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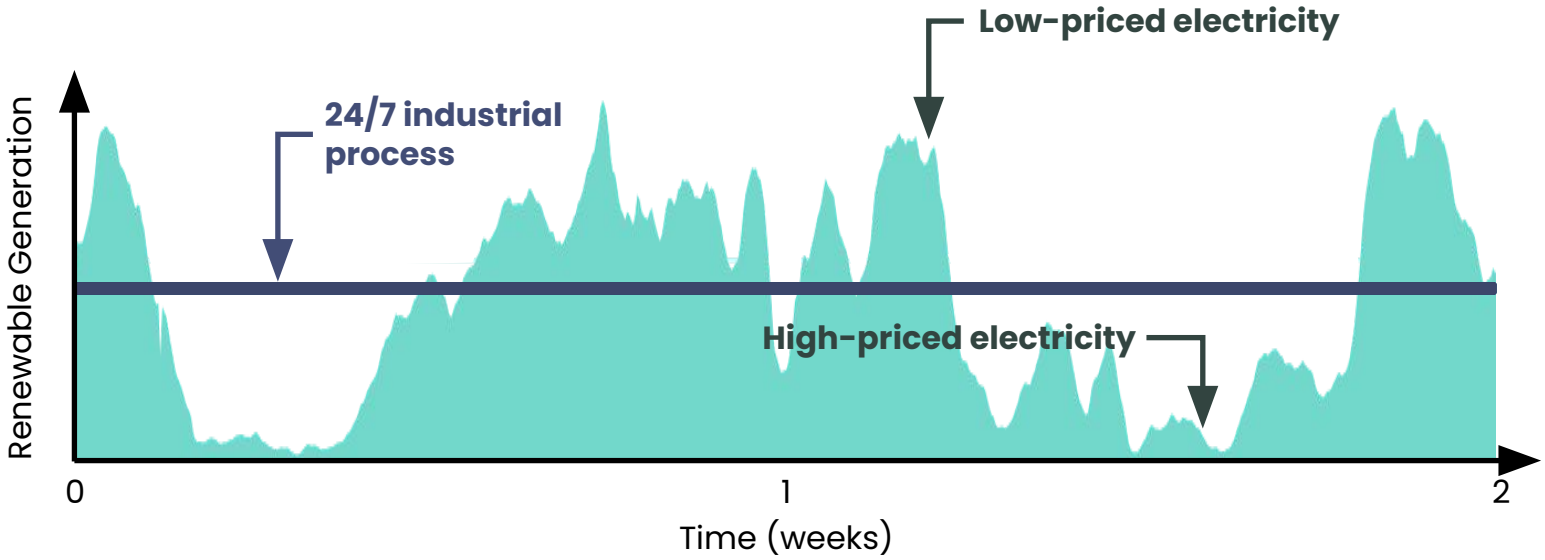
Decarbonizing industrial energy with cheap, clean electricity

Wind and solar represent the lowest cost sources of industrial energy

But intermittency in renewable power is incompatible with industrial requirements

Industrial processes require reliable energy inputs and can't afford to shut down when a cloud passes by...

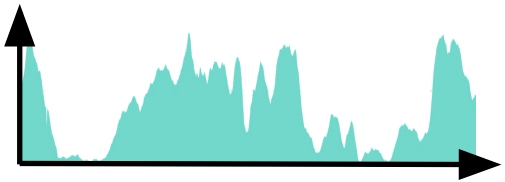


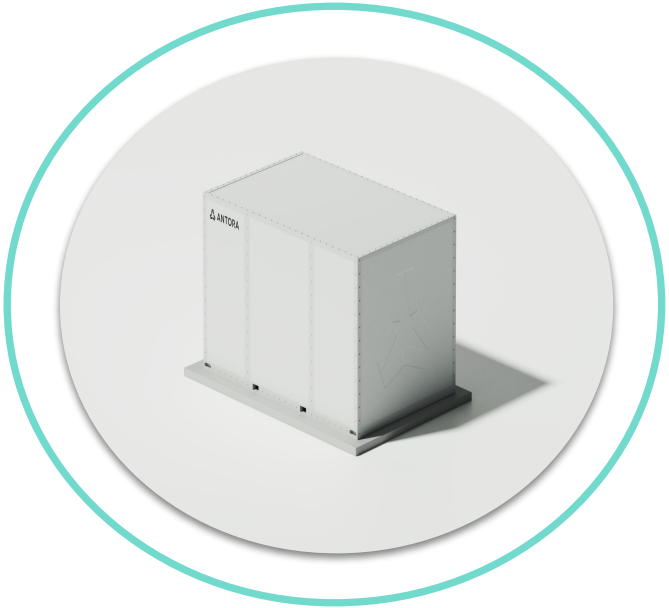
Antora converts intermittent renewables to continuous, reliable process heat and power

