DOCKETED	
Docket Number:	20-MISC-01
Project Title:	2020 Miscellaneous Proceedings.
TN #:	236554
Document Title:	Presentation - Panel 2 Marc Andre Forget CEC V2B Workshop
Description:	N/A
Filer:	Ben Wender
Organization:	Ossiaco
Submitter Role:	Public
Submission Date:	2/1/2021 4:46:32 PM
Docketed Date:	2/1/2021

OSSIACO

We deliver energy so you can live a life without compromise.

$900M worth of fuel was pumped in the past 24 hours.

25% EV penetration by 2025, 50% by 2030 …

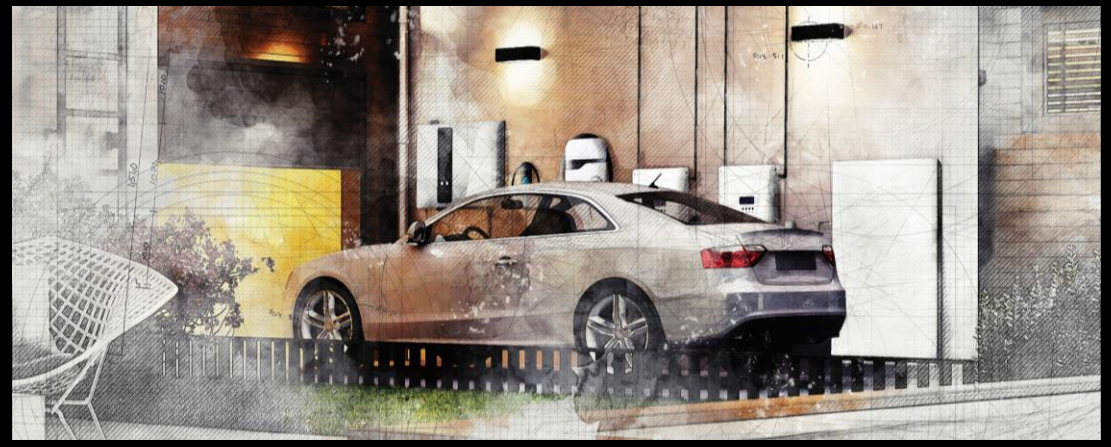
With EV's, fuel tanks will **go the way of the dinosaurs.**

88% of EV owners charge at home.

EV's are not the only massive energy change as 5M residential Solar systems will also be installed by 2025 (US).

