L-CHARGE

MACAW ENERGIES

Turning Flare Gas into Sustainable Fuel for EV Charging

Carbon Negative Fuel Sources

Summary

As the world races towards decarbonization, one of the most promising opportunities is to curb emissions by harnessing waste products such as flare gas. This byproduct of oil extraction is often burned at wellheads where it contributes significantly to environmental pollution.

Macaw Energies' LIQUIDFLARE technology transforms this otherwise harmful byproduct into a clean, liquefied natural gas fuel with a verified well-to-pump carbon intensity of -43 kg CO_2e/mmBtu (a negative rating denotes that greenhouse gases are being removed from the atmosphere or directly avoided).

L-Charge, a leader in off-grid EV charging, has successfully integrated LIQUIDFLARE as a viable fuel source for its charging stations. A recent deployment in Houston illustrates this approach, where L-Charge introduced an off-grid charging station powered by LIQUIDFLARE to serve an electric ride-sharing fleet. By repurposing flare gas that would otherwise be wasted, this installation showcases how tailored fuel solutions can enhance both sustainability and cost efficiency. Through strategic fuel integration, L-Charge provides a scalable and independent charging service, reinforcing the role of off-grid infrastructure in accelerating fleet electrification and advancing broader sustainability goals.

Flare gas opportunity - Macaw's Solution

Flare gas is a significant contributor to global greenhouse gas (GHG) emissions, releasing methane, carbon dioxide, and other harmful pollutants when burned. This practice accounts for an estimated 400 million tons of CO_2-equivalent emissions annually worldwide.[1]

Macaw Energies tackles this challenge with their F2X technology, capturing flare gas and converting it into LIQUIDFLARE, a usable and transportable form of liquefied natural gas. In this form, LIQUIDFLARE enables important clean fuel projects and reduces harmful flaring of waste gas.

Key benefits of LIQUIDFLARE:

01

Carbon Negative Credentials

With a well-to-pump carbon intensity of -43 kg CO_2e/mmBtu, LIQUIDFLARE not only avoids emissions but actively reduces the carbon footprint of industries using it as fuel.[2]

02

Environmental Impact

By preventing the flaring of gas, LIQUIDFLARE mitigates methane and black carbon emissions, which are potent contributors to global warming.

Integration with off-grid charging solutions

LIQUIDFLARE is ideally suited for powering off-grid infrastructure, such as L-Charge's mobile and fixed EV charging stations. These stations, designed to operate independently of traditional, electrical infrastructure can leverage LIQUIDFLARE to provide:

- Immediate Deployment: The use of a transportable and scalable fuel source allows rapid deployment of charging solutions in areas lacking reliable grid access.
- Sustainability in Practice: By using LIQUIDFLARE, L-Charge offers a carbon-negative alternative to grid electricity, which still relies on fossil fuels for generation in most regions.

In Houston L-Charge has deployed an off-grid charging station powered by LIQUIDFLARE, a fuel derived from flare gas that would otherwise contribute to environmental harm. This initiative supports an electric ride-sharing fleet while demonstrating a practical approach to reducing emissions. By integrating tailored fuel solutions, L-Charge enhances both the environmental and economic efficiency of its charging infrastructure, offering a scalable and sustainable alternative to traditional grid-dependent charging.

L-Charge trailer powered by carbon negative LIQUIDFLARE

Broader implications for decarbonization

Macaw Energies' LIQUIDFLARE sets a new standard for leveraging waste as a resource:

- Global Scalability: LIQUIDFLARE's portability and versatility make it suitable for applications beyond EV charging, including logistics, industrial power generation, and powering data centers.
- Economic Benefits: By turning a waste product into a valuable commodity, LIQUIDFLARE creates opportunities for cost savings and revenue generation across industries.

Conclusion

The partnership between Macaw Energies and L-Charge underscores the transformative combination of low-carbon technologies and carbon-negative fuels to reshape energy systems. By repurposing flare gas into LIQUIDFLARE, Macaw not only mitigates environmental pollution but also provides a sustainable energy source for critical infrastructure.

As industries worldwide face mounting pressure to reduce emissions, decision-makers must consider approaches that take a closed-loop approach to productively repurpose waste streams like LIQUIDFLARE. This innovative approach to waste management and clean energy integration offers a clear path towards achieving decarbonization goals and securing a sustainable future.

Keen to learn more?

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Sources:

[1]https://www.worldbank.org/en/programs/gasflaringreduction/publication/2024-global-gas-flaring-tracker-report

[2]https://www.scsglobalservices.com/news/liquidflare-innovative-liquefied-natural-gas-from-macaw-energies-achieves-verified-negative