

KOSTAL<sup>ize</sup>

your mobility

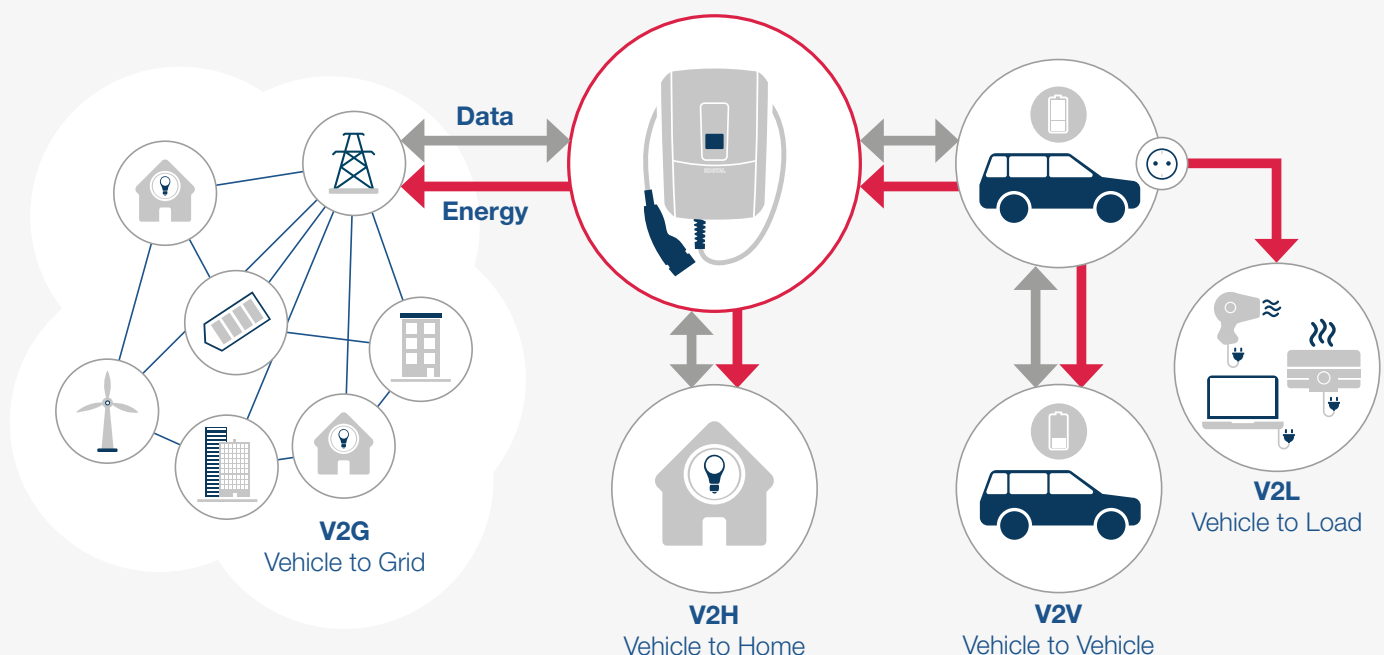
**BDC RESEARCH PROJECT****V2X: Energy works  
bidirectionally****KOSTAL technology for a new mobility –  
11kW DC bidirectional charging**

The bidirectional wallbox turns the e-vehicle into a mobile energy storage device that can charge renewable electricity into the vehicle and also feed it back into the grid.

**V2G:** With Vehicle-2-Grid, the electricity from the car is fed into the public grid.

**V2X:** Thanks to bidirectional charging, the electric vehicle becomes a mobile electricity storage unit and will enable a wide range of application scenarios in the future.

**V2H:** With Vehicle-2-Home, remaining energy from the car is fed directly into the home electricity network.



## Bidirectional charging management – BDC with KOSTAL and BMW

### Aim of the project:

Development of new technologies and systems to make electromobility more convenient, cheaper and with lower emissions for users.

### Results:

- ✚ Establishment of a reliable overall system and high assurance of mobility needs.
- ✚ PV self-consumption optimisation through reduction of grid consumption and PV feed-back
- ✚ Revenues in intraday trading by exploiting the price differences between charging and discharging times
- ✚ Electricity cost savings through peak shaving and increasing full load hours

## Technical information

Description	
Installation	wall mount, pedestal
Number of charge points	1
Dimensions (H * W * L) mm	560 * 410 * 230 (in mm)
Weight	ca. 25kg (incl. Charging cable CCS 2)
Protection class	IP54, for outdoor application, IP65, possible
Operating temperature	-25 ... +40 °C (+60°C with derating)
Electrical specification	
Max. Input connection AC	3 phase 400V, single phase 240V, 3 phase 240V 60Hz IEEE 1547
Max. Charging power	11kW (330V, 32A), 7,4kW (single phase) Power can be limited during installation
Charge connector	Cable 5m with CCS 2 connector IEC 62969
Charge mode	Mode 4 CCS acc. to IEC 61851-1
Safety protection	<ul style="list-style-type: none"> <li>✚ DC Isolation failure detection</li> <li>✚ Overload protection when connected to grid meter</li> <li>✚ Undervoltage detection</li> <li>✚ Underfrequency detection</li> <li>✚ Sub panel installation: line protection, residual current device type A</li> </ul>
Functions	
Charge mode	<ul style="list-style-type: none"> <li>✚ Normal charging: max. EV charging power</li> <li>✚ Bidirectional charging: control via local energy manager (site control) or remote manager</li> <li>✚ Communication EVSE-EV ISO 15118-20 upon request ISO 15118-2 VAS</li> </ul>
HMI	4 LED multi colour for different status feedback
Power measurement	<ul style="list-style-type: none"> <li>✚ internal power measurement</li> <li>✚ optional: certified DC MID meter for payment and reimbursement acc. to local requirement</li> </ul>
Authentication	RFID ISO 14443 a+b, Plug&Charge acc. to ISO 15118
Communication	<ul style="list-style-type: none"> <li>✚ MOD BUS TCP for local energy management</li> <li>✚ OCPP 2.0.1 remote via GSM or ethernet</li> <li>✚ IEEE 2030.5 remote via GSM or ethernet</li> <li>✚ EEBus local via ethernet</li> <li>✚ WiFi interface</li> </ul>
DER performance	acc. to VDE AR N 4105 (V2G and V2H)

Subject to technical changes.

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