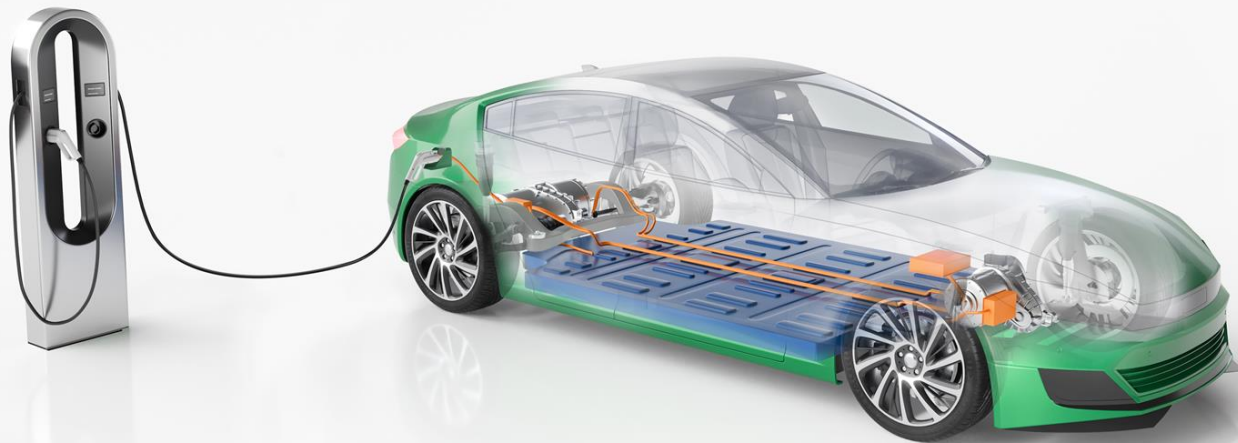


DEKRA North America



EV CHARGING TESTING CAPABILITIES


March 5, 2024

California takes action: ViGIL Lab – CEC Grant

The California Energy Commission "CEC" has converted the recent EO into a Grant Award for a **Vehicle-Grid Innovation Lab (ViGIL)** and has recognized DEKRA as the most capable supplier for the testing and certification of EV Chargers. The purpose of this grant award is to increase the capacity and throughput of electric vehicle supply equipment standards testing at a 3rd party laboratory.


Governor of California Executive Order "EO" No. 79-20 – 23 September 2020

California Energy Commission
Clean Transportation Program
GFO-20-610
Vehicle-Grid Innovation Lab (ViGIL)
Notice of Proposed Awards
October 14, 2021




Proposed Awards

Proposal Number	Applicant	Project Title	Funds Requested	Proposed Award	Match Amount	Score ¹	Recommendation
2	DEKRA Certification, Inc.	DEKRA Vehicle-Grid Innovation Lab (DEKRA ViGIL)	\$1,970,459	\$1,970,459	\$1,970,459	84.81%	Awardee
Subtotal			\$1,970,459	\$1,970,459	\$1,970,459		



CALIFORNIA ENERGY COMMISSION



NOTICE OF PROPOSED AWARDS
Grant Solicitation, GFO-20-610
Vehicle-Grid Innovation Lab (ViGIL)

October 14, 2021

On May 21, 2021, the California Energy Commission (CEC) released a Grant Solicitation and Application Package entitled "Vehicle-Grid Innovation Lab (ViGIL)" under the Clean Transportation Program. This grant solicitation was an offer to increase the capacity and throughput of electric vehicle supply equipment standards testing at a California based facility.

The grant solicitation announced a total of \$2 million available for the agreement(s) resulting from this solicitation, which may support expansion of testing of both light-duty and medium- and heavy-duty electric vehicle charging equipment. In accordance with the solicitation, the CEC, at its sole discretion, reserves the right to increase or reduce the amount of funds available.

The attached table, "Notice of Proposed Awards", identifies each applicant selected and recommended for funding by CEC staff and includes the amount of recommended funding and score.

