

Thermal Energy Storage Systems

Industry is Heating the World

Industry is heavily reliant on fossil fuels for heat and power

30%

of Global GHG Emissions from Industry

Manufacturing processes are slow to adopt clean energy sources

65%

of Industrial Heat Relies on Fossil Fuels Today

Economics favor industrial heat continuing to burn fossil fuels

5x

Grid Electricity Cost Compared to Fossil Fuel Cost at Plant

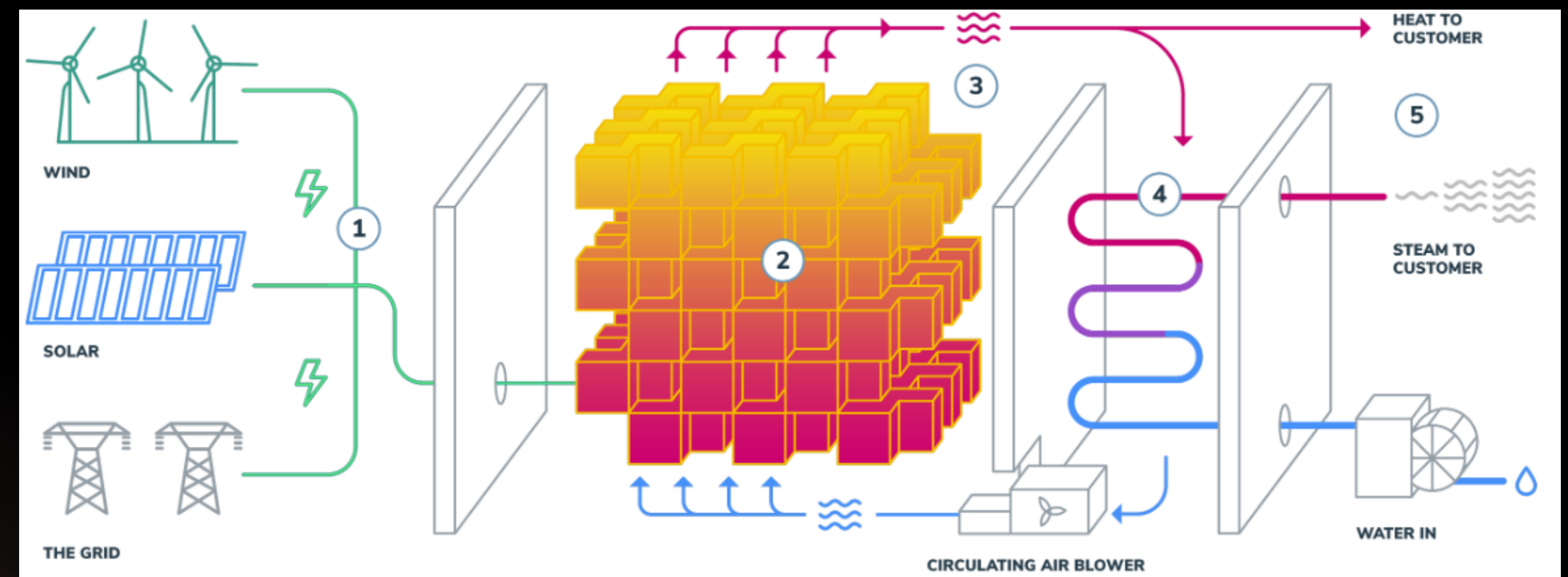
Thermal Energy Grid Storage (TEGS)

Store Heat when Energy is Cheap:

Heat carbon blocks during day when solar is available to support 24hr industry operations.

Heat Output as Steam or Air:

Industrial uses include chemical plants, concrete production, oil refineries, and steelmaking.



Current TEGS Products

Rondo Heat Battery:

Up to 1500°C | Outputs Heat and Steam



Antora HeatCore:

Up to 400°C | Outputs Heat



Antora Heat and Power (In Development):

