

Scenario 1 Solar Charging Battery and Powering Home



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Observe the green energy flow from the solar panels, through the battery & inverter, and the backup gateway to power the home and export the surplus energy to the grid

Screen: Observe the kWh being generated and the proportions being exported to the grid and consumed by the home

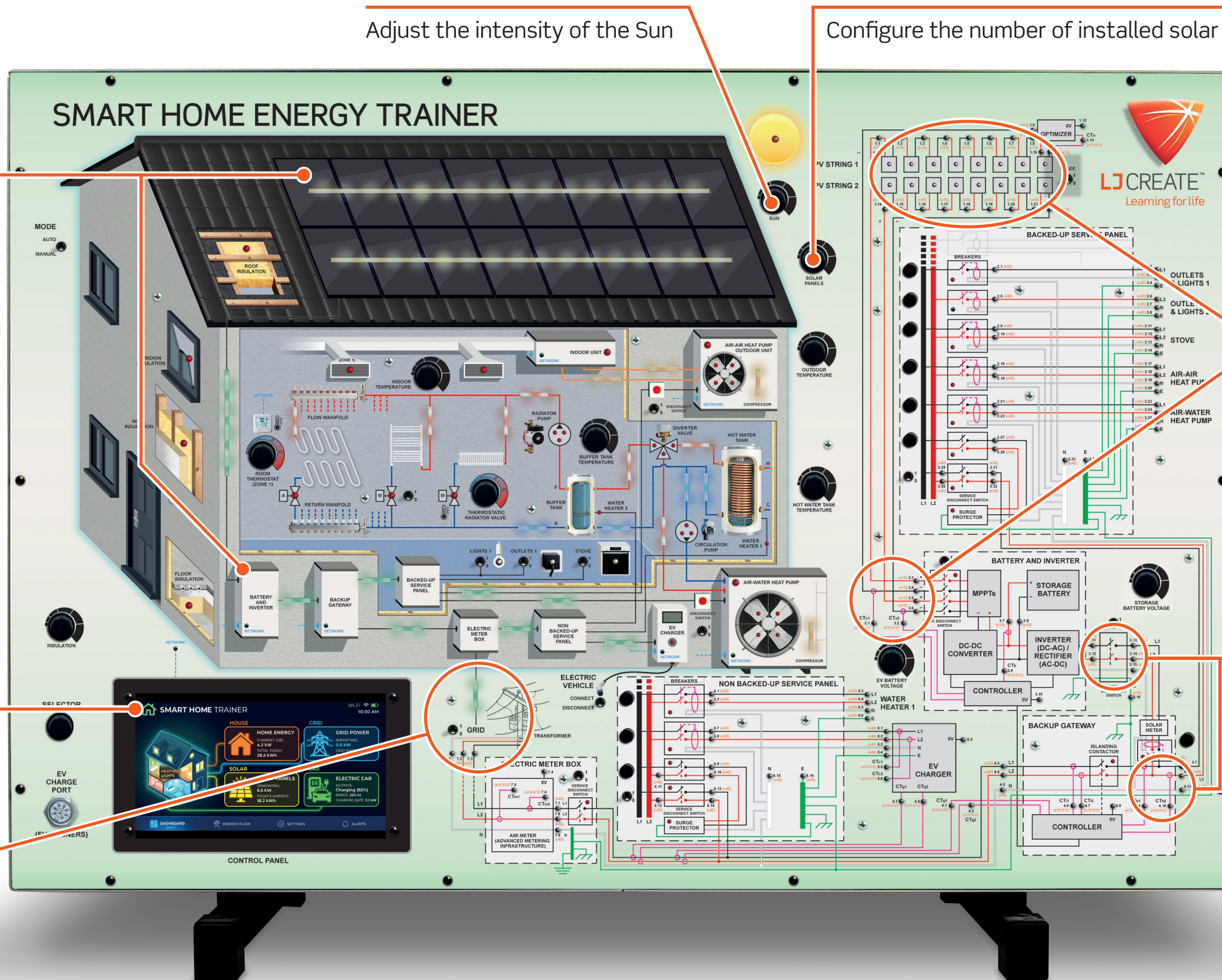
Grid connection for energy export

Adjust the intensity of the Sun

Configure the number of installed solar panels

Measure test points of safe, scaled voltages and currents in the PV strings

Measure test points showing DC to AC conversion and the current flow to the home and energy exported to the grid