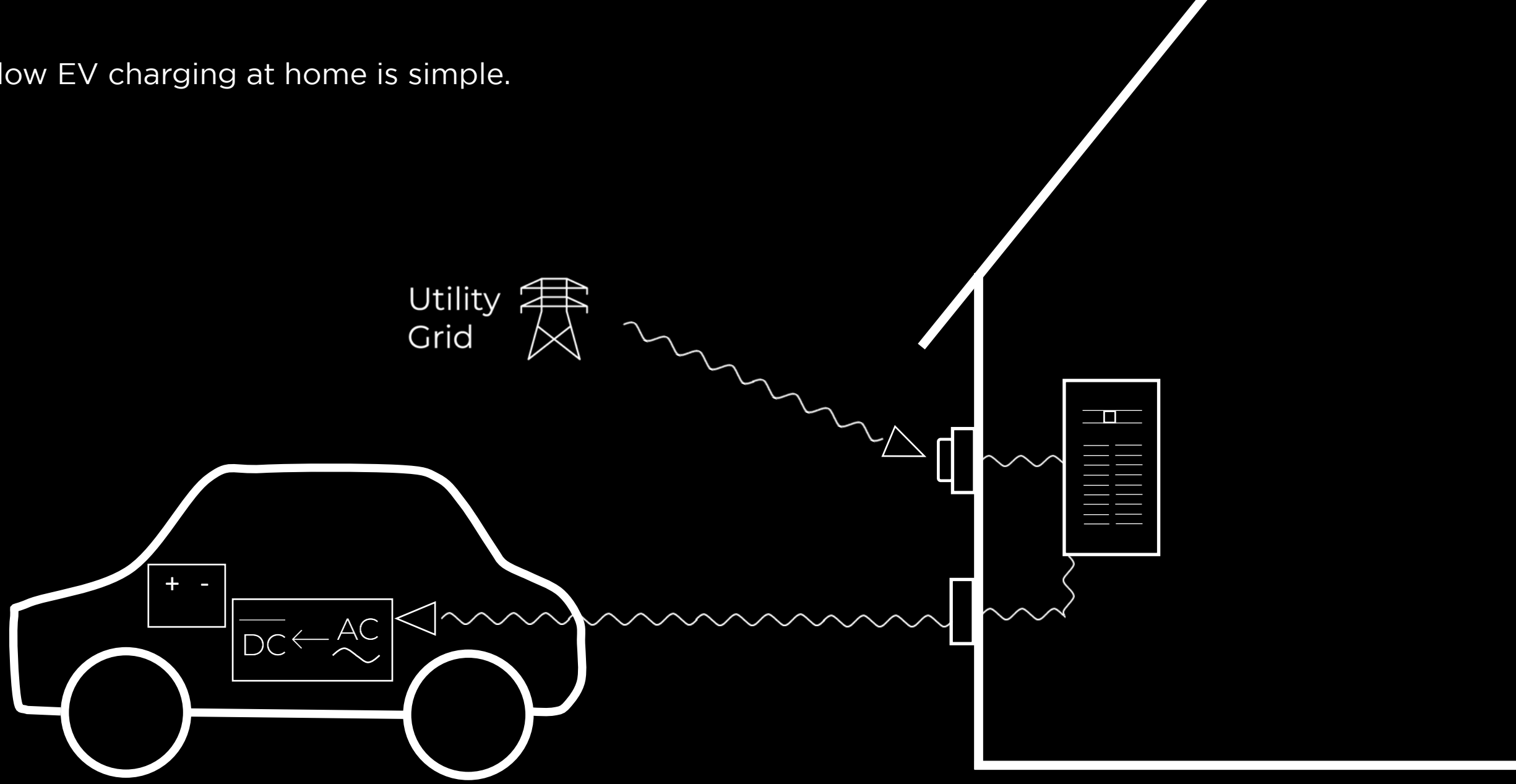
Solar is mandatory by law for new homes in California. Japan, Europe to follow.

That means we need to rethink how the EV chargers are integrating the home electrical system (and smart home).

