

An aerial photograph of a large industrial facility, possibly a refinery or chemical plant, with several large storage tanks and processing units. In the background, a line of wind turbines stretches across a green field under a hazy sky. A white, hand-drawn line graphic starts from the bottom left, curves up to form a peak, and then curves down to the bottom right, framing the central text.

KEYNOTE

Market drivers for flexible electrification, the green premiums puzzle and the energy security factor

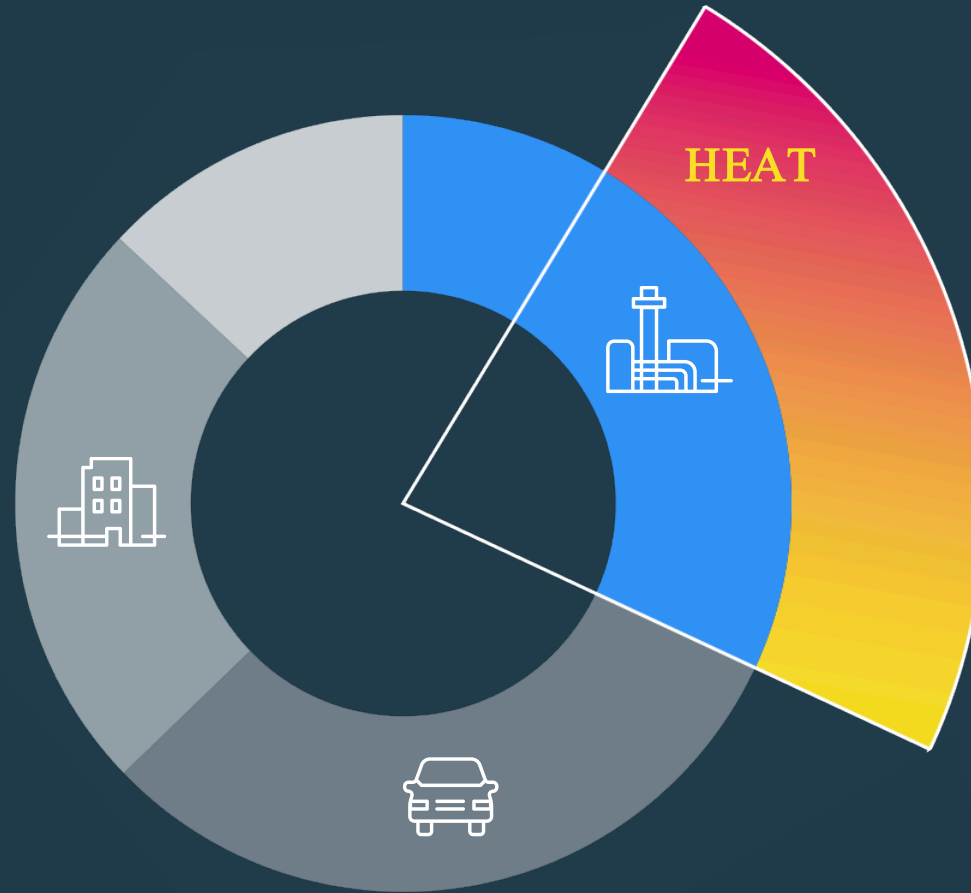
By Mark Meldrum, Head of Europe, Rondo Energy Inc.