Proprietary multi-day thermal energy storage product unlocks full potential of renewable resources to minimize operating costs and carbon emissions

Input:

Cheap, clean, intermittent renewables



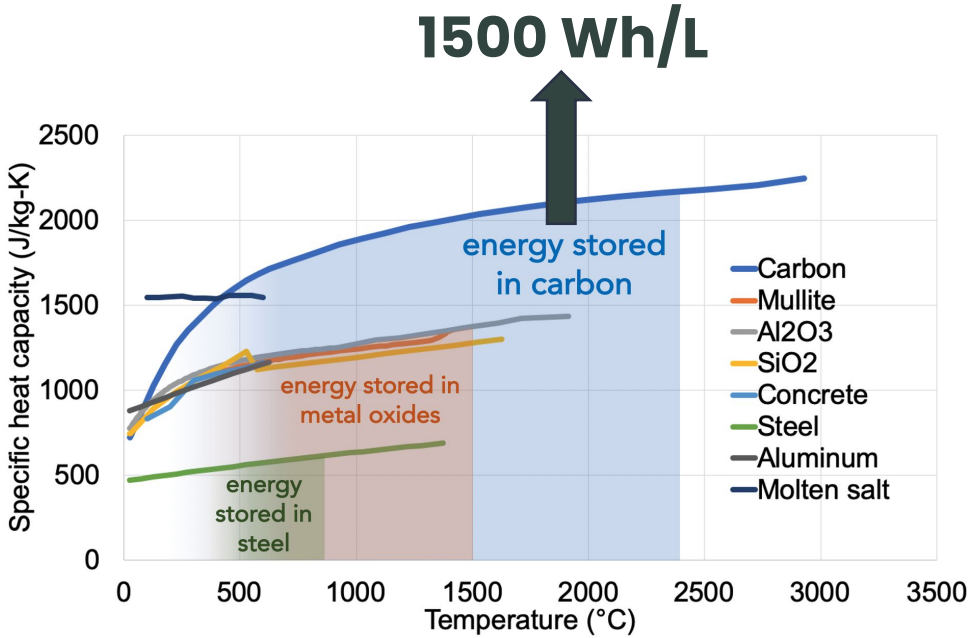


Output:

Cheap, clean, reliable heat and power

Why carbon? Low cost, highly scalable, excellent properties.

- Ultra low cost ($1/kWh$_{th}$)
- Existing supply chain
- High thermal conductivity
- Access to high temps
  - High energy density
  - Cement, steel, glass
- High specific heat



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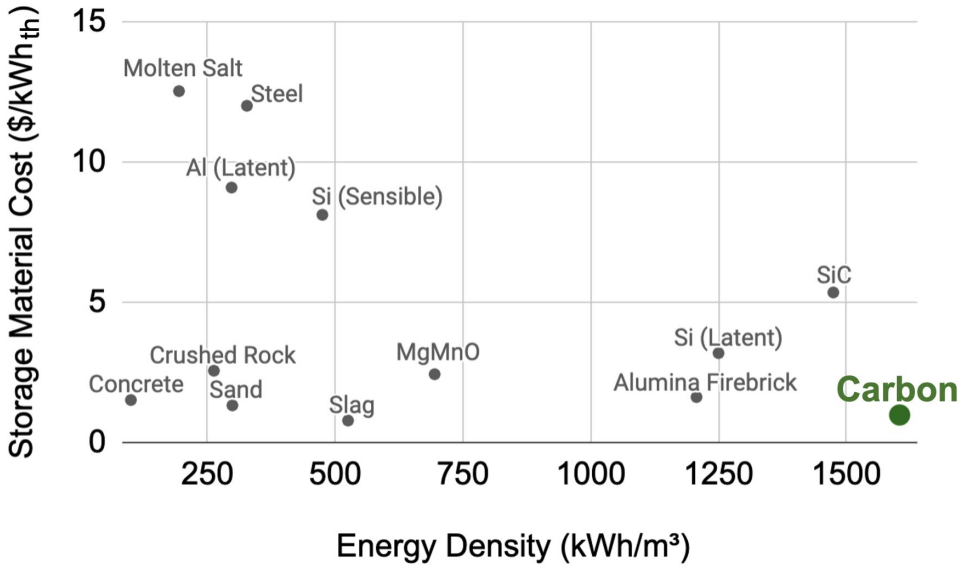

