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New energy comes from those who have the courage to innovate.

Why invest in GQenergy?

Perché investire in GQenergy?

About GQenergy

GQenergy is an emerging company that aims to carve out a space for itself in a market currently dominated by giants such as *CATL, LG Energy Solution, Panasonic, and Tesla.* It is precisely this "outsider" position that represents our strength.

Chi è GQenergy

GQenergy è una realtà emergente che punta a ritagliarsi uno spazio in un mercato oggi dominato da giganti come *CATL, LG Energy Solution, Panasonic e Tesla.* Proprio questa posizione "outsider" rappresenta la nostra forza.

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Why Invest Now

- Fast-growing market.
- Early-stage positioning with high potential.
- Clear strategy for rapid scaling.
- Strong competitive advantage.

Perché Investire Ora

- Settore in forte espansione.
- Fase early-stage con elevato potenziale.
- Strategia chiara per scalare rapidamente.
- Vantaggio competitivo ben definito.

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Solid-state electrical generator patented under US 11,876,463 B2

Solid-state autonomous power sources are increasingly essential across IoT, structural health monitoring, biomedical patches, and smart packaging. Traditional energy storage technologies such as Li-ion batteries or supercapacitors suffer from degradation, limited lifespan, or the need for periodic recharging. The generator disclosed in US Patent 11,876,463 B2 introduces a fundamentally different approach: a solid-state voltage source based on a polymer–carbon interfacial phenomenon.

Technology	Power	Stability	Needs Light/Movement	Safety	Cost	Suitable for IoT?
Li-ion Battery	High	Medium	No	Low	Medium	✓
Supercapacitor	High	Medium	No	High	Medium	X
Indoor Photovoltaic	Low	High	Yes	High	Low	X in dark rooms
RF Harvesting	Low	High	Yes (RF field)	High	Low	X
Triboelectric N.G.	Low	Medium	Yes (motion)	High	Low	X
GQenergy Generator	Medium	Very High	No	Very High	Very Low	✓✓✓

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Physical–Theoretical Modeling

- 1 Electret Model

A dielectric with internal frozen charge distribution produces a built-in electric field:
Equation (1): $V \approx \sigma \cdot d / (\varepsilon_0 \varepsilon_r)$
Where: - σ = charge density - d = thickness - ε_r = dielectric constant

- 2 Interfacial Dipole Layer

A permanent dipole layer forms at the polymer–carbon interface:
Equation (2): $V_{interface} \approx \Delta\Phi / e$
Where $\Delta\Phi$ is the work-function difference modified by interfacial dipoles.