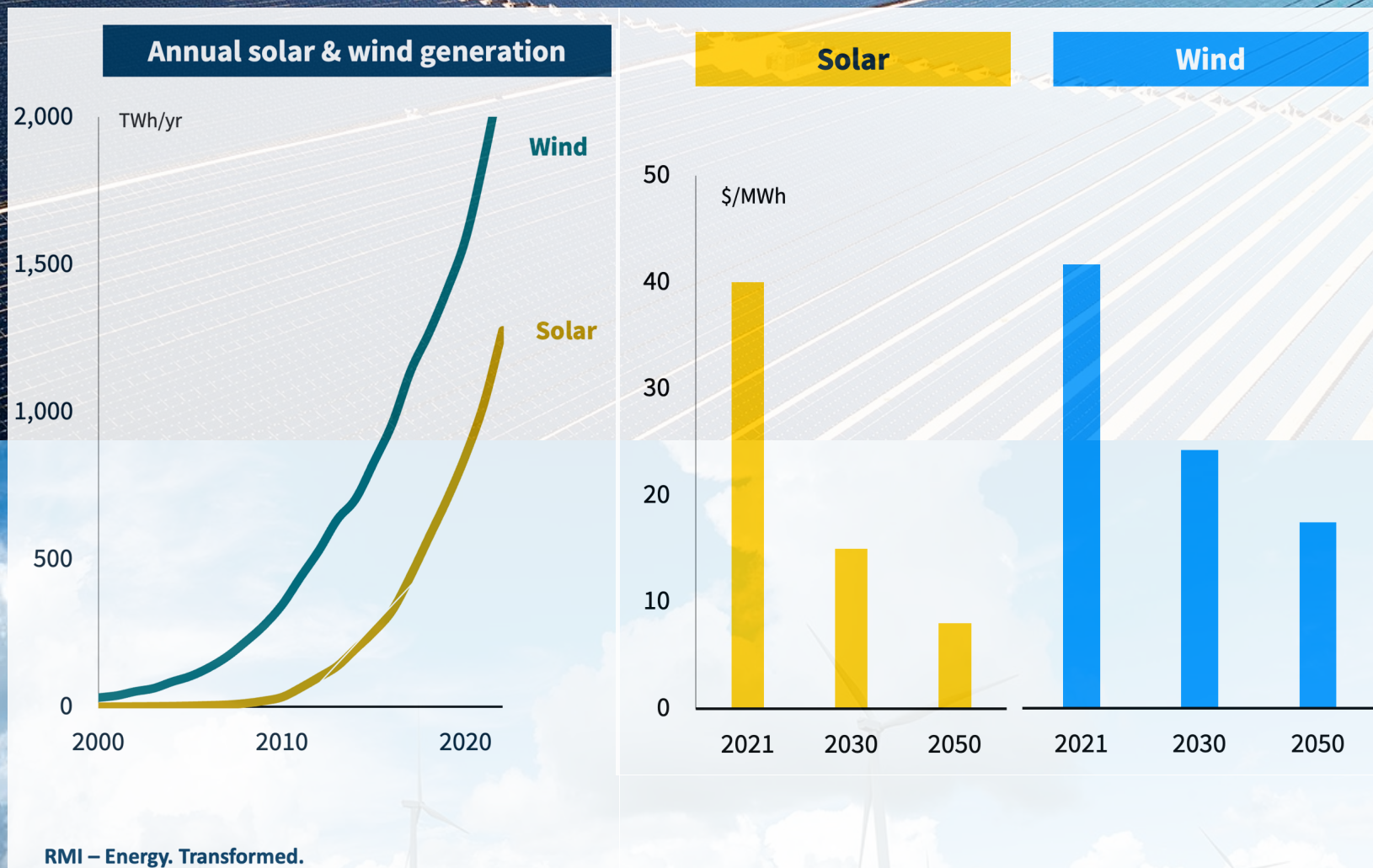


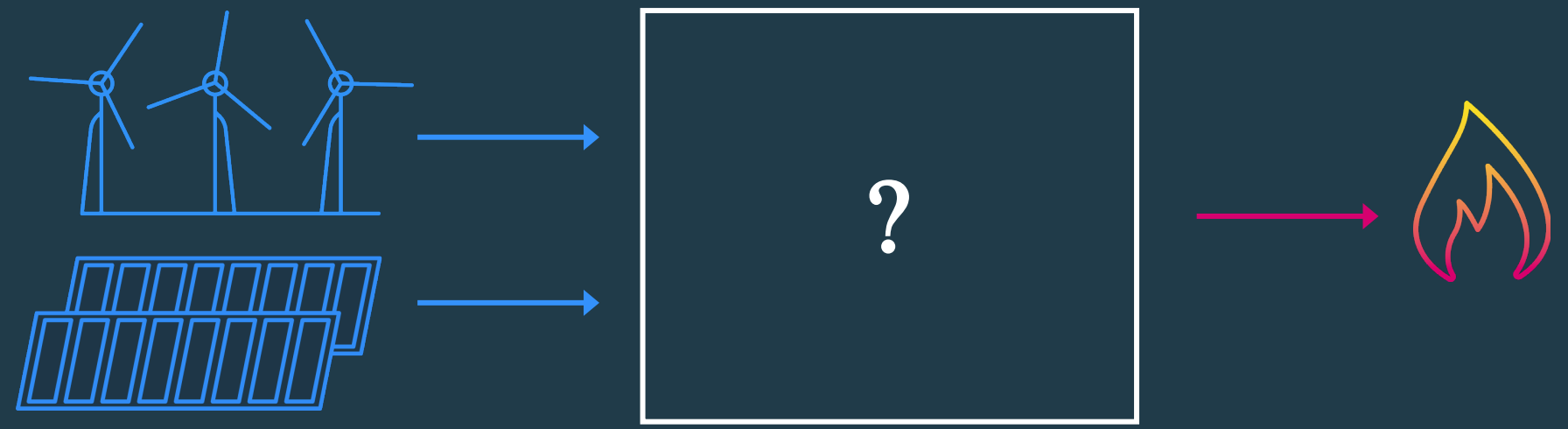
Market drivers for flexible electrification

