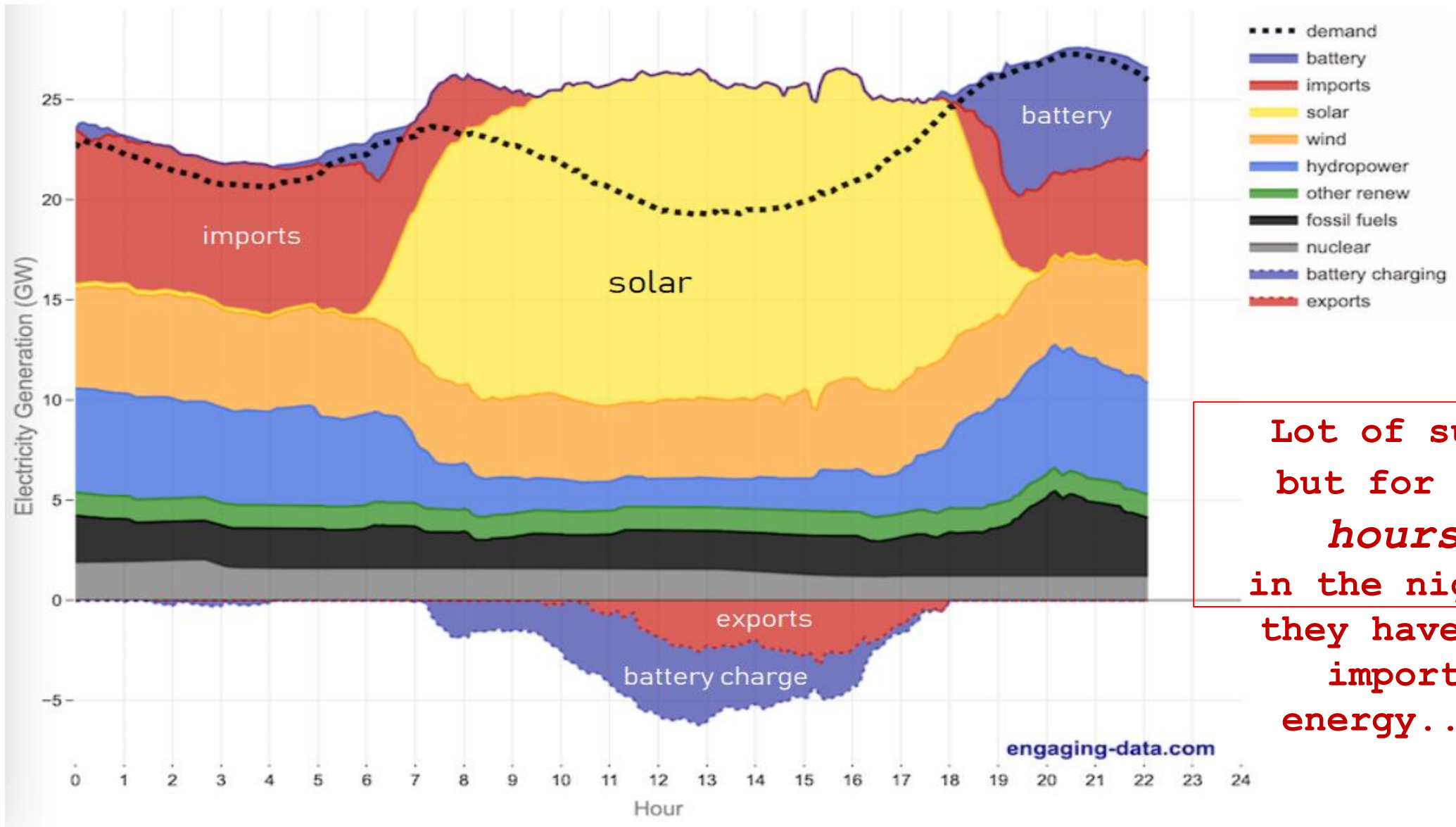


HOUSTON WE HAVE A PROBLEM.....IN CALIFORNIA (May 2024)



Lot of sun,
but for 10
hours
in the night,
they have to
import
energy....