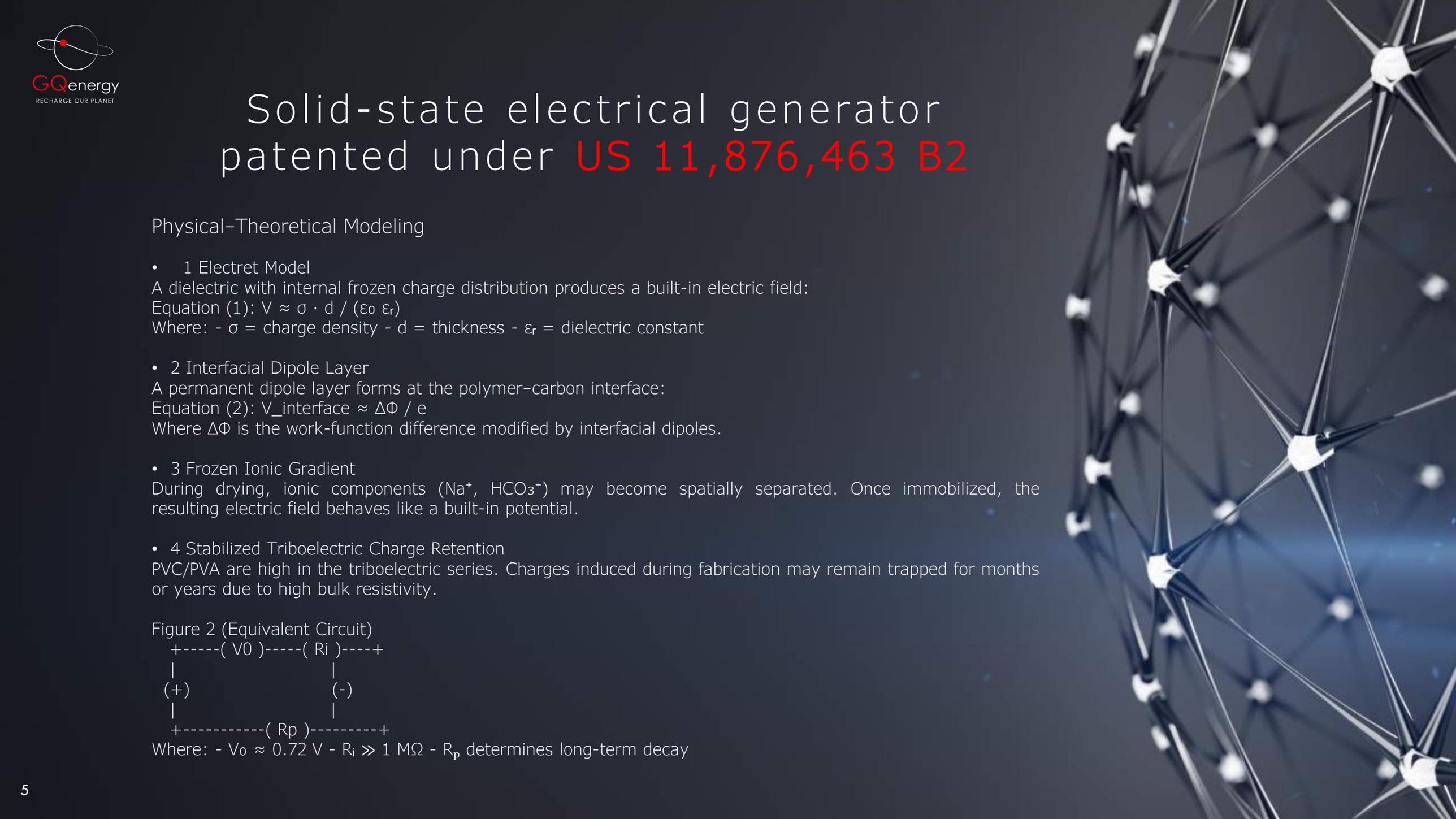
- 3 Frozen Ionic Gradient

During drying, ionic components (Na^+, HCO_3^-) may become spatially separated. Once immobilized, the resulting electric field behaves like a built-in potential.

- 4 Stabilized Triboelectric Charge Retention

PVC/PVA are high in the triboelectric series. Charges induced during fabrication may remain trapped for months or years due to high bulk resistivity.

Figure 2 (Equivalent Circuit)



Where: - $V_0 \approx 0.72$ V - $R_i \gg 1$ MΩ - R_p determines long-term decay

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Solid-state electrical generator patented under US 11,876,463 B2

Mathematical Analysis

- 1 Dielectric Polarization Field

The internal field E is: $E = \sigma / (\varepsilon_0 \varepsilon_r)$
Voltage is: $V = E \cdot d$

- 2 Charge Decay Model

Assuming leakage through Rp: $V(t) = V_0 \cdot \exp(-t / (Rp \cdot C))$
Where C is the effective capacitance: $C = \varepsilon_0 \varepsilon_r A / d$

- 3 Interfacial Dipole Contribution

Modeled using Poisson's equation: $\partial^2 V/\partial x^2 = -\rho(x)/\varepsilon$

Boundary conditions defined by carbon work function.

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Solid-state electrical generator patented under US 11,876,463 B2

Conclusions

The GQenergy solid-state generator occupies a unique category among passive power sources. Its combination of simplicity, longevity, safety, and solid-state operation suggests strong industrial potential for ultra-low-power autonomous devices. Further experimental validation will refine models and enable optimized designs suitable for mass production

References

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3. S. M. Sze, “Physics of Semiconductor Devices,” Wiley, 2006.
4. J. Bisquert, “Interfacial Charge Phenomena in Organic Electronics,” Adv. Funct. Mater., 2011.
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How much is this patent worth to an investor?

