch company doing that others aren't?

We went to see for ourselves. It looks like an ordinary public charge point on Jan.



Bidirectional charging allows an electric vehicle to both charge its battery from the electrical grid and discharge energy back to the grid or another electrical system. This capability will not only enable emergency backup power for homes and businesses but also allow users to alleviate grid.

The SSC project allows residents and visitors to get around Utrecht with an electric car-sharing scheme that can feed electricity back into the grid. In the Dutch city of Utrecht, people are trading in their privately-owned cars and opting for a car-sharing scheme that is user-friendly and better. Will bidirectional charging increase solar storage capacity?

Solar-plus-storage system adoption is rising, particularly in California and Hawaii, driven by net metering policy changes encouraging energy self-consumption. Given the right energy management solutions, bidirectional charging, or V2X, could add significant storage capacity for these systems.

Does Utrecht have a charging station?

Utrecht's model relies on private infrastructure available only to its Renault 5 vehicles. Although these are charging stations in public spaces, they are exclusive. Only the bidirectional electric cars in the MyWheels fleet can charge at the special charging stations from We Drive Solar.

What is bidirectional charging?

Bidirectional charging allows an electric vehicle to both charge its battery from the electrical grid and discharge energy back to the grid or another electrical system. This capability will not only enable emergency backup power for homes and businesses but also allow users to alleviate grid strain and reduce energy costs.

Does bidirectional charging add storage capacity?

Given the right energy management solutions, bidirectional charging, or V2X, could add significant storage capacity for these systems. In addition, pairing a V2X system with stationary batteries can improve overall system efficiency and provide a more seamless transition of the home to backup mode.



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'Utrecht Energized' launched: How bidirectional charging is set to ...

In recent weeks, We Drive Solar and partner MyWheels installed the first 50 bidirectional charge points and integrated 50 Renault 5 E-Tech Electric vans into the ...

[Unleashing the Potential of Bidirectional Vehicle Charging](#)

Solar-plus-storage system adoption is rising, particularly in California and Hawaii, driven by net metering policy changes encouraging energy self-consumption. Given the right ...



Renewable energy easily shared in the Netherlands thanks to smart solar

The Utrecht district of Lombok is internationally known for its innovative Smart Solar Charging bidirectional e-car sharing system. This project further develops, tests and upscales this ...

[Renewable energy easily shared in the ...](#)

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Dutch Grid Dodge: EV Charging BESS Container Buffers Save EUR2M

A 100 kWp solar array (mounted on the charging canopy) harvests peak Dutch sunshine, injecting ~400 kWh daily into the BESS container - enough for 6 EV top-ups.



Solar-powered charging station

Truly 'green' Electric Vehicles (EVs) require renewables for charging. Hence, we have developed a bidirectional smart charging station for EVs with ...



[Bidirectional charging: The future of e-mobility](#)

Discover how bidirectional charging is revolutionizing energy use and what role it plays in the future of electric mobility.



[Bidirectional Charging and Electric Vehicles for ...](#)



Bidirectional electric vehicles (EV) employed as mobile battery storage can add resilience benefits and demand-response capabilities to a site's ...



[Electric Vehicle supported PV Smart grid](#)

The EV-PV project has developed the world's first solar-powered direct vehicle to grid (V2G) electric vehicle (EV) charger. The charger enables direct DC charging of EV from PV without ...



[Dutch firm to debut bidirectional EV charging demo ...](#)

Dutch mobility scale-up We Drive Solar will debut its large-scale live demonstration of bidirectional electric vehicle (EV) charging at ...



[How EVs can store energy for homes and power grids](#)

With a bidirectional charging station, solar power can flow from the roof of a house into the car battery during the day, and back into ...



Bidirectional Charging and Electric Vehicles for Mobile Storage



Bidirectional electric vehicles (EV) employed as mobile battery storage can add resilience benefits and demand-response capabilities to a site's building infrastructure.



[How EVs can store energy for homes and power grids](#)

With a bidirectional charging station, solar power can flow from the roof of a house into the car battery during the day, and back into the building from the car in the evening. This ...

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[Bidirectional charging: The future of e-mobility. SMA Solar](#)

Discover how bidirectional charging is revolutionizing energy use and what role it plays in the future of electric mobility.



Dutch firm to debut bidirectional EV charging demo at global event



Dutch mobility scale-up We Drive Solar will debut its large-scale live demonstration of bidirectional electric vehicle (EV) charging at the upcoming EVS38 symposium in Gothenburg.



[Unleashing the Potential of Bidirectional Vehicle ...](#)

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