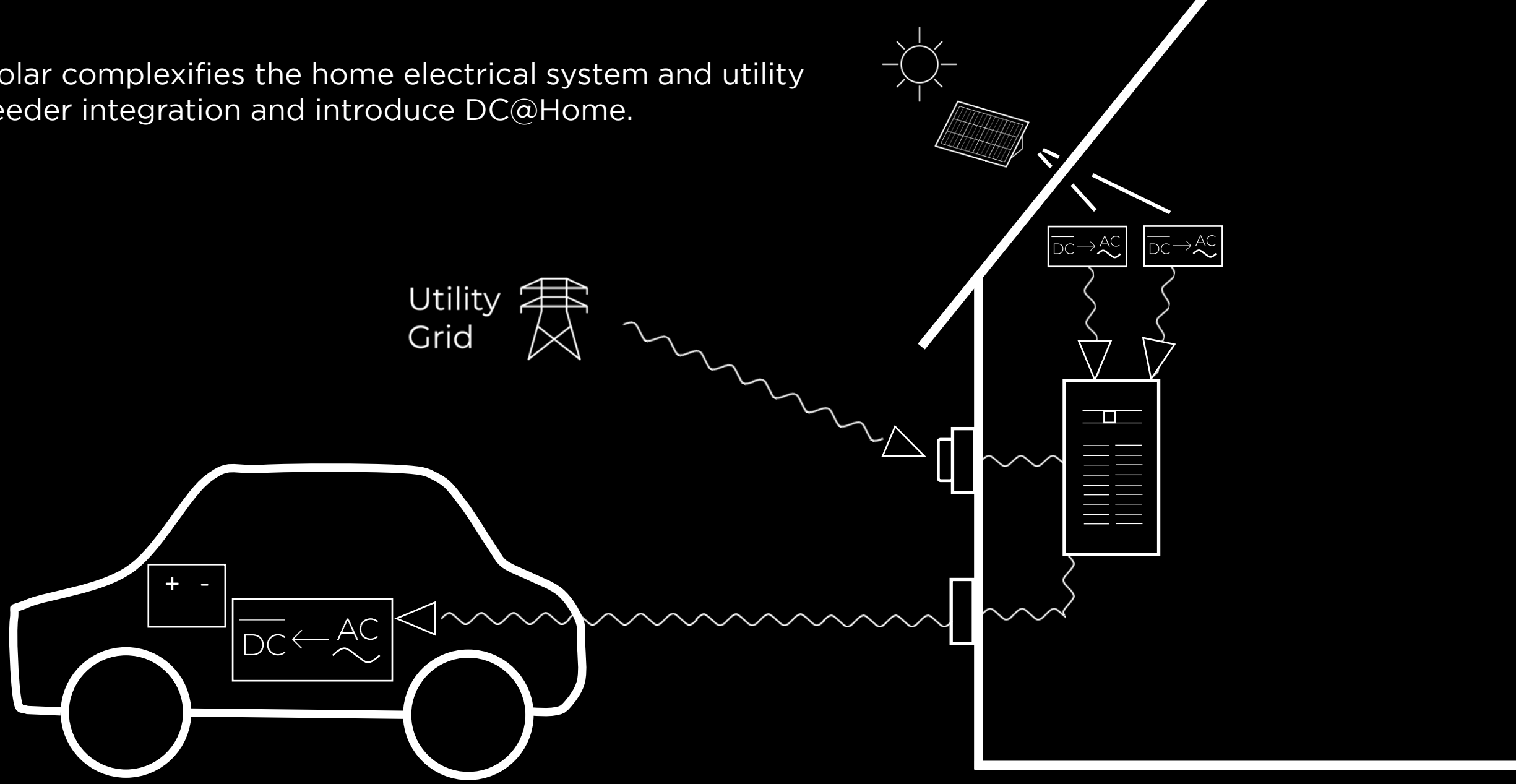


We also need to rethink what's in for the prosumer.

Slow EV charging at home is simple.