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Carbon is a stellar storage medium because it is:

simple

energy dense

scalable

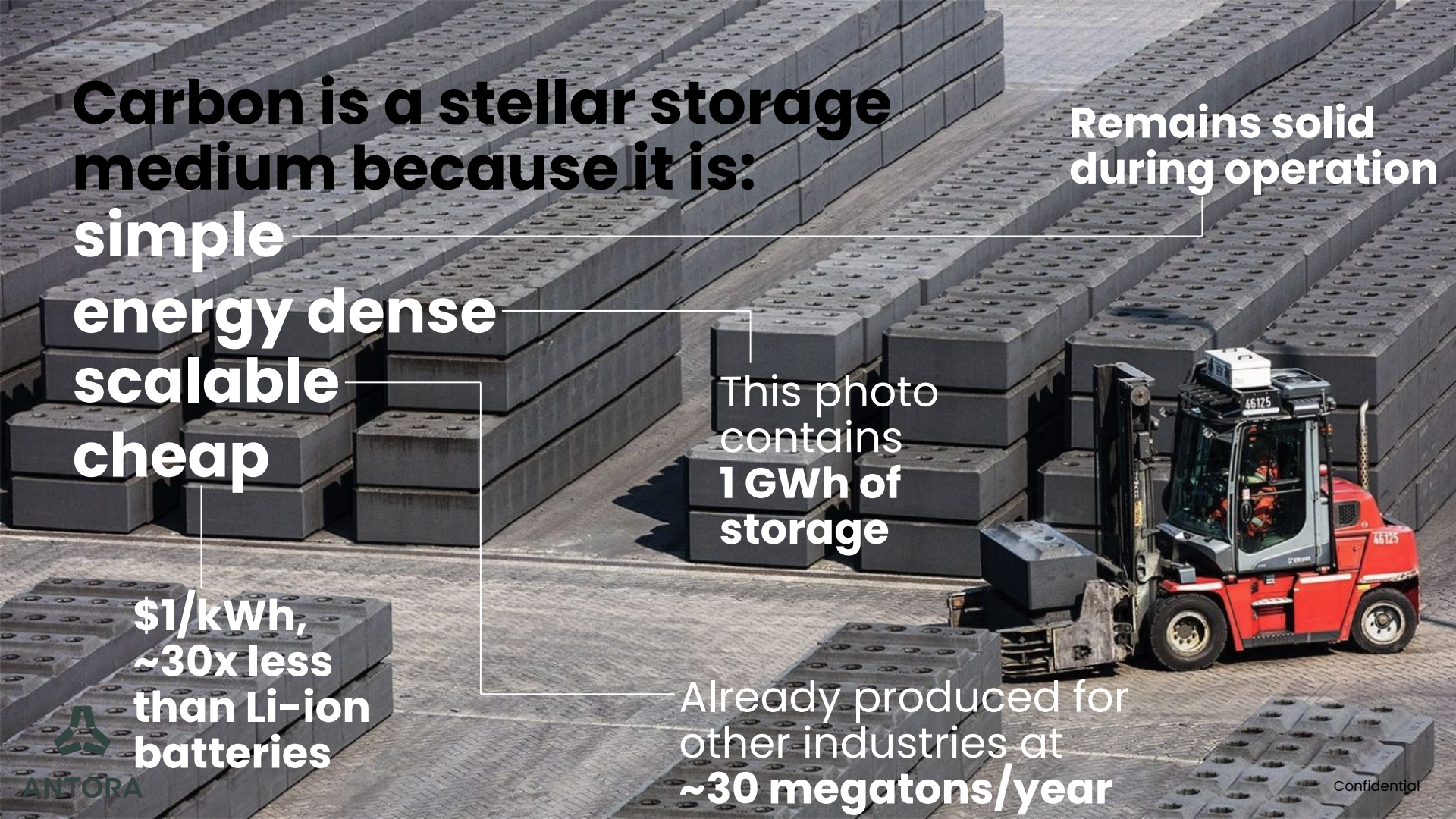
cheap

Remains solid during operation

This photo contains **1 GWh of storage**

$1/kWh, ~30x less than Li-ion batteries

Already produced for other industries at **~30 megatons/year**



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Reconfiguration of proven industrial technology

Product adapted from graphitization furnace with addition of insulated enclosure and energy extraction system

Demonstration system

Antora is currently building a pilot unit at the site of a CA IPP to demonstrate the product.