Funding of proposed projects resulting from this solicitation is contingent upon the approval of these projects at a publicly noticed CEC Business Meeting and execution of a grant agreement. The CEC reserves the right to negotiate with applicants to modify the project scope, the level of funding, or both. If the CEC is unable to successfully negotiate and execute a funding agreement with an applicant, the CEC, at its sole discretion and in addition to all of its other rights, reserves the right to cancel the pending award and fund the next eligible application.

This notice is posted on the CEC's website at <https://www.energy.ca.gov/funding-opportunities/awards>.

Questions and debriefing requests should be directed to:
 Marissa Sutton, Commission Agreement Officer
 California Energy Commission
 715 P Street, MS-18
 Sacramento, California 95814
 Email: Marissa.Sutton@energy.ca.gov

energy.ca.gov
1516 9th Street, Sacramento, CA 95814



DEKRA ViGIL Capabilities

Current and future capabilities



Current Services:

- Testing of level 1 and 2 AC charger and level 3 DC charger with CCS Type 1 connector
- Full functional, conformance and interoperability testing CP/PP SAE J1772 and SAE J2593
- Full ISO 15118-2 and ISO 15118-3 compliance and interoperability testing for EVSE for supporting AC and DC charging mode and external means of communication (EIM) and Plug and Charge (PnC)
- DIN SPEC 70121 (SAE J2847)

Current Services:

- OCPP 2.0.1 certification testing for CSMS and EVSE
- OCPP 1.6 certification testing
- Power quality testing SAE J2894 for AC and DC charger
- NIST HDBK 44 section 3.40
- UL 2202 and UL 2594 – Safety
- UL 2231-1/2 – Safety and EMC
- FCC related testing

Planned Services:

- Bidirectional charging testing ISO 15118-20 (pre-testing available)
- California rule 21 testing of bidirectional AC and DC charger (2024 onwards)
- Grid-code compliance testing (2024 onwards)
- SAE J3072 conformance testing (Bidirectional AC on board charger)
- NACS adaptor testing

Environmental Services for EVSE

International standards and customized test plans



SERVICES:

- Temperature
- Humidity
- Altitude
- Vibration
- HALT
- HASS
- Drop impact
- Thermal shock
- Salt spray corrosion testing



CAPABILITIES:

- (19) Reach In chambers- majority with Humidity
- (1) Walk In chamber
- (1) Large Thermal Shock
- (9) Reach in Thermal Shock
- (6) Vibration tables from 2,000-13,000lbf in size all with Temp chambers
- (2) Altitude Chambers
- (2) Salt Fog
- (1) Cyclic Corrosion
- (1) HALT/HASS chamber