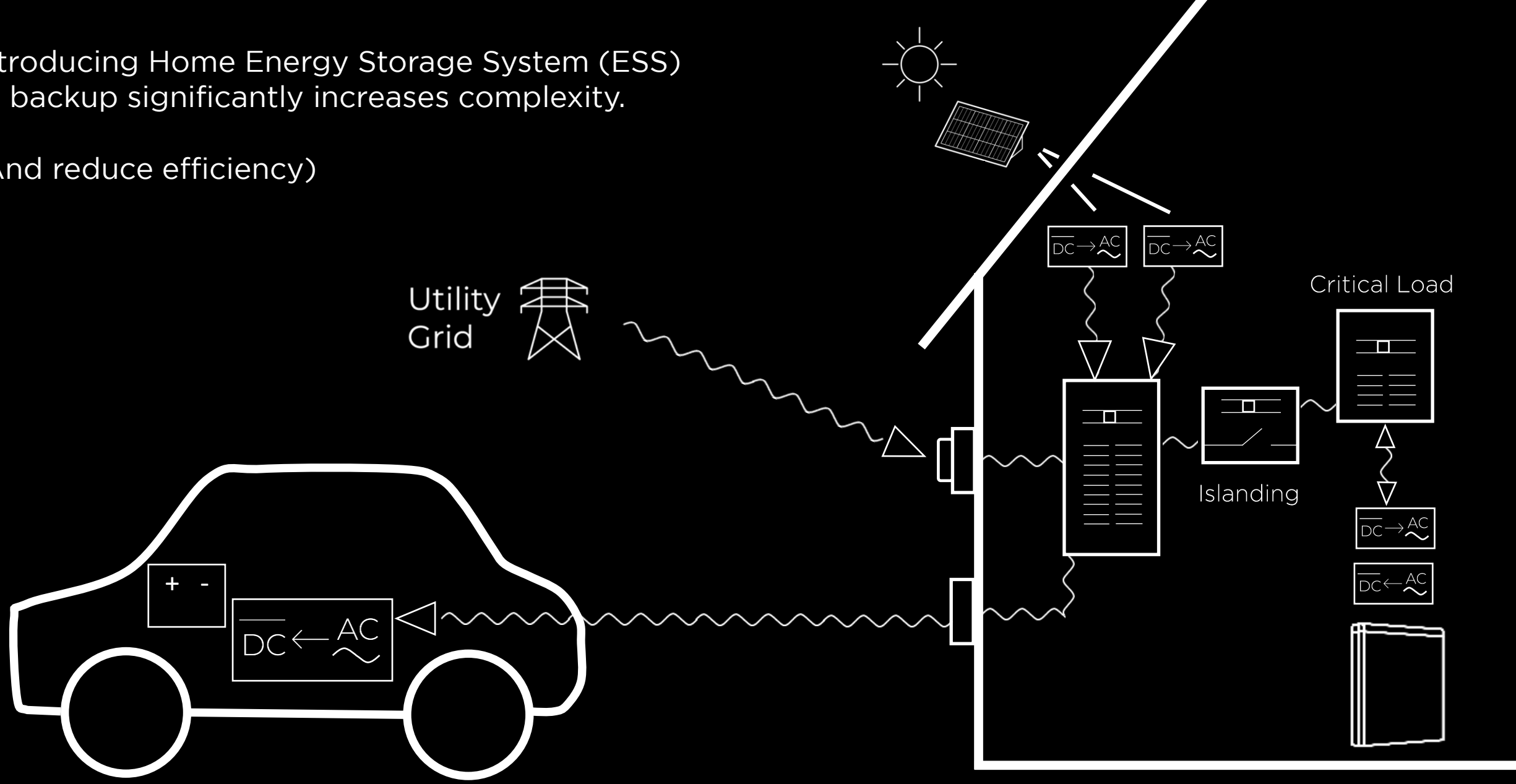


Solar complexifies the home electrical system and utility feeder integration and introduce DC@Home.



