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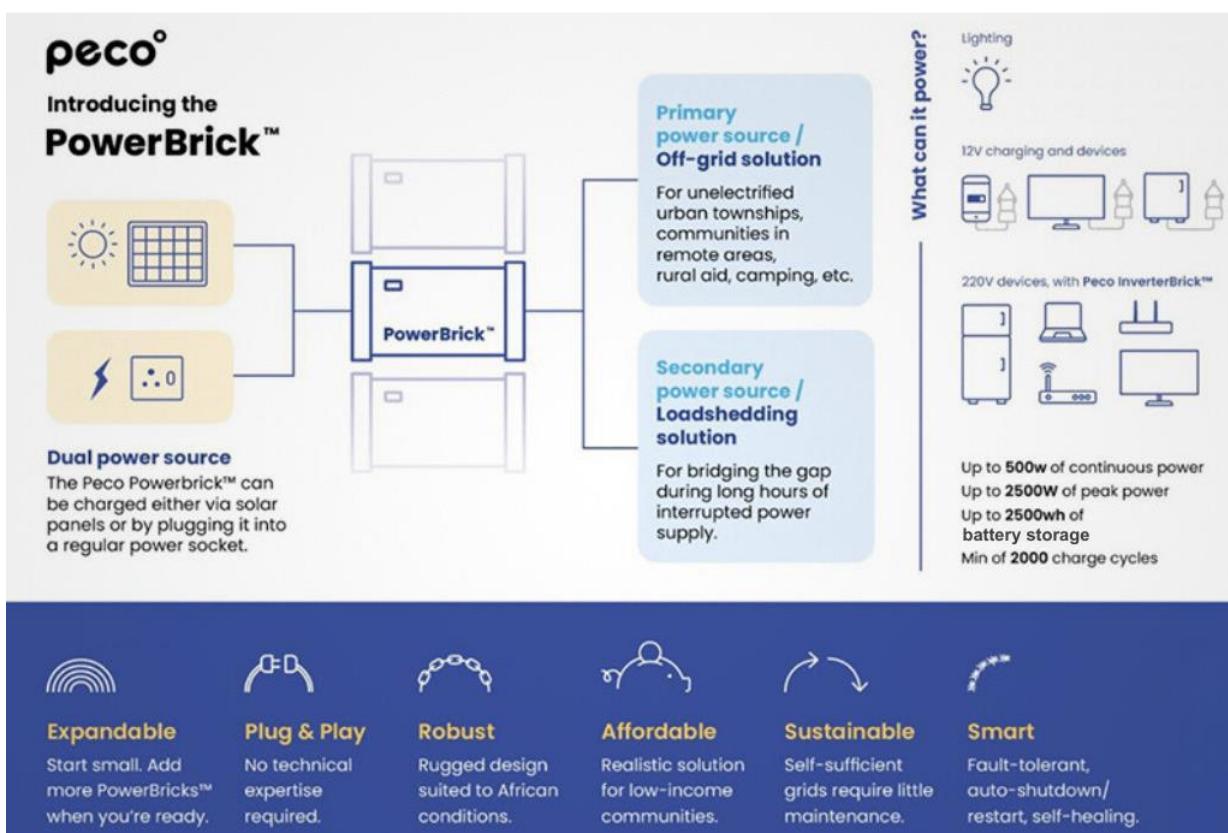


EMPOWERING COMMUNITIES: AFFORDABLE POWER SOLUTIONS

Mint Energy strives to provide affordable power solutions for rural and low-income areas. Utilizing the Peco inverter PowerBrick, Mint Energy hopes to bring electricity to millions of underserved households. Developed by Peco Power, a company emerging from Wits University's School of Electrical and Information Engineering, the compact battery system represents a significant leap in addressing energy poverty.

Introduction

Energy poverty is a critical challenge faced by millions in rural and low-income areas, hindering progress in education, healthcare, and economic development. Mint Energy, through its collaboration with Peco Power, is pleased to offer the Peco PowerBrick, a compact battery system aimed at transforming the lives of those without access to electricity.



Peco Inverter PowerBrick Overview

1. Affordability and Simplicity

The PowerBrick is accessible to low-income households, requiring no technical expertise for installation, operation, or maintenance. Its user-friendly design makes it a viable solution for a wide range of users.

2. Technical Features:

- Mini-grid scalability ranges from 70W to 500W of continuous power, with battery storage expandable from 150Wh to 2500Wh.
- Hybrid functionality allows charging through solar panels or directly from the grid.

3. Safety Mechanisms and Design:

- Built-in safety features ensure the PowerBrick's resilience in demanding conditions.
- The system enters a temporary sleep mode in case of faults or overload failures, 'self-healing' within 60 seconds after the removal of the faulty appliance.
- The mild steel powder-coated enclosure and automotive-grade fittings enhance durability.
- The unique stackable design allows for easy scaling in a variety of situations and applications.

4. Applications and Testing:

- Testing on refrigerators in Africa validates the PowerBrick's capability to power typical home appliances.
- The system's hybrid functionality makes it a versatile and efficient energy source.





Scalability and Future Endeavors

Rent-to-Own Model

The PowerBrick incorporates a rent-to-own chip, offering affordability through periodic deactivation and reactivation via SMS unlock codes.

Graphene Technology

The PowerBrick, in its initial design, harnessed the formidable capabilities of Lithium-Iron Phosphate (LiFePO₄) cells, a choice that ensured a minimum of 2,000 lifecycles. Testing is currently underway with Mint Energy's cutting-edge graphene cells. These advanced cells represent a significant leap forward, catapulting the PowerBrick's lifecycle to an impressive range of 20,000 to 43,000 cycles. This substantial increase in longevity not only extends the lifespan of the product but also enhances its overall efficiency, making it a formidable contender in the realm of energy storage solutions.

Moreover, the integration of Mint Energy's graphene cells brings about a myriad of safety benefits. By significantly reducing the risk of fire and overheating, these cells elevate the PowerBrick to a much safer level, instilling confidence in both residential and commercial settings. The adoption of graphene cell technology not only extends the product's lifecycle but also reinforces its position as a secure and reliable energy storage option for a wide range of applications.

Mint Energy expects this solution to have a profound impact on low-income, rural, and island communities.

Conclusion

The Peco Inverter PowerBrick stands as a beacon of hope in addressing energy poverty. Its affordability, scalability, safety features, and humanitarian initiatives position it as a transformative solution for millions of people. Through partnerships and funding, Mint Energy aspires to play a pivotal role in providing electricity to underserved communities, fostering positive change and sustainable development.