EVSE/EV Interoperability with manipulated EV/EVSE

Ensuring the e-mobility customer enjoys a seamless “plug and charge” experience

Charging Station Under Test



ISO 15118-2/3
IEC 61851-1
IEC 61851-23
DIN 70121
SAE J1772

Safety
DC 1000V / 600A 360 kW
AC 240V / 80A



DC 360 kW

Simulation of standard compliant AC/DC EVSE

Security



Interop

DC 1000V/ 40A / 20 kW
AC 400V / 32A / 22 kW



AC 90 kW

CCS Type 1 AC



CCS Type 2 AC



GB/T AC



CCS Type 1 DC



CCS Type 2 DC



GB/T DC



CHAdeMO

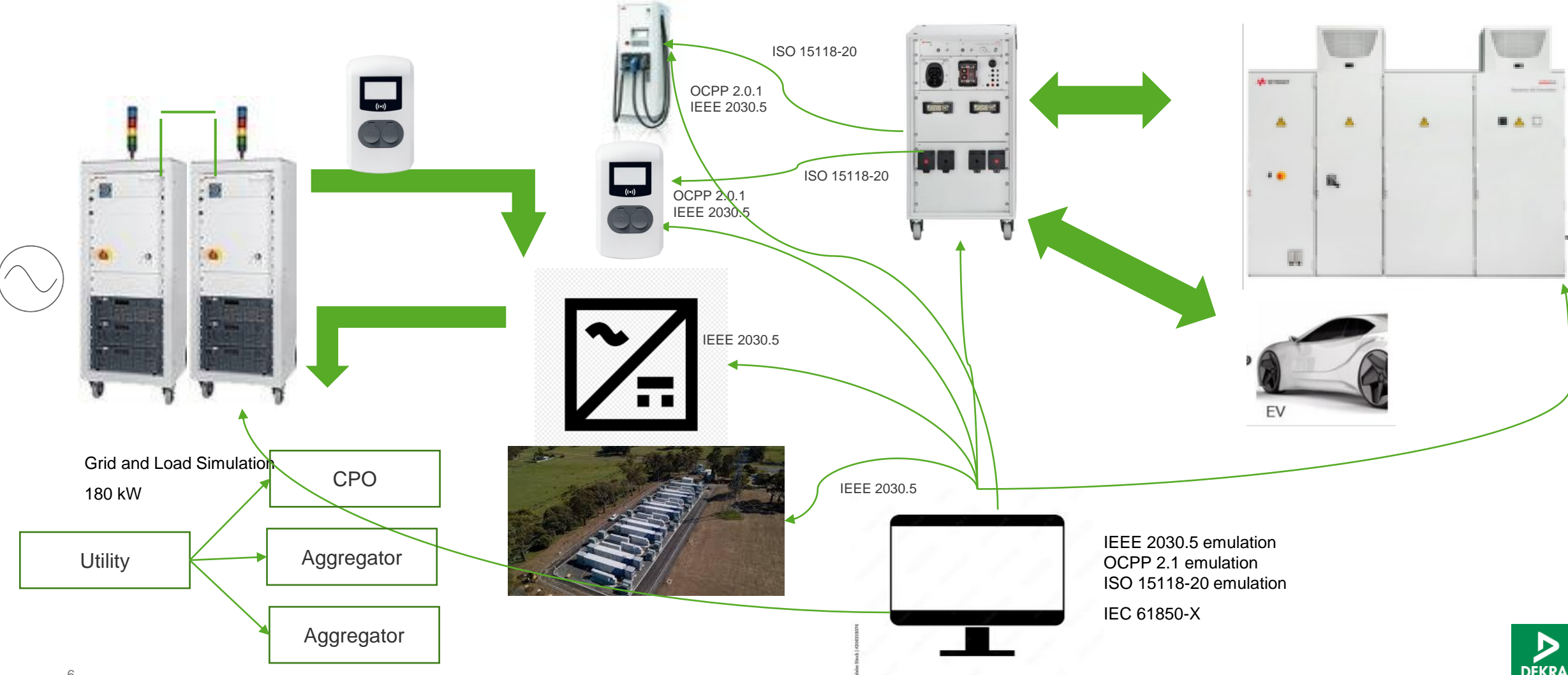


Bidirectional Charger / Inverter /EESS end to end testing

Fully automated Grid compliance testing IEEE 1547 / EN 50549-10 supported by safety testing for UL 1741 / IEC 62909 / IEC 61851