Decarbonisation of electric grids reliant on renewables requires long-duration energy storage

Share



The CO2 Battery

The only viable alternative for long-duration energy storage

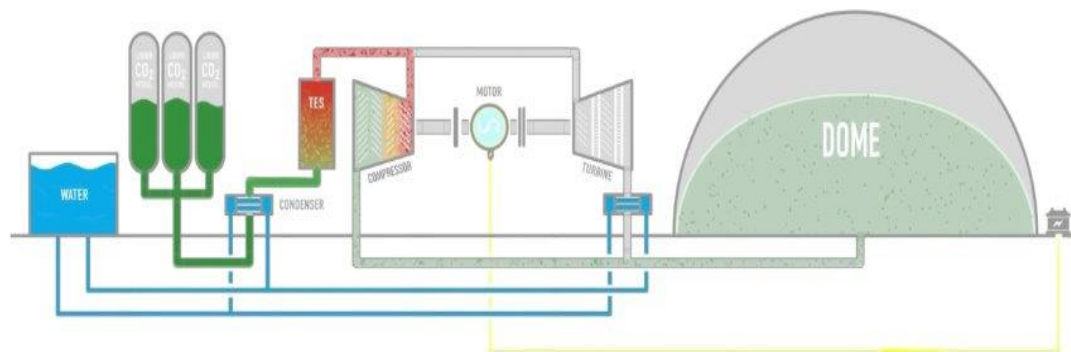
Our technology uses a thermodynamic cycle, charging by drawing carbon dioxide from a 'Dome' gasholder, storing it under pressure, and then dispatching it by evaporating and expanding the gas through a turbine back into the gasholder.



How does the CO2 Battery Work?

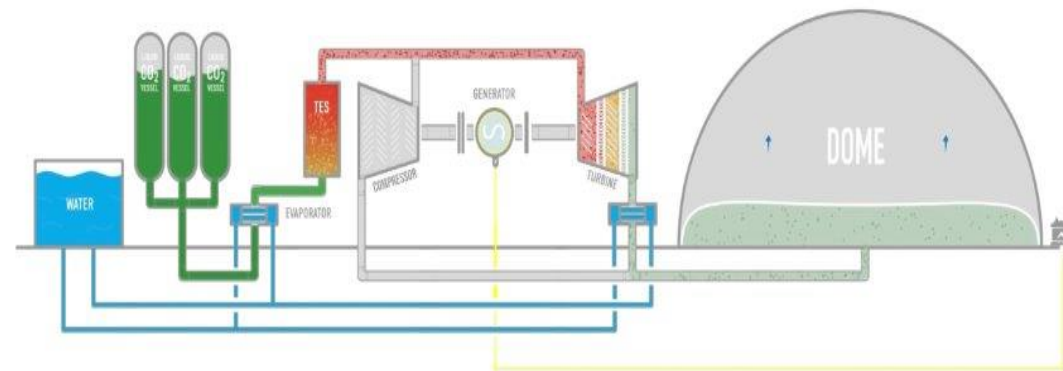
The battery **manipulates CO2 between the liquid and gas phases** to generate electricity

CHARGE



To charge, the CO2 is withdrawn from an atmospheric gasholder, the dome, and compressed into an inter-refrigerated compressor driven by a motor. The heat generated from the compression is stored in a thermal energy storage system, whereas the CO2 is liquefied and stored in vessels under pressure at ambient temperature with zero atmospheric emissions.

DISCHARGE



To discharge electricity to the grid, the CO2 is heated, evaporated and sent into an expander before flowing back into the dome. In doing so, the expander drives the generator to feed electricity to the grid.

Economic and Operational Benefits

The CO2 Battery's economic and operational benefits make it the obvious choice for grid-scale batteries