- $2M – $10M if there are no working prototypes, only the patent.
- $10M – $50M with a working prototype
- $50M– €200M if it is industrialized and demonstrates useful power for IoT or low-power applications.
- This is a strong patent asset that can support a significant valuation.

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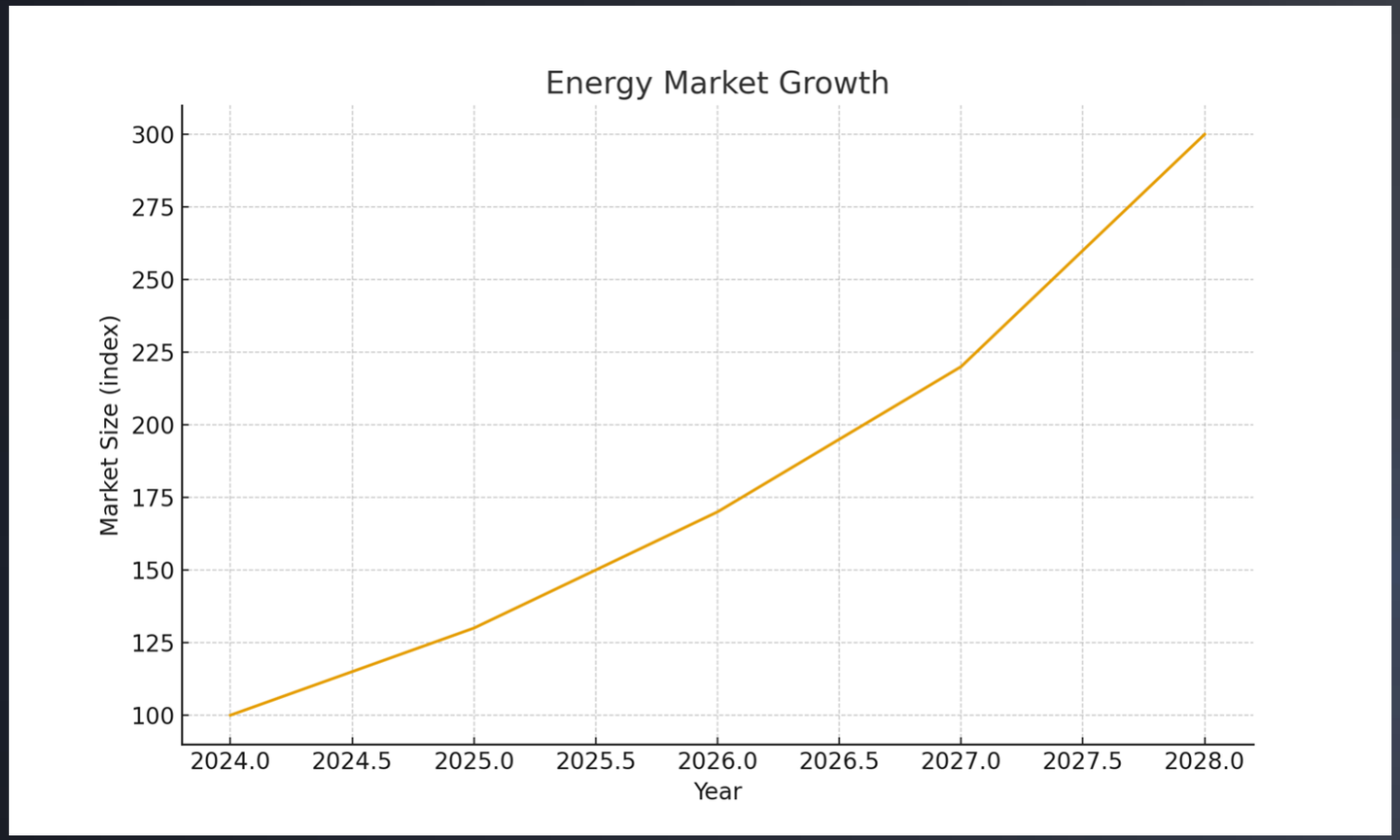
Energy Market Growth