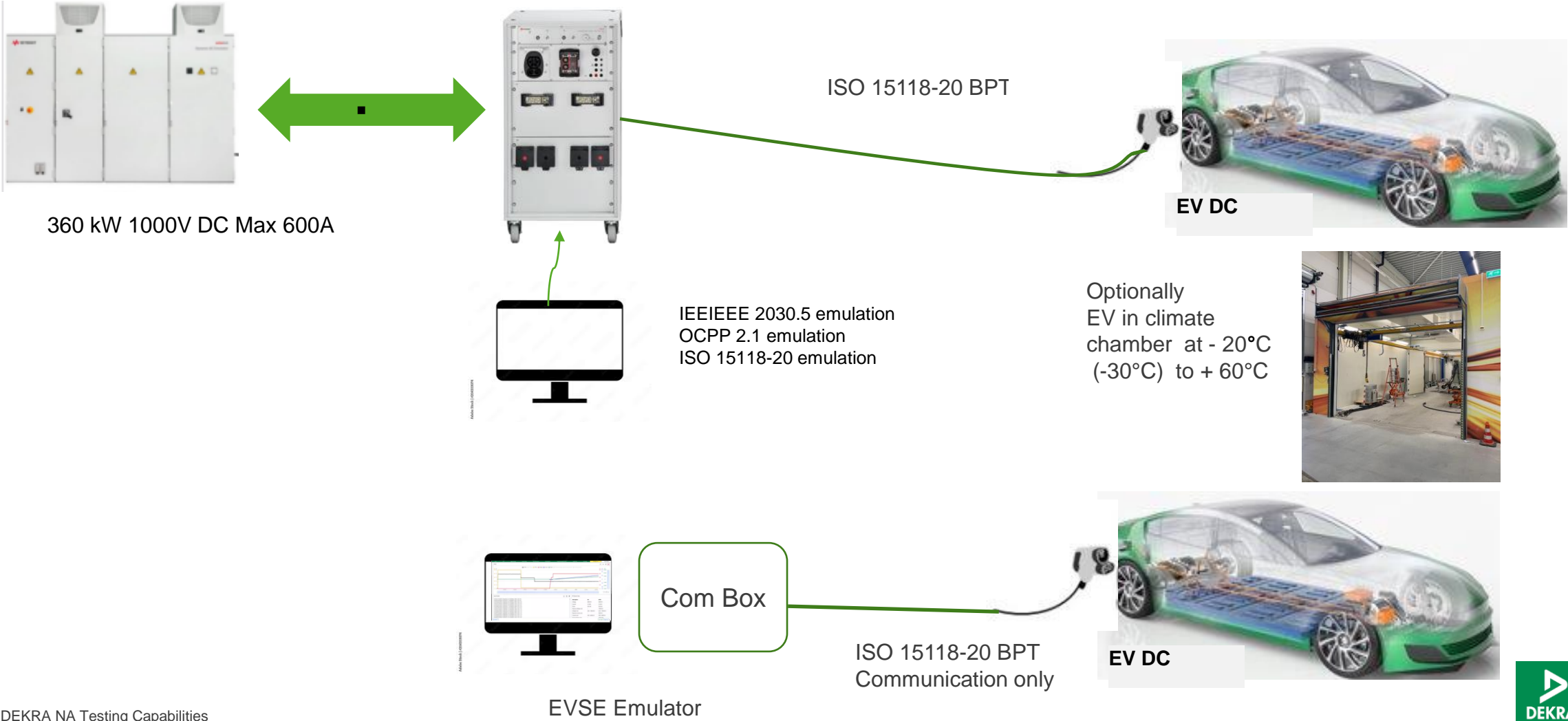
End to end compliance testing supply device (EVSE, EES, Inverter) by either IEEE 2030.5 or OCPP or ISO 15118-20 controlled by one control PC