Introducing Home Energy Storage System (ESS)
as backup significantly increases complexity.

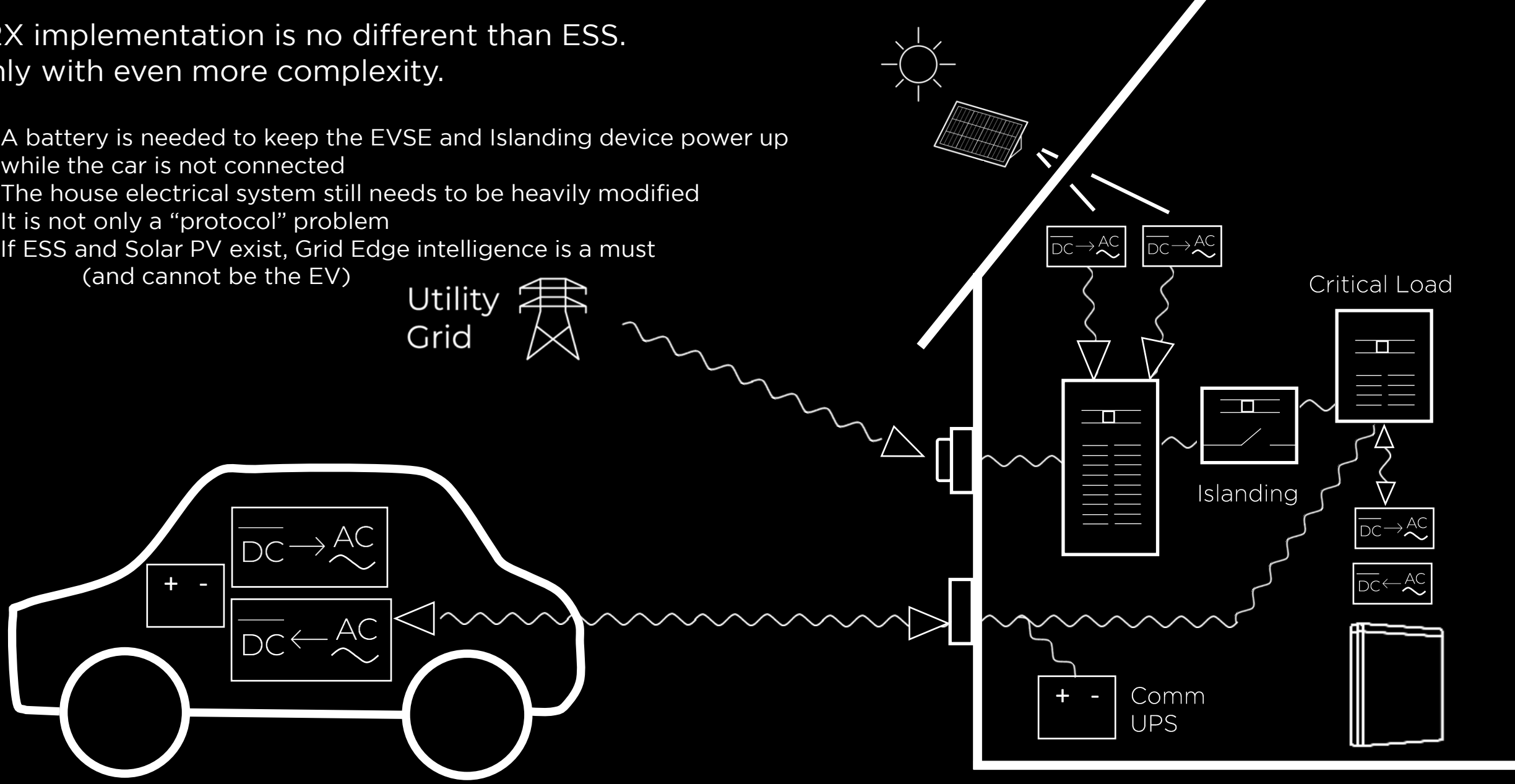
(And reduce efficiency)