Rondo heat battery case study

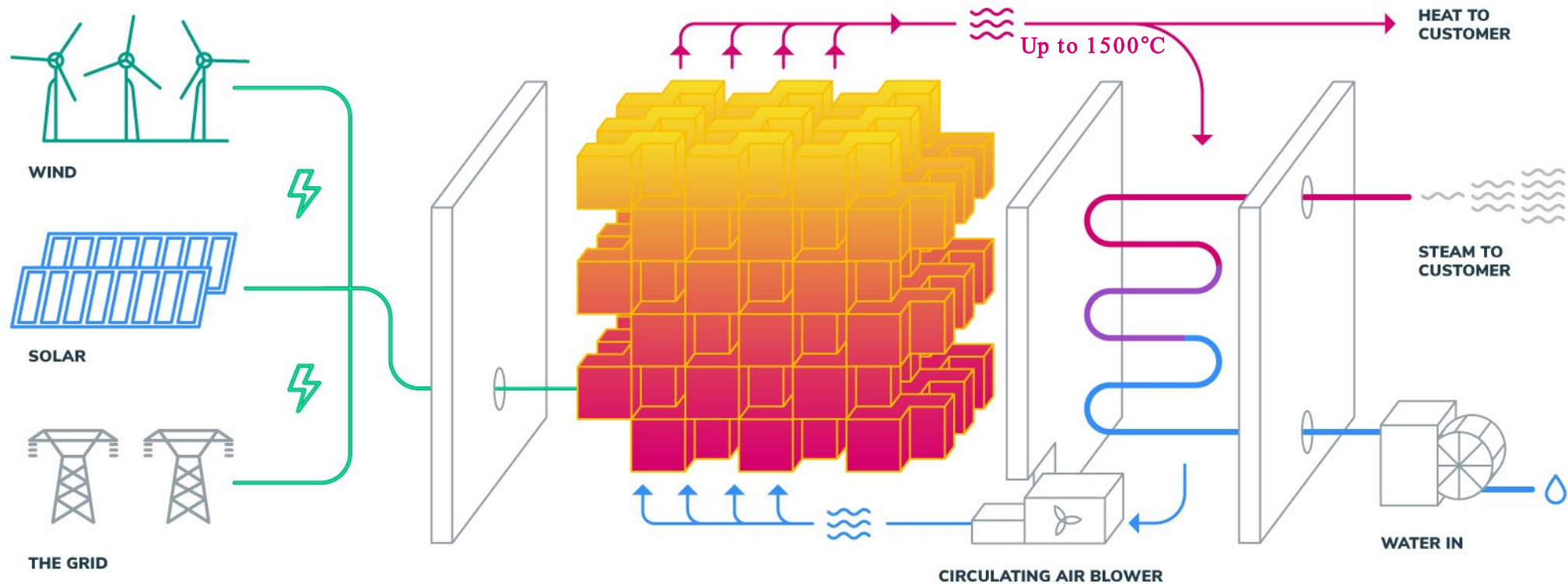
November 2023





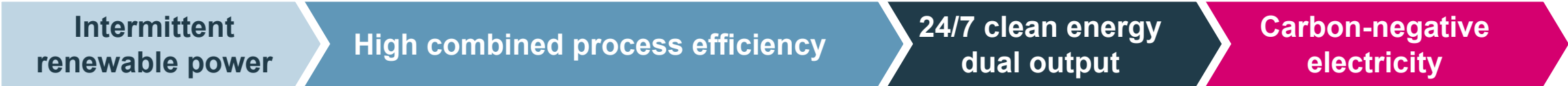
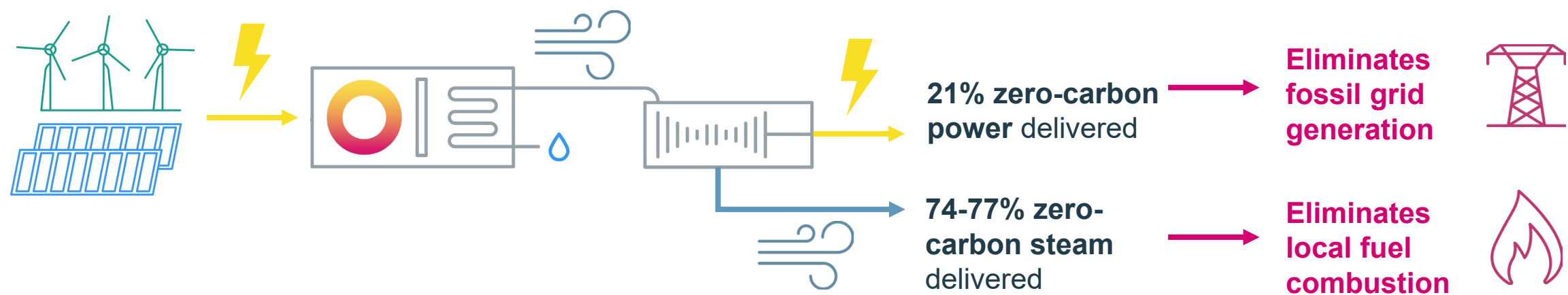


The Rondo Heat Battery is a drop-in, zero-carbon replacement for boilers and furnaces



- 1 The Rondo Heat Battery charges with **intermittent electricity** from local wind & solar or from the grid.
- 2 Electricity powers radiant heaters with zero loss. Refractory brick is rapidly, uniformly heated to 1100 - 1500 °C, and stores heat for hours or days.
- 3 The battery delivers **continuous superheated air** for use as process heat, steam, or electric power at over 98% total efficiency.

Renewable combined heat and power (CHP) can deliver power and steam continuously



Before 2030, Rondo ETES delivers lowest cost heat

Source: Rondo analysis. Rondo TCO includes capital recovery at market IRR + all O&M