Up to 400°C | Outputs Heat and Electricity

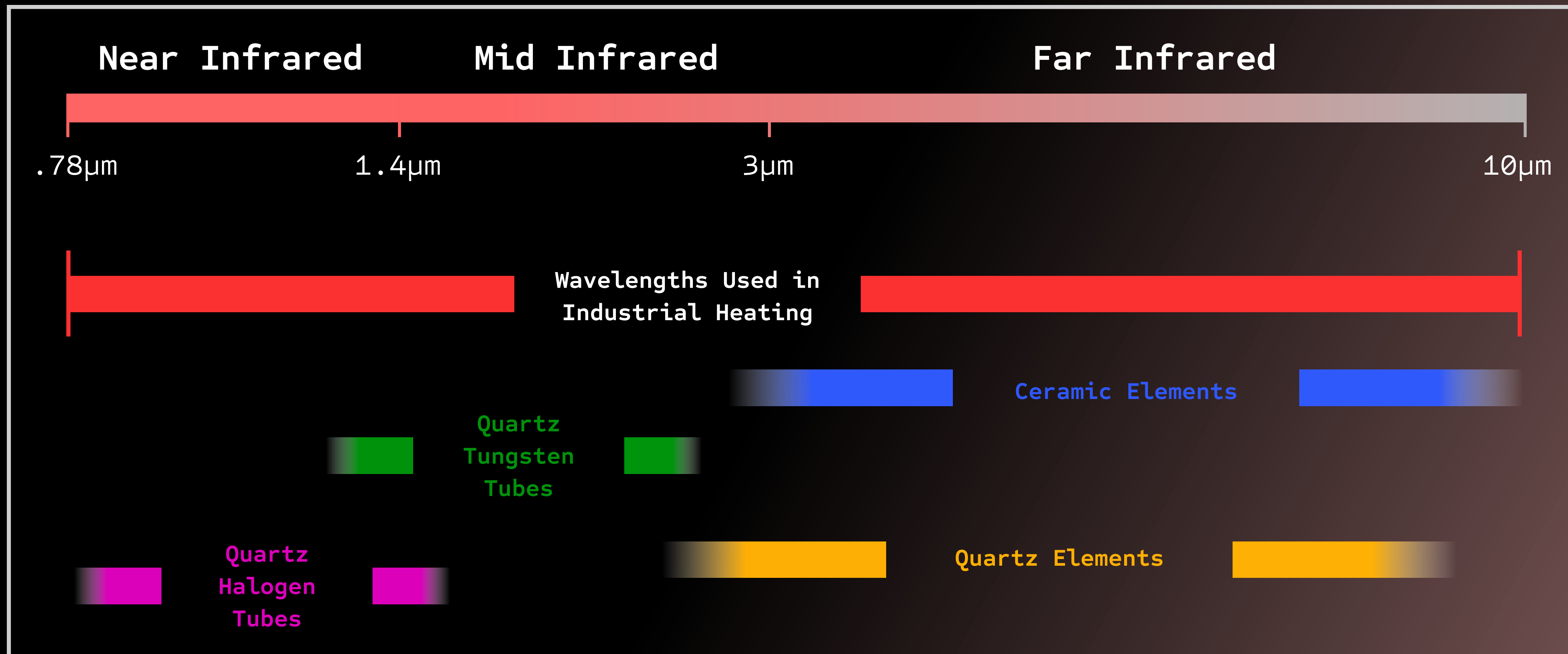
Requires Thermally Resilient Emitters for Thermophotovoltaic Panels

[HTTPS://RONDO.COM/HOW-IT-WORKS](https://rondo.com/how-it-works)

[HTTPS://WWW.ANTORA.COM/SOLUTIONS](https://www.antora.com/solutions)

Industrial Heating Emitters

No Emitters Currently Serve the Entire Industrial Heating Spectrum



Patent Velocity

Category	Patents	Growth*	Top Applicants
Thermal Energy Storage and Management Systems	2470	18x	Omnitek Partners Rondo Energy Eaglepicher Technologies
Photovoltaic Conversion of Infrared, Visible, and Ultraviolet Radiation	983	11x	7ac Technologies Mtpv Power Corporation Emerson Climate Solutions
Thermophotovoltaic Emitter Technologies	677	8x	Solaero Technologies Rondo Energy Emcore Solar Power
Laser-Fabricated Emitters for Thermophotovoltaic Applications	82	10x	Massachusetts Institute of Technology University of Penn Lockheed Corp

*2000-2023 Patent Application Volume

Market Size in 2028

Thermal Energy Storage - \$19B in 2022, \$50B in 2028 (CAGR ~ 17.2%)

Industrial Uses:

Chemical Production

Oil Refineries

Cement Production

Steelmaking

Food Processing

Paper Manufacturing

Textile Manufacturing

Mining

\$50B in 2028

\$19B in 2022