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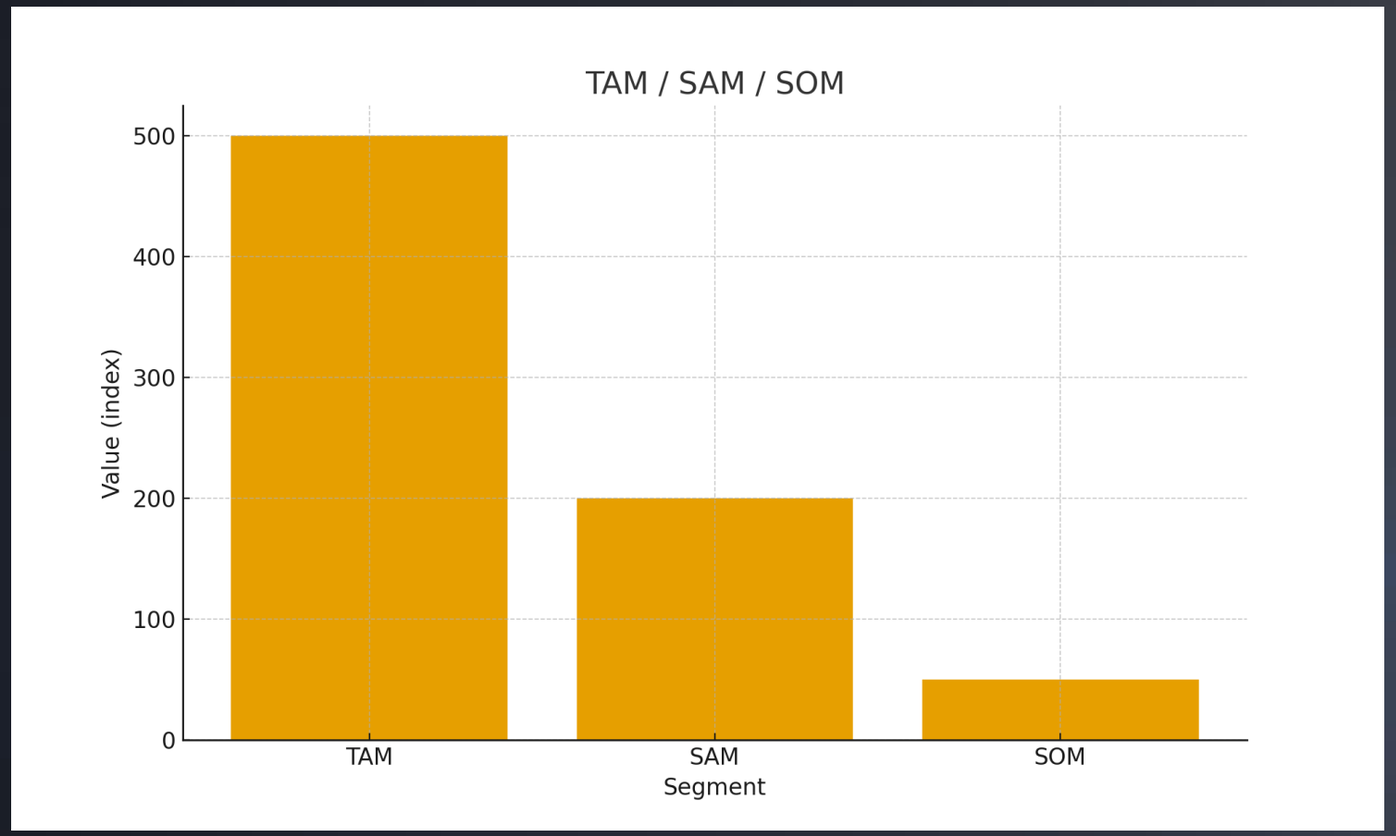
TAM / SAM / SOM



Total Addressable Market
(Mercato Totale Indirizzabile)

Serviceable Available Market
(Mercato Servibile Disponibile)

Serviceable Obtainable Market
(Mercato Servibile Ottenibile)

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Our Solution

- Modular, customizable energy solutions.
- Fast development and deployment.
- Flexible adoption of emerging technologies.