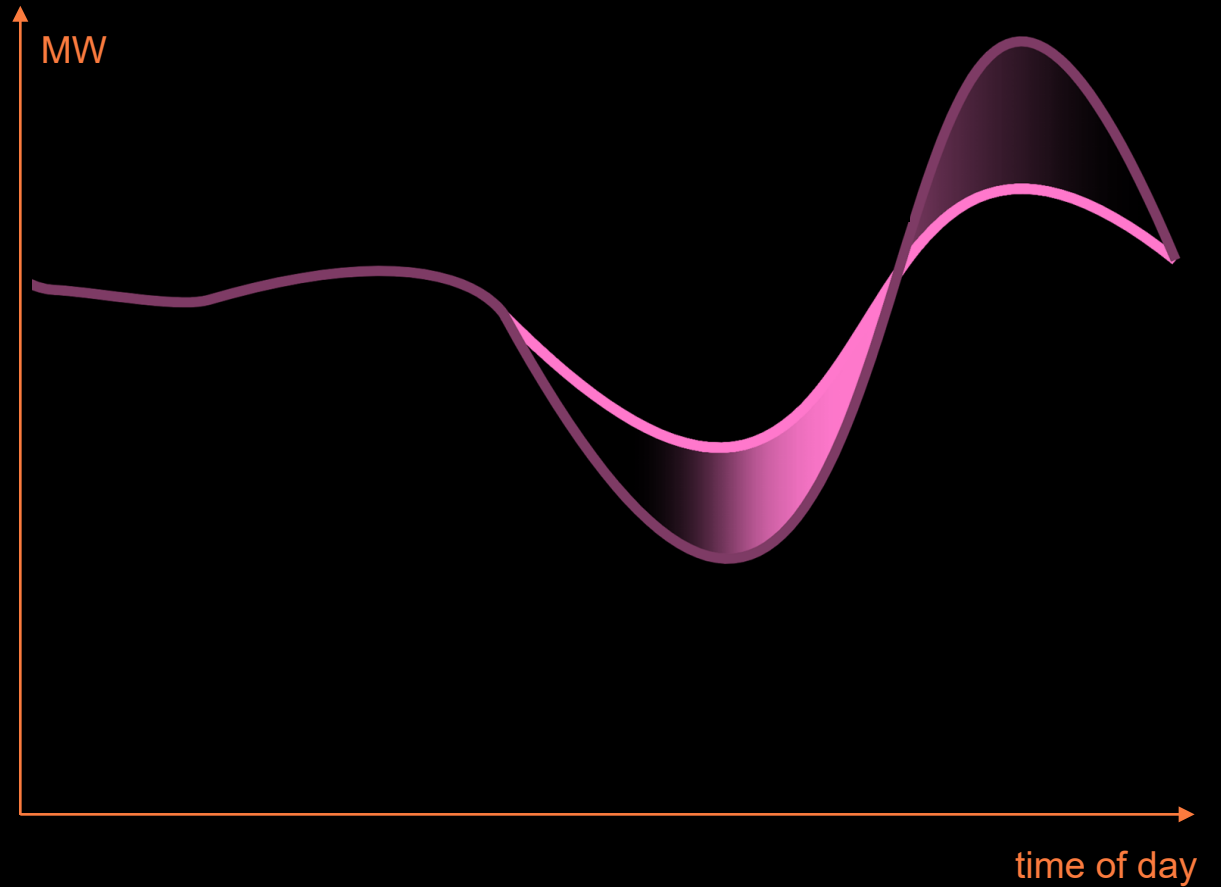
Many factors are shifting to support the market

**Low-cost renewables
for 6-7 hours / day**

LCOE for off-grid connections dropping; on-grid when renewables breach **>30-40% grid penetration** more regular low-pricing events

High flexibility & High performance

- 1 Highest efficiency and temperature electric thermal energy storage
- 2 Flexible and fast charging cycles via automatic controls
- 3 Charge 3-4x faster than discharge
- 4 Dispatchable load and responsive control
- 5 Connect to Grid or directly to onsite Solar/Wind



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Gas price volatility

Elevated gas prices since 2021; cold winter shortage risk; expected LNG over supply in late 2020s though China demand uncertain; associated gas could fall

Markets valuing flexibility

Electricity market reform – drive to incentive flexibility through markets; regulations and market parameters shift to embrace new technologies

Initial green premium support

Innovation and low-carbon technology CapEx subsidies; **Carbon Contract-for-Difference** TotEx subsidy