The pilot is representative of Antora's repeating module that is the basis of all projects under development.

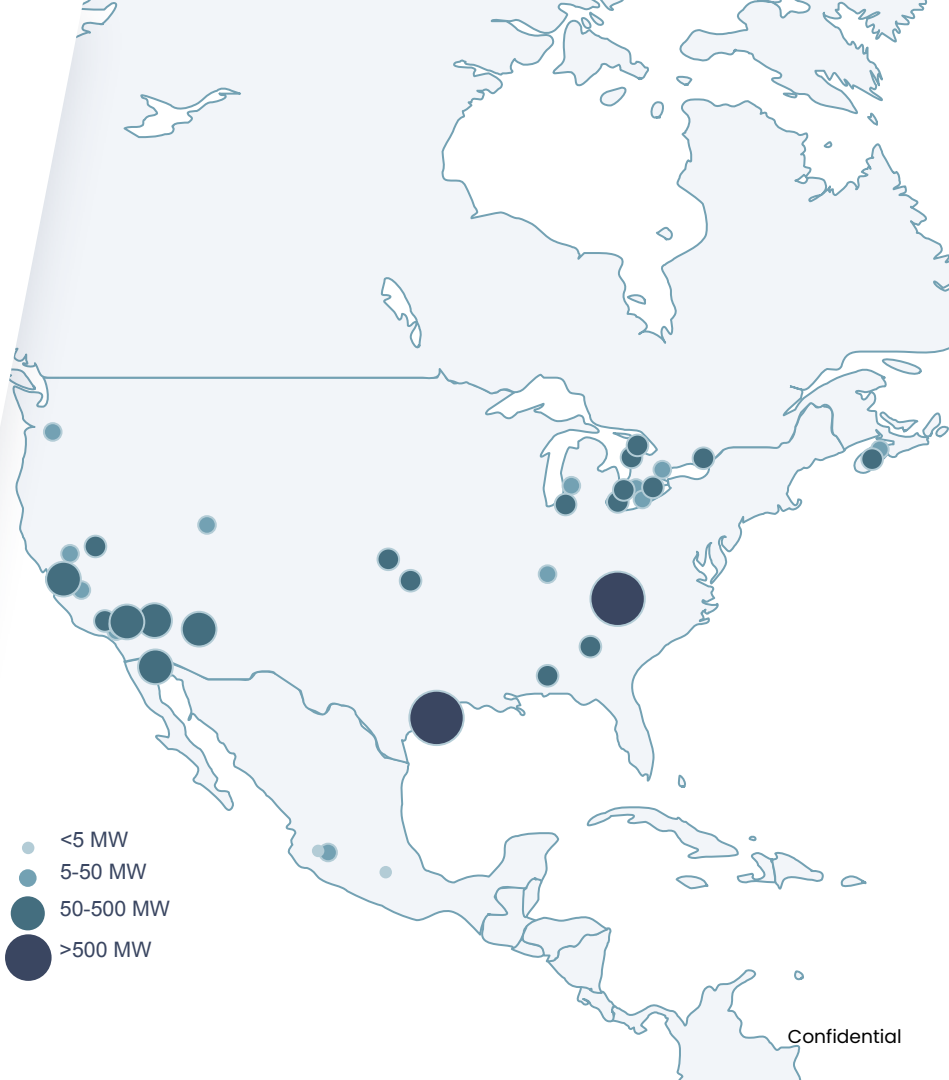
The system will demonstrate real-world dispatch based on market conditions, outputting a controlled flow of process heat and electricity.

Demonstration system

We have a pipeline of over 2 GW of storage projects identified

Ethanol & chemicals	Paper & pulping
Food & beverage	District heat
Agriculture	Oil & gas
Mining	Power sector
Cement	Automotive

>1 GW of customer LOIs



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Other possible slides to include below, either as backup or as primary

Antora provides on-demand clean power and heat—cheaper than fossil

- 24/7 resilient heat and power, with zero emissions, across nearly all US manufacturing verticals and the grid.
- Industrial heat up to 1500°C, in the same form the customer already uses.
- Modular, factor-built units with US manufacturing and supply chain.
- The lowest-cost pathway to zero emissions: Cost-competitive with fossil-fuels.
- Globally-scalable. No critical minerals. US-sourced storage media.

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