

# Forecasting Industrial Load Electrification

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# Industrial Electrification Market Potential

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### Intermittent wind and solar power now provide the lowest cost energy in history



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### But intermittent power needs to be stored as heat and delivered continuously for industrial use





## Electric thermal energy storage is a \$2T+ market

#### **RONDO ANALYSIS**

#### **Industrial ETES Market:**

- 41 TWh storage
- \$2T CAPEX



#### **TESLA ANALYSIS – APRIL 2023**

#### **Industrial ETES Market:**

- 46 TWh storage (>air+sea 2x grid)
- \$3.8T CAPEX

Vehicle & Stationary Batteries (TWh)



Table 10: Storage Waterfall



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#### **TESLA ANALYSIS – APRIL 2023**

#### Vehicle & Stationary Batteries (TWh)



Source: Tesla Master Plan 3

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# Rondo's Solution

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### Our storage materials have been in use for 200 years







### Brick stores the heat. Radiant heaters and air move it.



#### Rapid **radiant** charging via heavy industry electric **heaters**



#### Continuous **heat output** from heat stored in blast furnace **brick**



### Key Performance Parameters



Rondo patents pending.

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### Our first two commercial units are in production





Pilot - 2 MWh Operating **RHB100 - 120** MWh 2H 2023



# Target Applications, Potential Grid Loads

### US Target Market

356 GW<sub>avg</sub> Industrial thermal load

1,200 GW Current US generating capacity

> 15,000 MT/yr = 6 MW-th average





### Example CHP Customer: Cheese Production in CA

~7 MW Electric Load

~30 MW Thermal Load





### Ideal Market: Southwest Power Pool





## **Typical Grid-Connected Configuration**

- Fully interruptible; can be dispatched flexibly any time of day
- Typically need energy prices of <\$30/MWh for 6 hours/day
- 16 average MW of new demand per project





## **Typical Renewable CHP Configuration**

- Economics favor Behind-the-Meter configuration
- Provides for nearly 100% of their power and heat requirements
- Customer likely to convert to standby tariff or go off-grid entirely
- Load loss implications for utilities