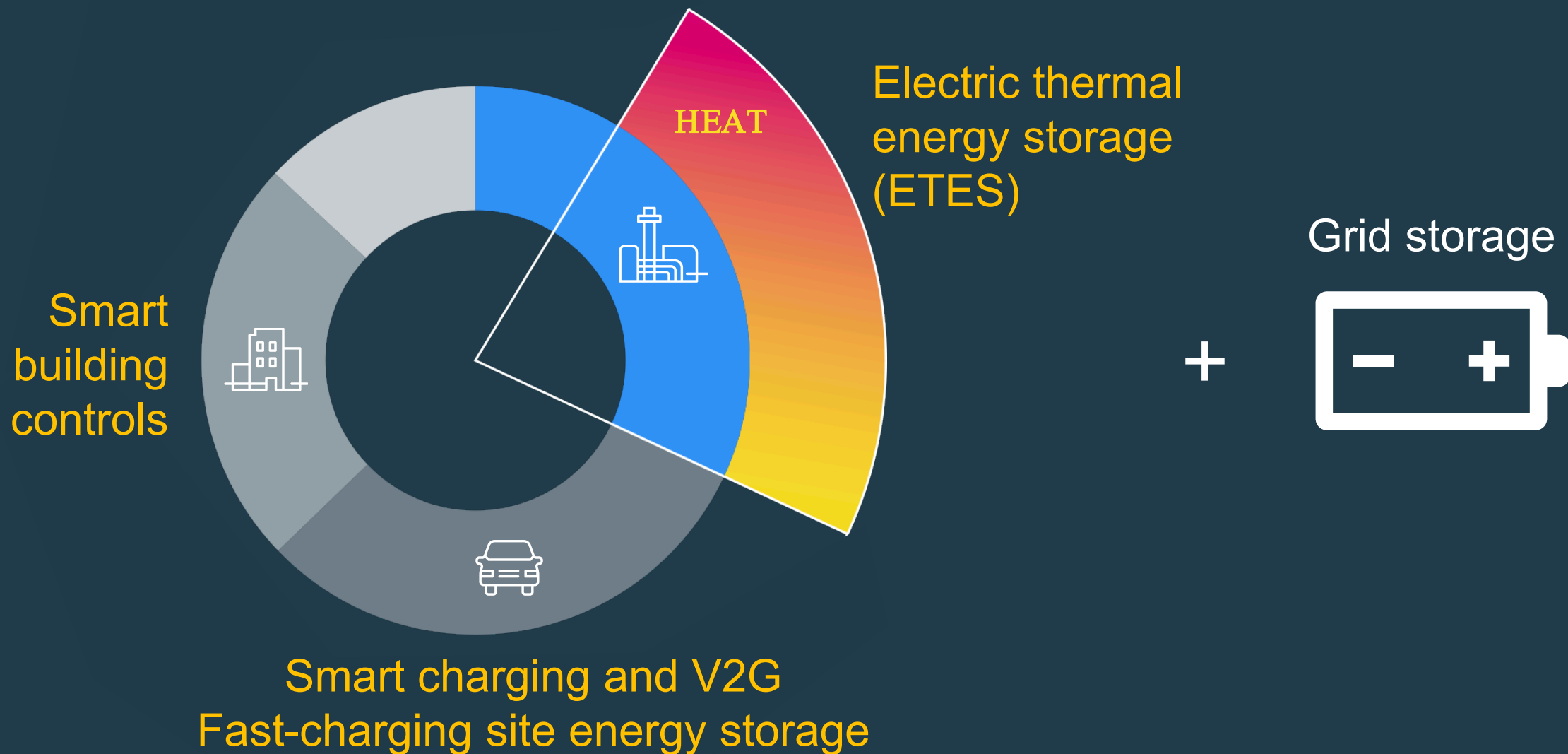
Corporate 2030 push

SBTi commitments made, stringent targets to 2030; flexible electric aligns with generation profile of zero-carbon power – **zero scope 2 emissions**

Flexible asset grid and off-grid access

Congested grids have unused capacity to integrate flexible demand; off-grid can directly pair intermittent renewables with completely flexible demand

The future is electric and flexible



Thank you