360 kW 1000V DC Max 600A



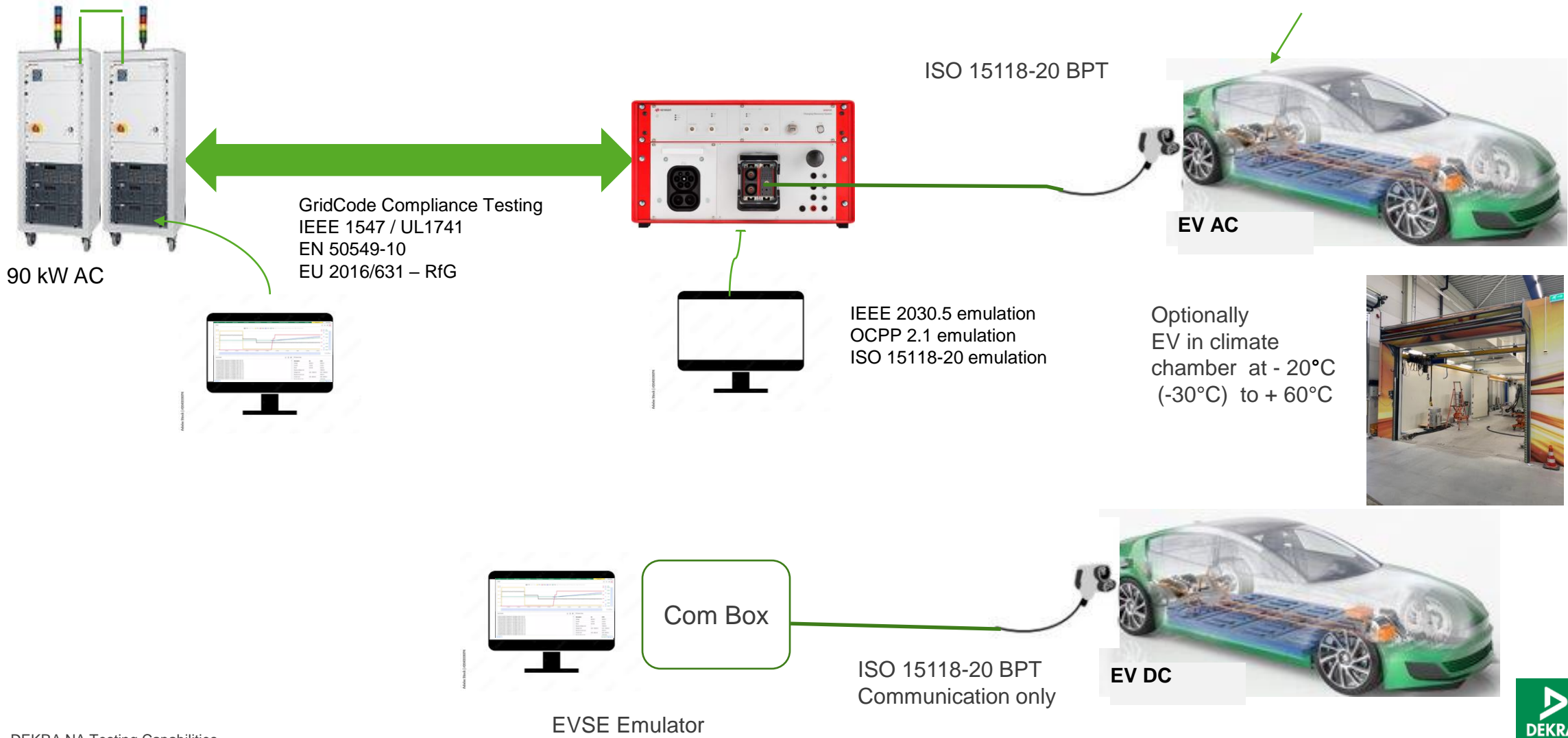
ISO 15118-20 Bidirectional EV Testing

DC with or without power flow



ISO 15118-20 Bidirectional EV Testing

AC with or without power flow



90 kW AC

GridCode Compliance Testing
IEEE 1547 / UL1741
EN 50549-10
EU 2016/631 – RfG

ISO 15118-20 BPT

Onboard inverter

EV AC

IEEE 2030.5 emulation
OCPP 2.1 emulation
ISO 15118-20 emulation

Optionally
EV in climate
chamber at - 20°C
(-30°C) to + 60°C

Com Box

ISO 15118-20 BPT
Communication only

EV DC

EVSE Emulator



ISO 15118-20 Bidirectional EVSE Testing

AC with or without power flow



90 kW AC



Anti islanding emulation
Disconnect protection
Grid fault



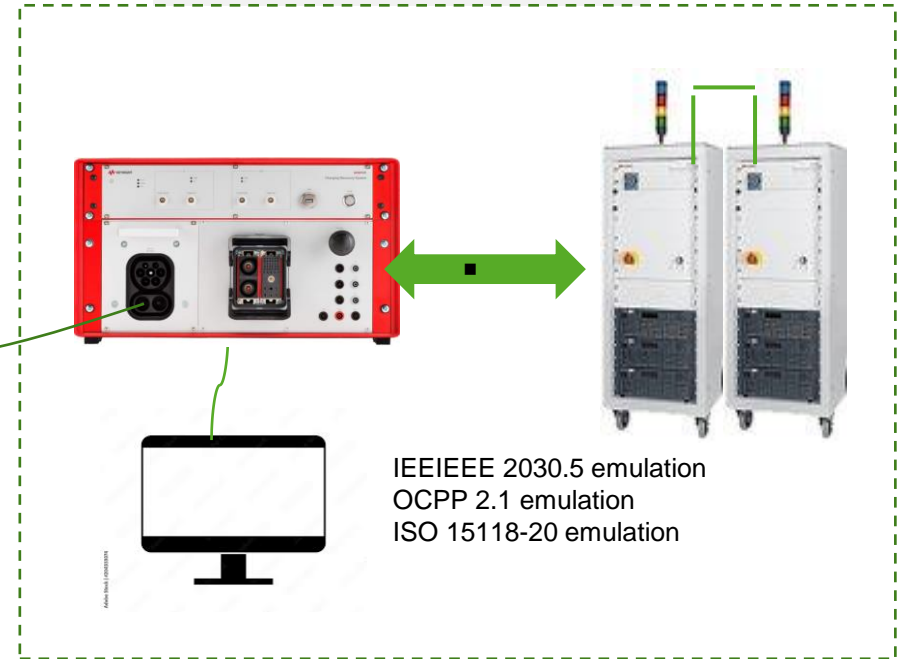
ISO 15118-20 BPT

Optionally
EVSE in climate
chamber at - 20°C
(-30°C) to + 60°C

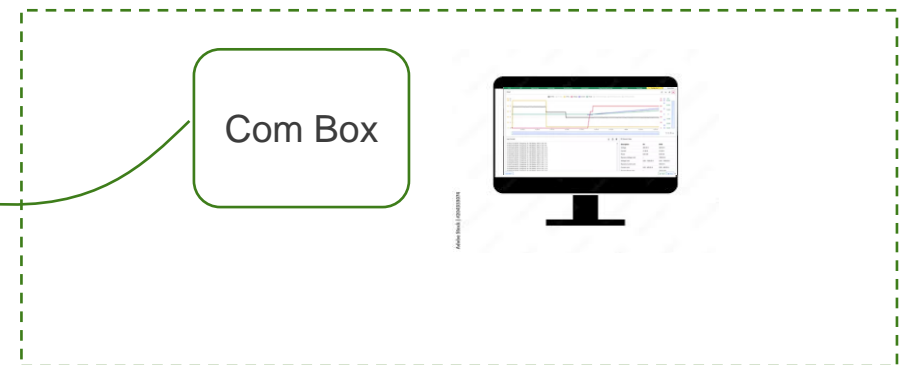


ISO 15118-20 BPT
Communication only

EV Emulation



EV Emulation



ISO 15118-20 Bidirectional EVSE Testing

DC with or without power flow



GridCode Compliance Testing
 IEEE 1547 / UL1741
 EN 50549-10
 EU 2016/631 – RfG



IEEE 2030.5 emulation
 OCPP 2.1 emulation
 ISO 15118-20 emulation

ISO 15118-20 BPT

EV Emulation



360 kW 1000V DC Max 600A



Optionally
 EVSE in climate
 chamber at - 20°C
 (-30°C) to + 60°C

EV Emulator



ISO 15118-20 BPT
 Communication only

Com Box



Security Services - EV Charging Stations



At DEKRA we offer a comprehensive service from training to audits in order to ensure the safety, security and privacy of EV charging stations and the broader app ecosystem.



We offer a complete certification scheme together with our seal of approval.

The scheme is focused on protecting users by preventing threats and improving security quality across the ecosystem.

We will be the
global partner
for a
secure
world



Thank you, for taking care of **SAFETY**

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