Iron fuel startup seeks partner for siting industrial production facility with hydrogen access

Summary

Profile type
Technology offer

Company's country
Netherlands

POD reference
TONL20250328006

Profile status
PUBLISHED

Type of partnership
Commercial agreement with technical assistance

Targeted countries
• World

Contact Person
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Term of validity
28 Mar 2025
28 Mar 2026

Last update
28 Mar 2025

General Information

Short summary

A Dutch cleantech start up is seeking a partner with a suitable site to establish a production facility focused on industrial decarbonization through metal fuel regeneration. The ideal location should have access to hydrogen, sufficient space, and a reliable electricity supply.

Full description

This cleantech company based in The Netherlands, develops an iron fuel technology for industrial decarbonization through metal fuel regeneration. This solution provides a cost-competitive and low-carbon alternative for industrial heat applications by utilizing the oxidation and regeneration of iron powder. This process enables a circular energy system where iron powder is combusted to release high-temperature heat and later regenerated using hydrogen, creating a sustainable fuel cycle.

To establish their next production facility, the company is now looking for a partner with a suitable site that has access to a hydrogen source, adequate space for production and logistics, and a reliable electricity supply. The ideal partner would also support the operational setup, ensuring the necessary infrastructure is in place to scale our technology and accelerate industrial decarbonization.

As a global leader in the iron fuel sector, they have a proven customer traction and a technology readiness level of

6/7. This solution fills a crucial gap that existing alternatives, such as on-grid hydrogen and electrification, cannot address. By offering a sustainable and scalable solution independent of existing power infrastructure, the iron fuel technology provides industries with an efficient and flexible pathway to decarbonization.

Advantages and innovations

CO_2-Free Combustion: The combustion of iron powder releases substantial energy without emitting carbon dioxide, effectively reducing greenhouse gas emissions.

Circular Energy Process: technology operates on a sustainable cycle where iron powder is combusted to produce heat and then regenerated from rust using hydrogen, allowing for repeated reuse and promoting resource efficiency.

High Energy Density: Iron fuel boasts a high energy density, facilitating efficient storage and transport, which is particularly beneficial for industries requiring substantial energy in compact forms.

Ultra-Low NOx Emissions: The combustion process of iron fuel results in ultra-low nitrogen oxide emissions, minimizing air pollutants and contributing to cleaner industrial operations.

Cost-Competitive: iron fuel offers a cost-effective energy solution that competes favorably with other clean technologies, providing an economically viable path for industries aiming to reduce their carbon footprint.

Safety and Ease of Handling: Iron fuel is safe to store and transport, posing no significant hazards, which simplifies logistics and reduces associated costs.

Technical specification or expertise sought

Stage of development

Under development

IPR Status

IPR granted

IPR Notes

Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 7: Affordable and Clean Energy**

Partner Sought

Expected role of the partner

This SME is seeking partners to help site their production facility. The partner should provide access to land with adequate space for production and logistics of our technology, as well as a reliable electricity supply. Additionally, the partner may support the operational setup by assisting with regulatory compliance, permitting, and connecting with local stakeholders. An ideal partner would also have experience in industrial operations, energy infrastructure, or sustainable technology, enabling effective collaboration to scale our metal fuel regeneration process and drive industrial decarbonization. The partner may be a company, government entity, or industrial park with the necessary infrastructure to support our operations.

Type of partnership

Commercial agreement with technical assistance

Type and size of the partner

- **Big company**

Dissemination

Technology keywords

- **04002012 - Other energy related machinery**
- **04002002 - Hydrogen production**

Market keywords

- **06007001 - Other energy production**

Targeted countries

- **World**

Sector groups involved

Media

Images

Working principe with info