Scenario 2 Heating Home and Hot Water



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See the radiator pump circulate water around the home heating system

Adjust indoor and outdoor temperatures

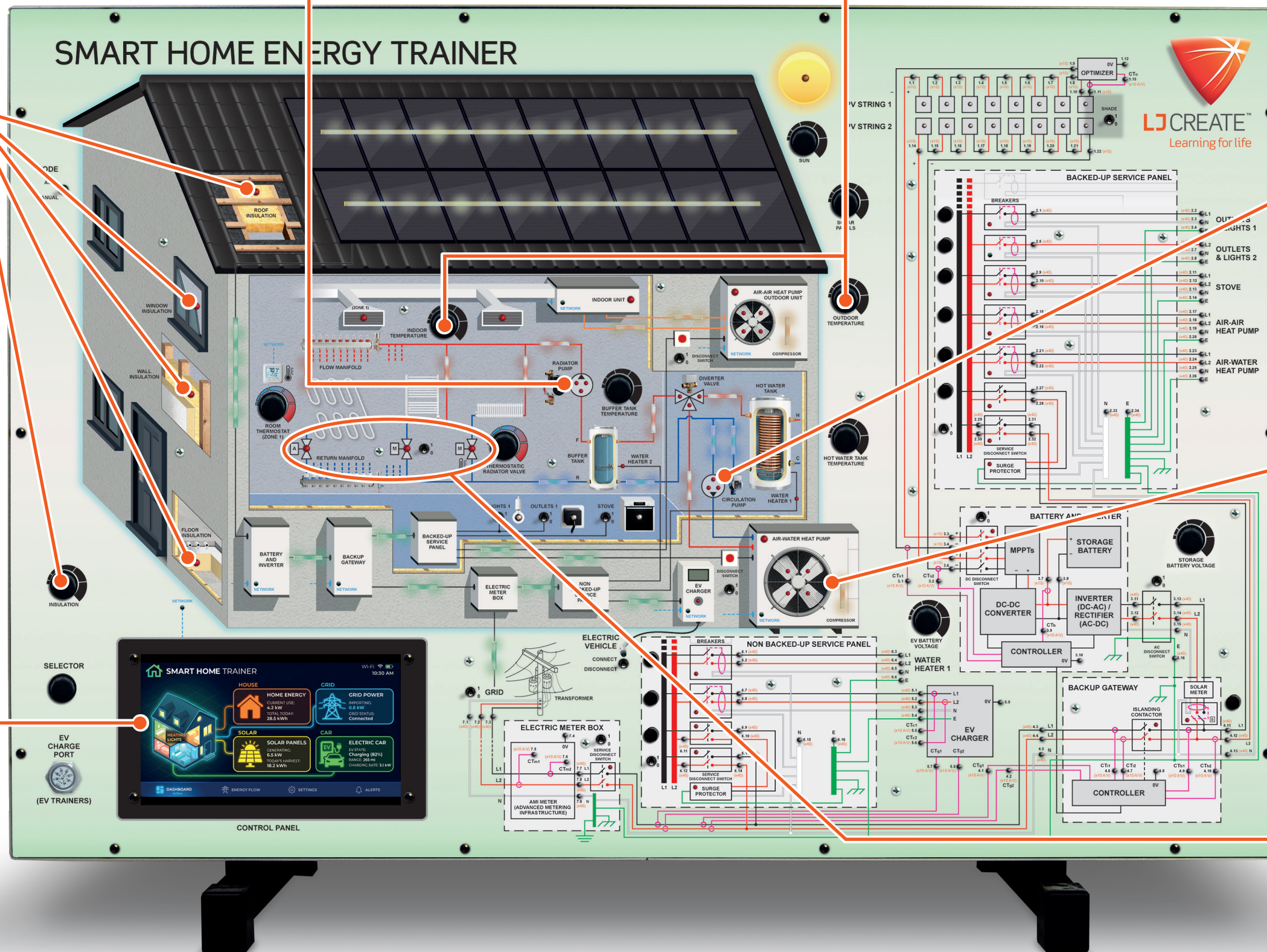
Adjust home insulation 'R' values to observe the need to adjust the heat curve that controls the heat pump operation