When law of physics collides with law of economics,
Laws of physics win. Always.

V2X implementation is no different than ESS.
Only with even more complexity.

- A battery is needed to keep the EVSE and Islanding device power up while the car is not connected
- The house electrical system still needs to be heavily modified
- It is not only a “protocol” problem
- If ESS and Solar PV exist, Grid Edge intelligence is a must
  (and cannot be the EV)



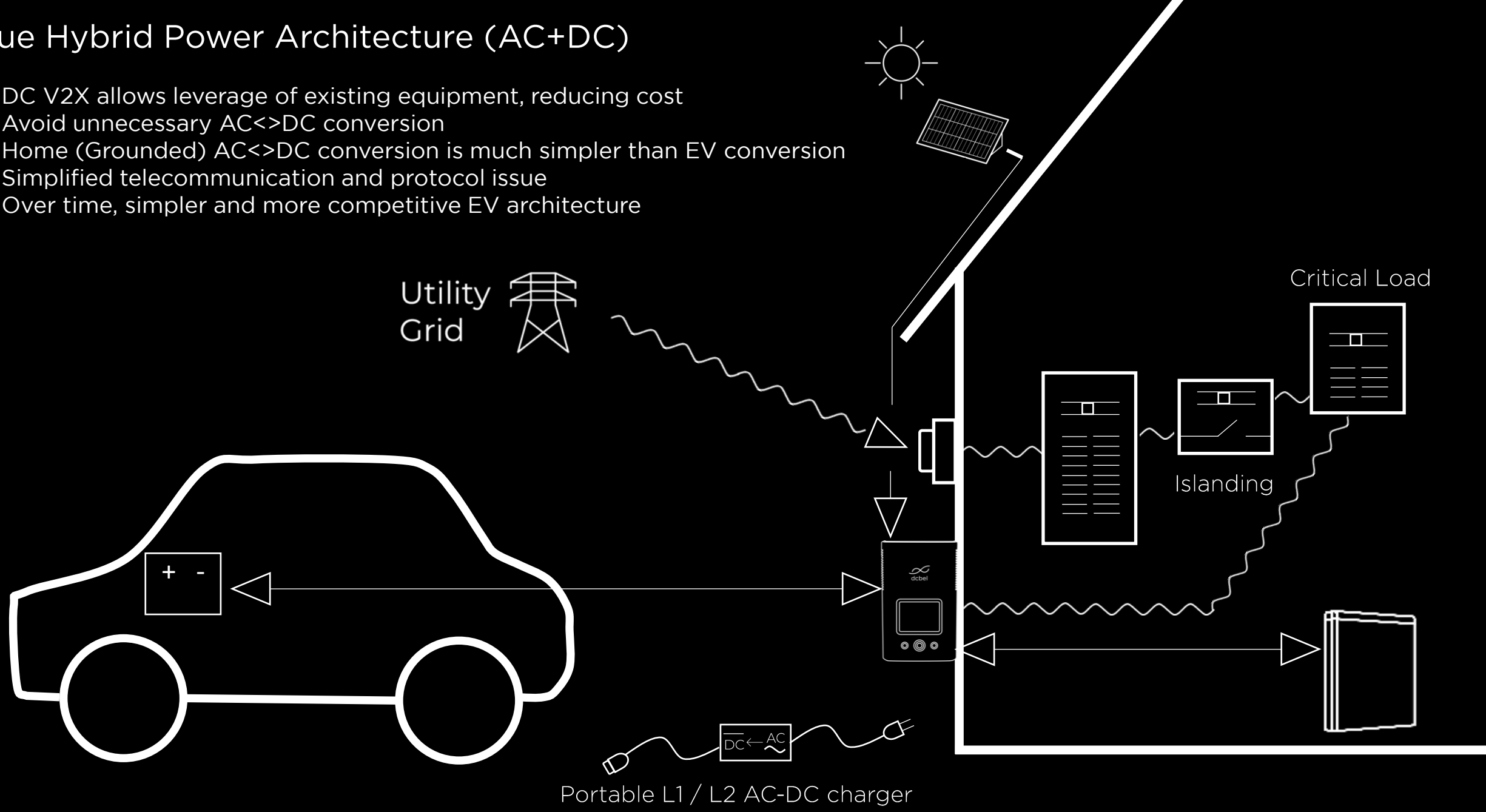
And V2H is fundamentally different than V2G.

In V2H, the inverter acts as a Voltage source (replace the Grid AC wave).
In V2G, the inverter acts as a Current source (follow the Grid AC wave).

What it means: It is simply not the same electronic concept.

True Hybrid Power Architecture (AC+DC)

- DC V2X allows leverage of existing equipment, reducing cost
- Avoid unnecessary AC<>DC conversion
- Home (Grounded) AC<>DC conversion is much simpler than EV conversion
- Simplified telecommunication and protocol issue
- Over time, simpler and more competitive EV architecture

