Rondo Energy, Inc.
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Submitted electronically via the Federal eRulemaking Portal

Internal Revenue Service
CC:PA:LPD:PR (Notice 2022-58)
Room 5203, P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

To Whom It May Concern,

Re: Rondo Energy, Inc. (Rondo) Comments in Response to the Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production (Notice 2022-58)

Rondo appreciates this opportunity to submit comments concerning Sections 45V and 45Z of the Inflation Reduction Act. Rondo strongly supports the Department of the Treasury (Treasury Department) and the Internal Revenue Service (IRS) in their effort to solicit comments with respect to these sections. For ease, we provide specific answers to the questions below.

> ***Question (7) for Section 45Z: Please provide comments on any other topics related to § 45Z credit that may require guidance.***

Rondo is an American company that has developed an innovative long-duration energy storage technology to deliver zero-carbon heat and/or electricity to a wide range of industrial processes. The Rondo Heat Battery (RHB) captures intermittent electricity, stores the energy from that electricity as high-temperature heat in brick materials, and delivers the stored energy on demand as high-temperature heat and/or electricity. The RHB stores heat energy at temperatures up to 1500°C for hours or days—enabling use cases such as steel, cement, and chemical manufacturing, as well as transportation fuel production. The RHB meets the demanding needs of industry for safe, simple, low-cost energy and economically replaces fuel-fired furnaces and boilers—unlocking energy prices for America's industries that are both affordable and more predictable. When connected to the grid, the RHB can make use of otherwise curtailed solar and wind energy, cut the cost of clean energy, and strengthen grid stability and security. Rondo is manufacturing its heat batteries in its facilities in Hayward and Alameda, California and has begun commercial deliveries.

Rondo respectfully requests that the Secretary ensure that the emissions factors for transportation fuels incorporate measurements and/or estimates of the hourly carbon intensity of any facility electrification. Failure to use such real-time electricity emissions could result in false claims of emission reductions. For instance, a facility could otherwise replace a natural gas boiler with an electric boiler and run it off the grid during hours when coal and natural gas is predominantly being combusted (for grid electricity) and harvest the tax credits, despite not actually reducing overall emissions. The current use of merely *average regional* (instead of *hourly*) factors for the calculation of electricity supply carbon intensity in the GREET model risks *unintentionally increasing* carbon emissions. Furthermore, any allowed use of renewable energy credits to reduce the emission factors, if not locally-generated and hourly-matched, also risks such unintentional consequences.

In the alternative, if hourly emissions are not factored into emissions factors calculations, Rondo respectfully requests that the calculation of such emissions factors be based on the same electrification assumptions that are ultimately used in Section 45V for clean hydrogen credits. Doing so would ensure that carbon accounting methodologies deployed are consistent across technologies and no single technology is unfairly advantaged simply due to different accounting practices.

In addition to the above, Rondo respectfully recommends that the Secretary provide a clear process, pathway, and timeline for obtaining the credits in Section 45Z. Emissions reduction projects at industrial facilities take time to develop, finance, and build. Providing certainty of specific projects obtaining credits *before* 2025 will be critical to ensuring that these tax credits spur the emissions reductions that the Inflation Reduction Act was adopted to provide.

> ***Question (1)(e) for Section 45V: How should qualified clean hydrogen production processes be required to verify the delivery of energy inputs that would be required to meet the estimated lifecycle greenhouse gas emissions rate as determined using the GREET model or other tools if used to supplement GREET?***

Rondo requests that the Secretary issue guidance to clarify that the Section 45V lifecycle greenhouse gas emissions rates incorporate measurements and/or estimates of the *hourly* emissions intensity of the electricity used to produce the hydrogen.

Failure to use hourly emissions (or tightly matched certifications of hourly and spatial-matching for renewable energy credits) could result in false claims of emission reductions and in many cases even directly subsidize dramatic increases in greenhouse gas emissions. Indeed, a recent study from Princeton's ZERO Lab on hydrogen production with grid-connected electrolysis found that a lack of hourly and spatial matching could directly incentivize large increases in CO2 emissions.[1]

As such, Rondo respectfully suggests that:

1. Scope 2 emissions measurement for grid-sourced electricity be based on hourly average emissions factors; and that
2. Indirect (i.e. book-and-claim) accounting mechanisms are limited to hourly-matched generation from a local generator.

For grid-sourced electricity, Rondo recommends that guidelines are established that incorporate measurements and/or estimates of the hourly average emissions intensity of electricity for the local grid. An hourly basis for accounting incorporates sufficient resolution to capture the important time-variable features of a grid with significant generation from variable wind and solar resources, but is also tractable

[1] *See* Ricks, Wilson, Xu, Qingyu, & Jenkins, Jesse D. (2022). Enabling grid-based hydrogen production with low embodied emissions in the United States. Zenodo. https://doi.org/10.5281/zenodo.7183516. *See also* Ricks, Wilson, Xu, Qingyu, & Jenkins, Jesse D. (2022). Minimizing emissions from grid-based hydrogen production in the United States. https://zenodo.org/record/7349406#.Y4uDIHbMJdh.

from a compliance standpoint. Multiple methodologies for assessing hourly electricity emissions intensity are in use and being developed in national laboratories, universities, and industry. While in years past, an annual average carbon intensity of electricity, reflective of the varying sources of electric power, was suitable for Scope 2 emissions assessments, the grid is rapidly changing, and this approach is no longer adequate. In parts of the grid where renewable power is abundant, average emissions factors at times may be at or near zero, whereas at times when renewables are not available, emissions may be significantly higher than the annual average. Requiring an hourly emissions factor to calculate emissions reflects the strong and increasing importance of the temporal variance of emissions on the grid. Preserving this signal of variable emissions factors will properly incentivize investment in production strategies that align power consumption with low-carbon power generation and ultimately reduce greenhouse gas emissions.

Likewise, requiring any indirect or book-and-claim accounting mechanisms (such as renewable energy certificates or zero-carbon energy certificates) to meet hourly matching requirements from a local resource will ensure carbon reduction claims match reality and preserve the incentive to invest in systems that align power consumption with low-carbon power generation.

Rondo Energy appreciates the opportunity to provide these comments. If you or your staff would like to discuss the contents of these comments, please contact John O'Donnell, CEO, at john@rondo.com. We look forward to the opportunity to discuss implementing the various provisions of the IRA with you.

Respectfully Submitted,

John O'Donnell
CEO
Rondo Energy, Inc.