Screen: Configure heat curve for optimum heating performance

See the circulation pump running to pump the heated water through the diverter valve into either the heating system buffer tank, or the hot water tank

See the air-water heat pump compressor running to heat water.

Operate 3 different types of heating system controls



Scenario 3 Cooling Zone 1 (Room Thermostat)

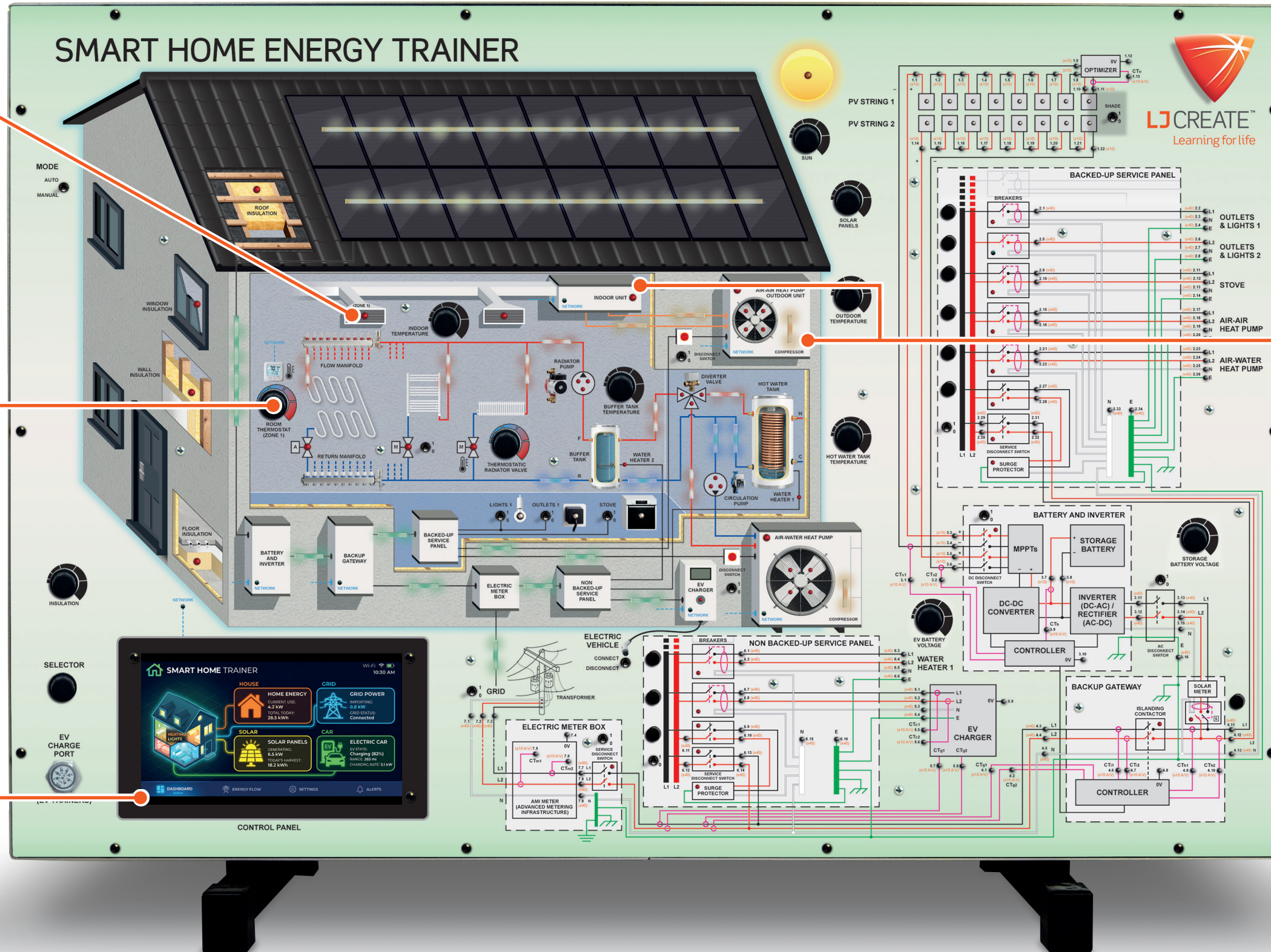


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See zone 1 indoor air-conditioning unit duct open to deliver cold air into the room

Adjust the room thermostat to change the desired room temperature of zone 1

See the controller controlling the indoor and outdoor air-conditioning units on a network