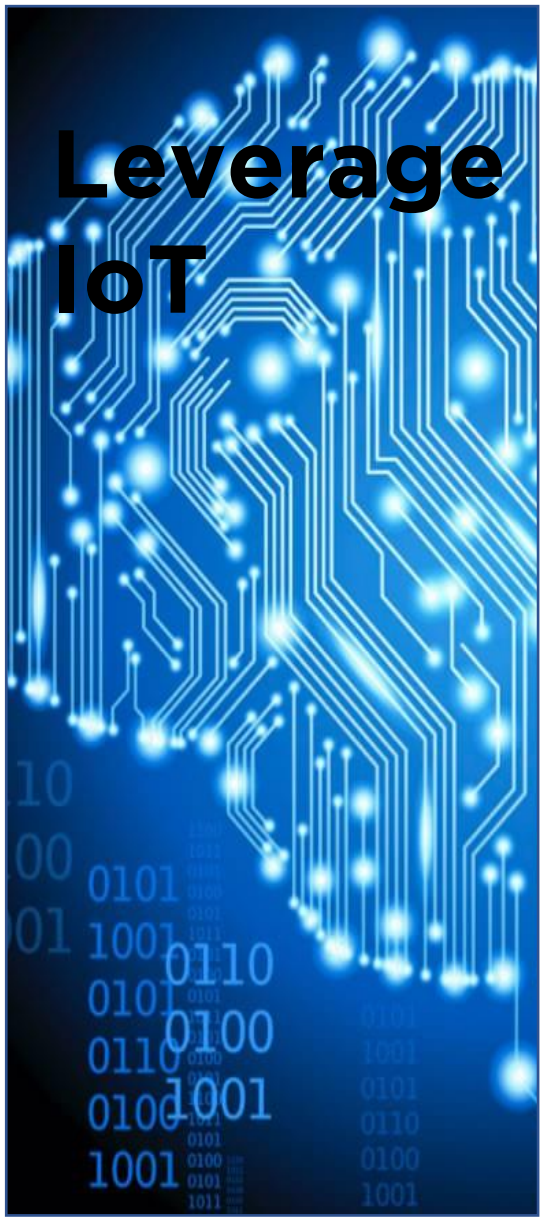


We need to rethink what is a prosumer.

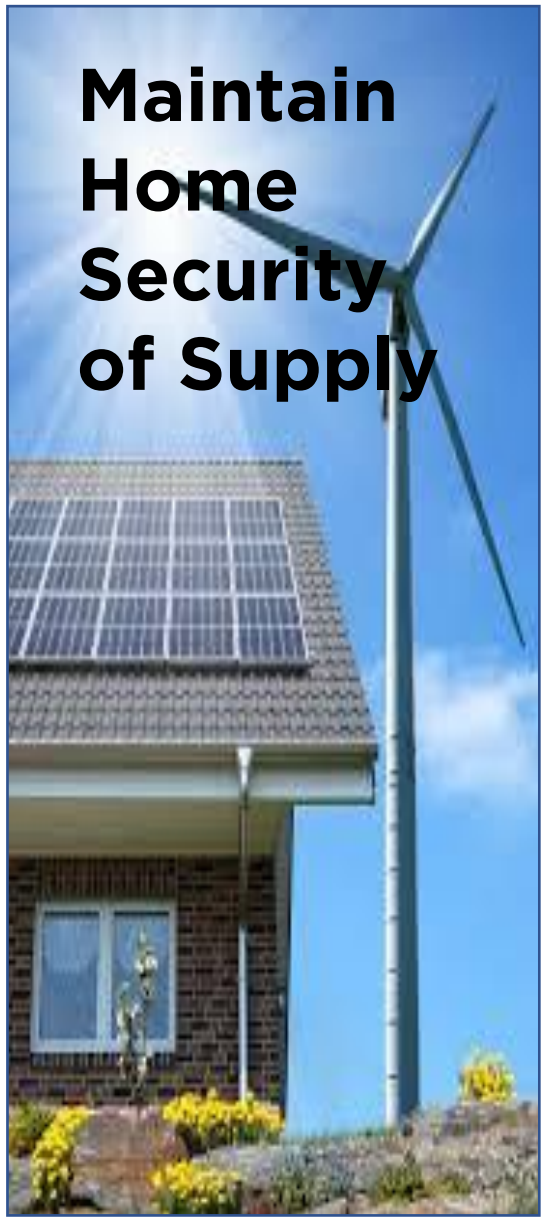
An energy revolution is around the corner.

