

CERV 2020



Electric vehicles

The changing landscape

Session 2 - Perspectives on light duty vehicles:
projections, needs, solutions

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The progression of home charging



- AC Charging, add V2G (adds com module to EVSE)

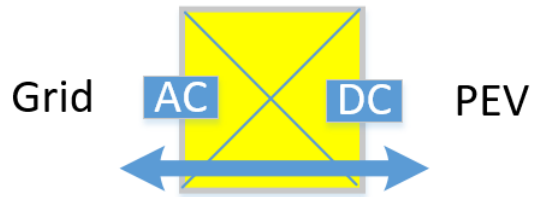


- DC Charging (includes inverter in EVSE), then include Solar and Stationary Storage inverters (to home applications)

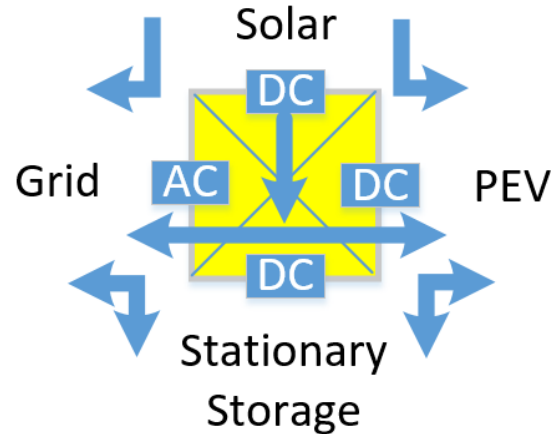


- Wireless Charging (adds Ground Assembly), next is to include inverter for Solar and Stationary Storage (to home applications).

Functional perspective – home charging



- AC EVSE – charging (is now), discharging (is soon)
 - Customer effects: some EVSEs can have the com module added, others may need to be replaced.



- DC EVSE – charging (is now), discharging (is now), Solar (being added), Stationary storage (being added)
 - Customer effects: adding solar and/or stationary storage inverter needs to include PEV charging/discharging port.
 - Purchase combined unit instead of an AC EVSE



- Wireless charging (same as basic AC EVES).
 - Customer effects: more favorable if it included functions of DC EVSE (with GA).

Progression – manual fueling



- Customers are used to using gas stations (added stop on the travel path to refuel)



- Starting to use EVSE – charge/discharge at Home, workplace, public locations
- AC for PHEVs, AC or DC for BEVs

Potential charging combinations

AC	DC	WPT	Comments
X			PHEVs
X	X		PHEVs and BEVs
	X		Need to include small offboard DC charger (1.5kW) - Spare tire concept
X	X	X	Doubtfull to include all these on a vehicle
X		X	PHEVs and BEVs
	X	X	Need to include small offboard DC charger (1.5kW) - Spare tire concept
		X	Need to include small offboard DC charger (1.5kW) - Spare tire concept



Progression – automatic fueling



- Automated Connecting Devices (ACD)
- Customer still drives the vehicle to EVSE



- Autonomous – Valet charging
- Goal: No customer interaction

The future

