Rondo Energy, Inc.
rondo.com

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Deputy Executive Officer
California Air Resources Board

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Via electronic submittal: Cap-and-Trade Comment Docket

Re: Rondo Energy, Inc. Comments to June 14, 2023 Workshop: Potential Regulation Amendment Concepts

Rondo Energy, Inc. (Rondo) appreciates this opportunity to submit comments regarding regulatory amendment concepts to the Cap-and-Trade regulation. Rondo supports CARB's ongoing efforts to solicit the latest information and the lowest-cost, lowest-risk pathways to achieve California's climate, environmental, and economic goals. We were pleased to see several slides focused on industrial emissions and industrial decarbonization[1].

In 2006, this Legislature passed AB 32 to send California on a path to reduce its greenhouse gas emissions. Now the state has a 2045 carbon neutrality goal that can only be achieved with the reduction of GHGs from the "hard-to-decarbonize" industrial sector. Rondo was founded with the idea of providing global policymakers a critical tool to address the industrial decarbonization challenge.

Rondo is a California-based thermal energy storage (TES) company delivering zero-carbon heat for industrial processes, including for fuels, cement, glass and food and beverage manufacturing facilities. TES systems, such as the Rondo Heat Battery, charge intermittently from an electricity source upon command, store the energy from that electricity as high-temperature heat (often in solid materials), and deliver the stored energy on demand as 24-7, consistent, high-temperature heat to industrial processes, replacing large-scale combustion of coal, oil, and natural gas for process heating. The 2022 Scoping Plan Update highlights the need to replace traditional combustion technology, and Rondo is proud to be on the front edge of this transition.

Historically, it has been difficult to reduce industrial GHG emissions because of a lack of industrial heat solutions that can cut across various industries. The emergence of TES technologies provides an immediately feasible, cost-effective, and equitable way to decarbonize across the numerous and diverse industries that collectively contribute a significant portion of California's GHG emissions.

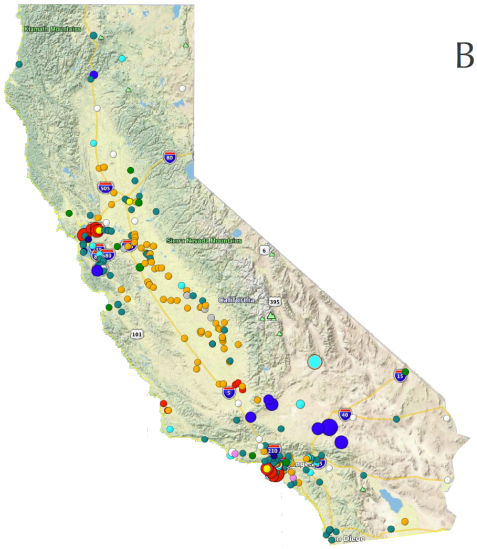
There are myriad benefits to generating industrial heat with renewable energy instead of fossil fuels. In addition to the significant GHG emissions reductions, eliminating combustion for thermal loads has direct local air quality benefits in the state's most impacted communities.

It is clear that enormous amounts of low-cost, zero-carbon industrial energy are needed to keep California's economy growing without sacrificing its climate goals. Fossil fuel burning for industrial heat today is significant (see graphic below) and has been one of the areas previously deemed to be "hard-to-decarbonize" in the transition to a zero-carbon future.

[1] https://ww2.arb.ca.gov/sites/default/files/2023-06/nc-CapTradeWorkshop_June142023_0.pdf

An important tool is now available to solve this issue of industrial heat: high-efficiency thermal energy storage systems coupled with renewable (wind and solar generated) electricity. Renewable power has become the lowest-cost source of energy humans have ever known, and will continue to drop in costs for decades to come. Intermittent zero-carbon electricity is now cheaper than burning fossil fuels. The simplest, fastest, cheapest path to industrial decarbonization is to replace fossil fuel with wind and solar power via technology that removes its intermittency and delivers reliable, continuous high temperature heat that industry requires at high efficiencies.

Statewide, Multi-Industry Impacts



By Industry

• Refining	478 TBtu
• Cement	118 Tbtu
• Hydrogen	48 TBtu
• Metals & minerals	37 Tbtu
• Food & Beverage	35 TBtu
• Manufacturing/Other	31 Tbtu
• Electricity	18 TBtu
• Paper	13 Tbtu
• Glass	9 TBtu
• Cogeneration	1 TBtu
• Biofuel	0.8 TBtu

In addition to their industrial decarbonization potential, thermal energy storage technologies can also provide important services when connected to the electricity grid: providing large-scale load flexibility that participates in eliminating curtailment, stabilizing voltage and frequency, and absorbing the variability of wind and solar generation. These TES technologies deliver large-scale, continuous energy services without presenting any load to thermal generation assets, and without increasing any peak loads or generator ramp rates; that is, they are fully, instantaneously dispatchable in their input power. They thus present a new class of resource capable of leveraging their unique attributes to provide services to wholesale electricity markets.

Though the details surrounding slide #29—"Other Potential California-Specific Topics" were not presented, Rondo is ready to assist CARB and other state agencies on this front of determining what policy 'mechanisms' are needed for successful industrial decarbonization. We have an operating TES system today in California that is currently lowering the carbon intensity of fuels used in state. Additionally, Rondo has other projects in various stages of development around the globe. These worldwide projects are in diverse sectors from mining to cement to fuel production.

Conclusion

There are myriad benefits to generating industrial heat with renewable energy instead of fossil fuels. In addition to the significant GHG emissions reductions, eliminating combustion for thermal loads has direct local air quality benefits in the state's most impacted communities. The strength and stability of the Cap-and-Trade program are at the heart of this transition.

Whether it is providing input to an industrial “leakage study”, developing policy mechanism, working across state agencies or understanding the full benefits TES, Rondo is available and willing to assist the state.

Thank you for the opportunity to provide these comments. We look forward to continued discussions.

Sincerely,
/s/

John O’Donnell
CEO, Rondo Energy, Inc.