Efficient

Round-trip efficiency (75%+)
AC-AC and MV-MV



Cost-effective

Highly competitive CAPEX and
OPEX and able to optimize for
energy arbitrage



Flexible

CO2 Batteries can be constructed
almost anywhere



Proven

MW-scale plant already
operational and grid-
connected



Durable

No degradation of capacity or
performance over 30+ years



Reliable

Off-the-shelf
components



Independent

No dependence on rare
metals such as lithium

Investors backing Energy Dome



Google invests in long-life batteries made in Italy

by Alexis Paparo

20 August 2025



Energy Dome's first commercial plant in Sardinia goes into operation

ENGIE-OFFTAKE AGREEMENT

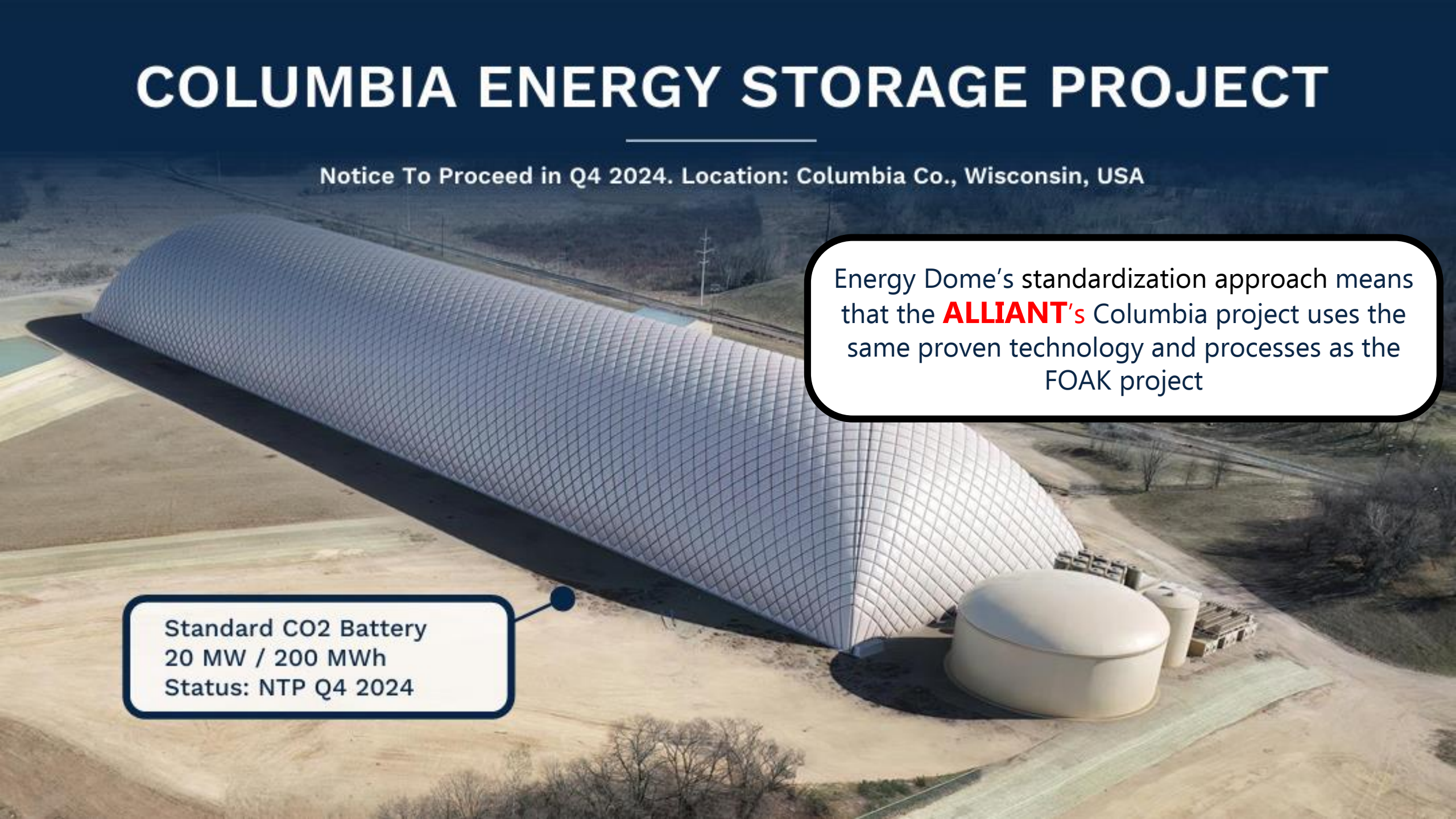
COD in 2025. Location: Ottana, Sardinia, Italy

BOO Contract signed with **ENGIE** for the offtake of the storage capacity.

Energy Dome will own and operate the CO2 Battery

ENGIE will leverage its market expertise to optimize and dispatch the stored energy in the Italian power markets

COLUMBIA ENERGY STORAGE PROJECT



Notice To Proceed in Q4 2024. Location: Columbia Co., Wisconsin, USA

Energy Dome's standardization approach means that the **ALLIANT's** Columbia project uses the same proven technology and processes as the FOAK project

Standard CO2 Battery
20 MW / 200 MWh
Status: NTP Q4 2024

NTPC ORDERS FIRST CO2 BATTERY

Standard CO2 Battery 20MW / 160MWh. Location: Kudgi, Karnataka, INDIA



Standard CO2 Battery
20 MW / 160 MWh
Status: NTP Q1 2025
COD: Q3 2026



Baseload Technologies Cost Comparison

Levelized Cost of Energy (\$/MWh)