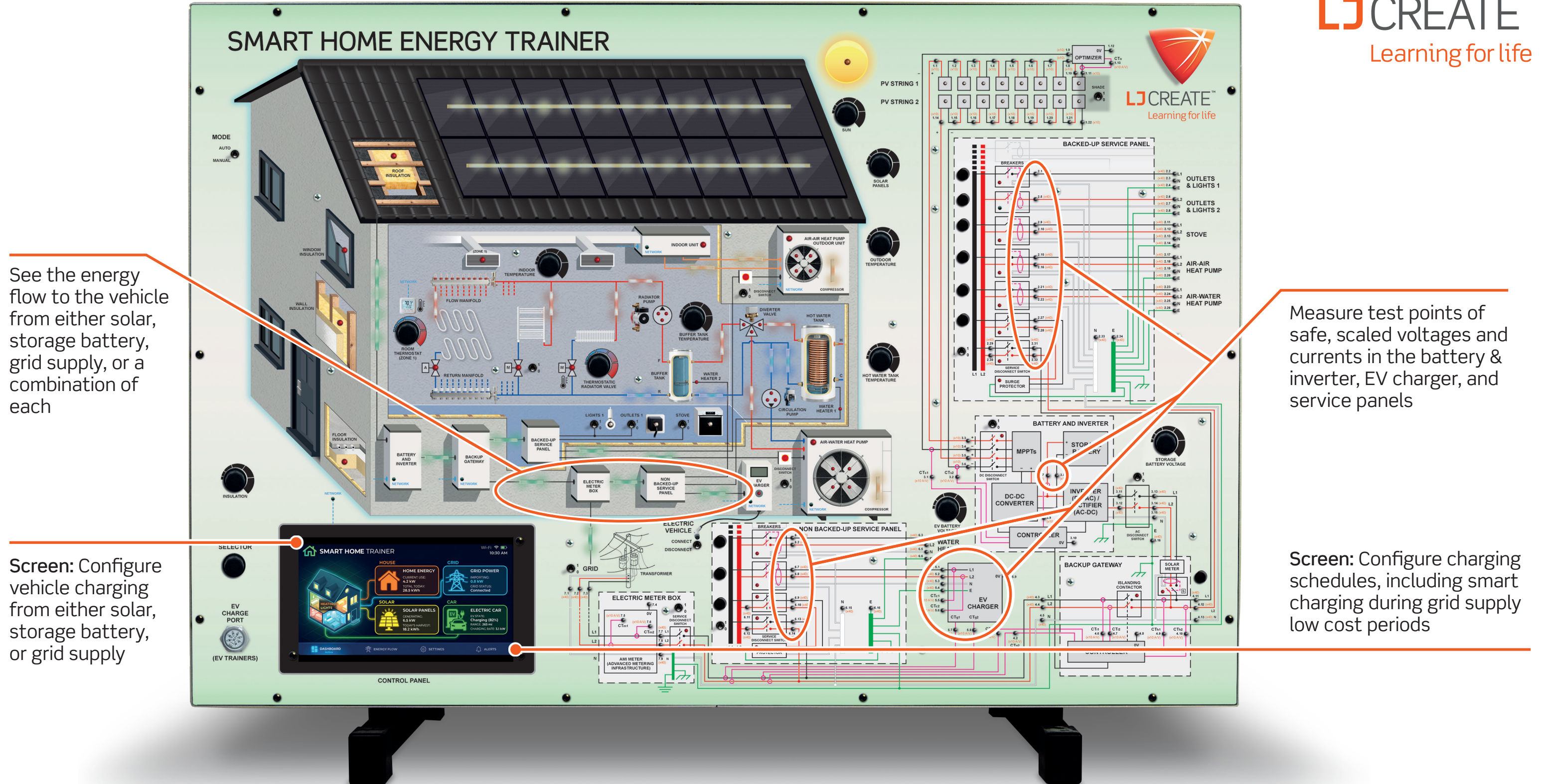


See the air-air heat pump compressor running and circulating refrigerant to the indoor unit

Scenario 4 Smart Charging Vehicle



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Scenario 5 Going Off-Grid



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Measure