Decarbonisation

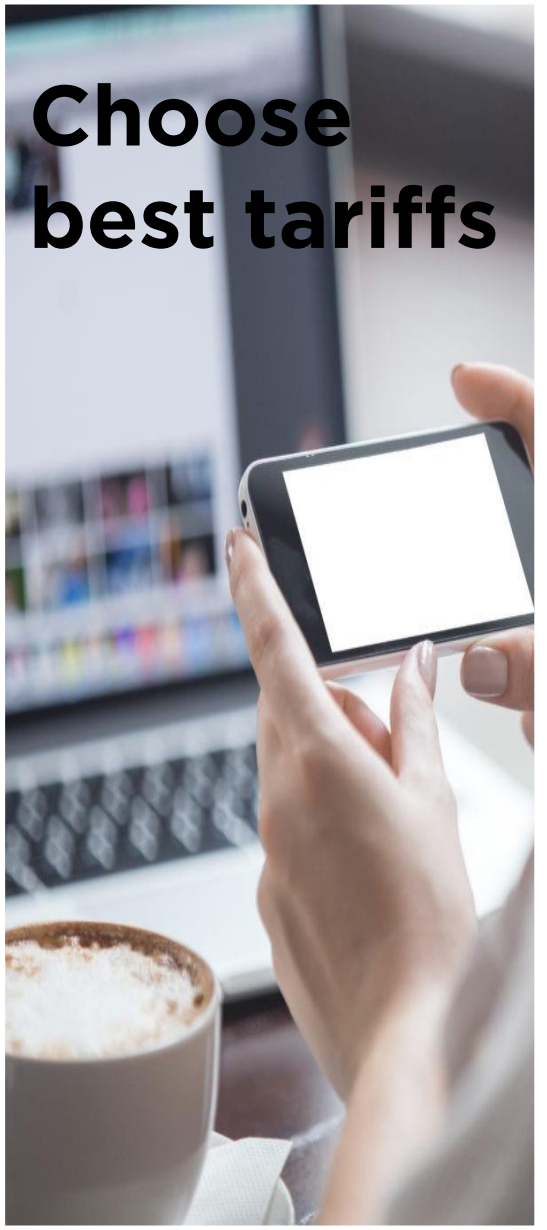
Digitisation



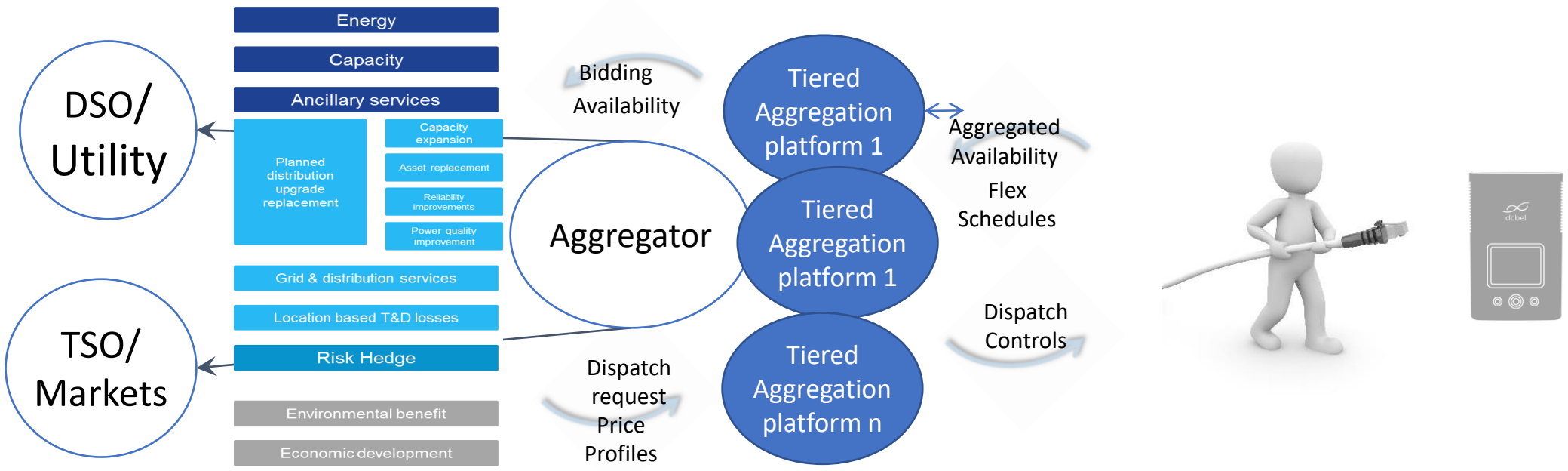
Decentralisation



Democratisation



Energy Management Process is complex and cannot be ignored and must be designed to answer prosumer expectation (and not the other way around).



Real-time commercial aggregation of distributed energy resources (V2G, generators, and storage) leveraging tiered benefits from new Market Revenues

In summary, what should be our ultimate objective?

Self-generate, store, provide grid flexibility

Consume when it makes sense

- Leverage EV and current home investment in DC@Home already provided by Solar & ESS
- Free choice/change of supplier and aggregator
- React to price real-time signals
- Access User friendly analytics and sell relevant products to maximise the value of my flexibility
- Adapt to Grid constraint and provide alternative sources in case of Grid incidents
- Control my own energy data and make it portable across actors I trust