test points to see that the backed-up service panel is powering essential home circuits during off-grid configuration

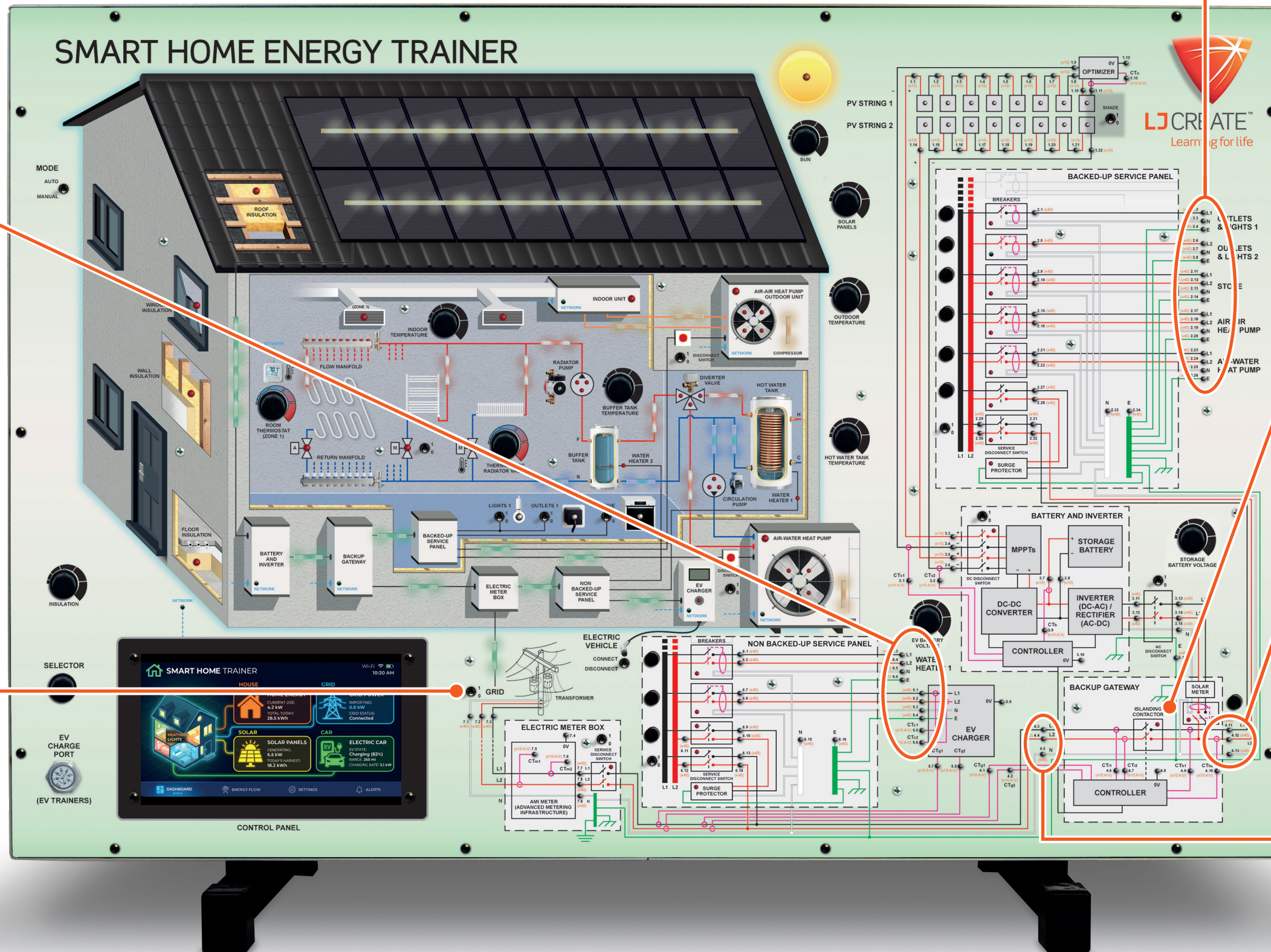
Measure test points to see that the non backed-up service panel is not powering non-essential circuits during off-grid configuration

Observe the islanding contactor opening when the grid is removed to safely isolate the home from backfeeding the grid

Measure test points to see power from battery to home is maintained during off-grid configuration

Remove the grid connection on the control panel (home control) or grid supply power cut

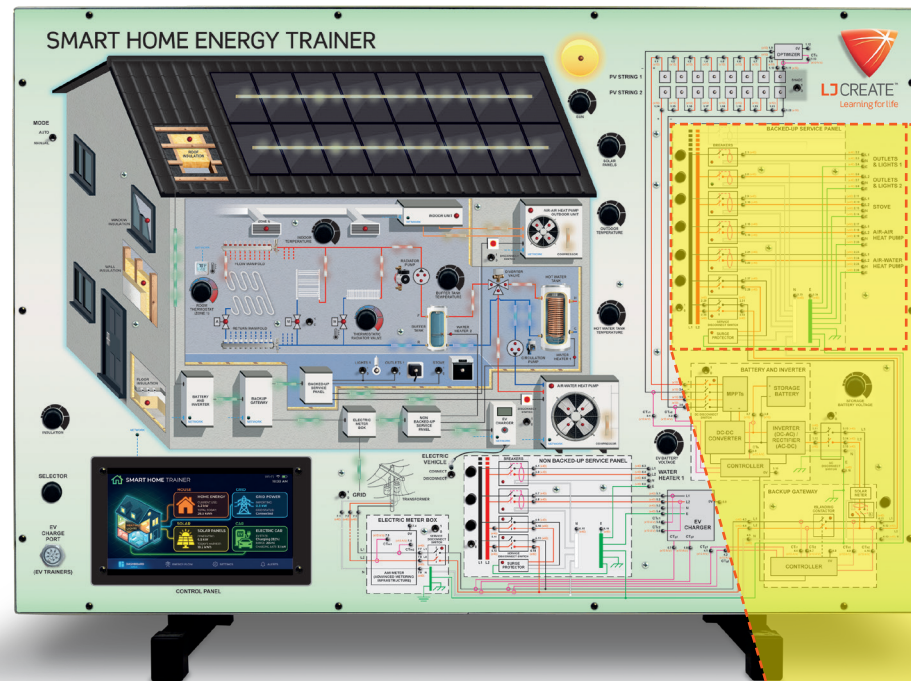
See that the islanding contactor prevents the home generated power (battery and solar) backfeeding the grid



Scenario 6 GFCI Circuit Breaker Trip



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2

See Ground Fault Circuit Interrupter change from red to green when its circuit is broken

Green = open, safe
Red = closed, hazardous voltages

4

Press breaker reset to re-establish power connection

Apply a short circuit across a home circuit L-N (or L-E or L-L)

1

3

Measure test points to see voltage is only removed from broken circuit