La Nostra Soluzione

- Soluzioni energetiche modulari e su misura.
- Rapidità nello sviluppo e nell'implementazione.
- Adozione flessibile di tecnologie emergenti.

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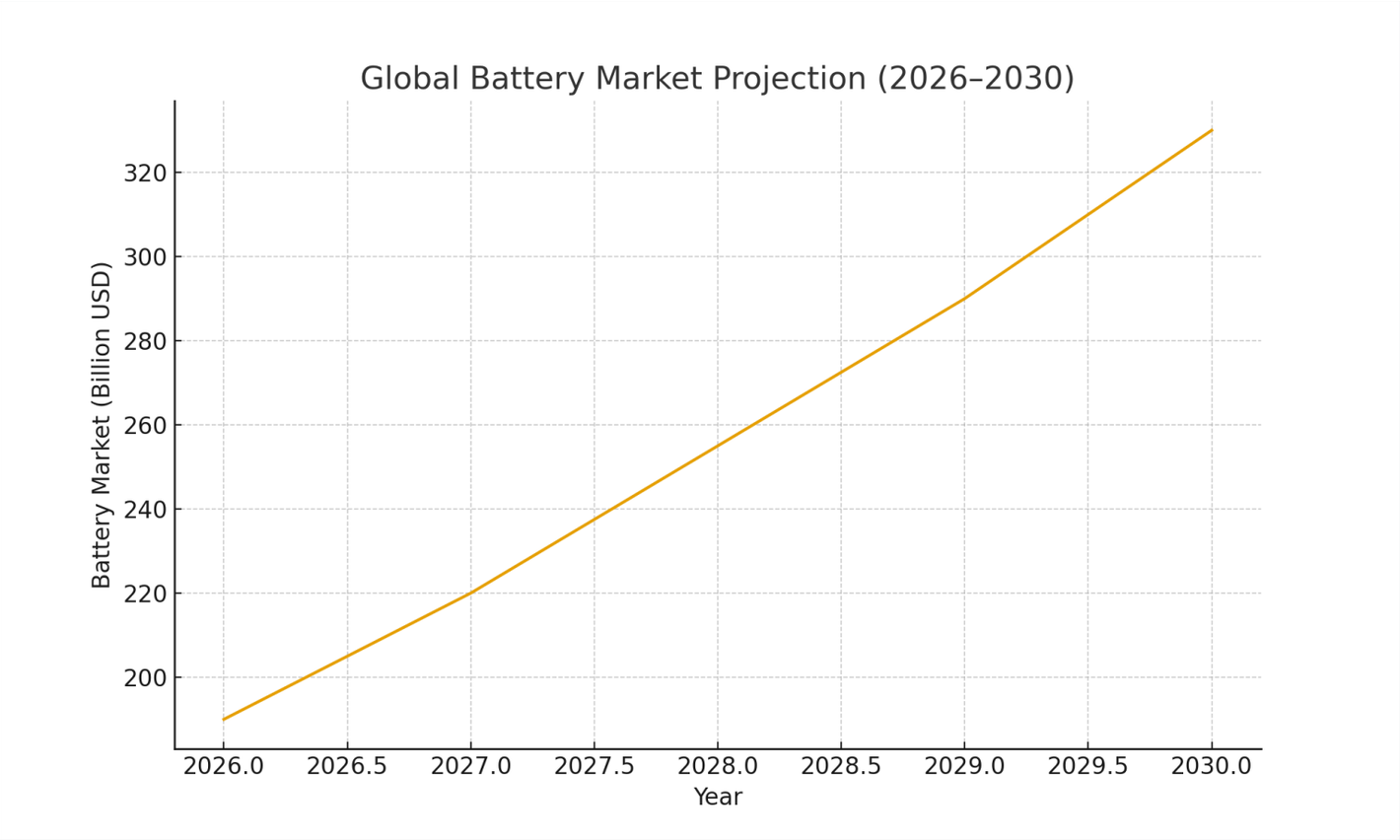
Competitive Advantages

- Modular, customizable energy solutions.
- Fast development and deployment.
- Flexible adoption of emerging technologies.

Vantaggi Competitivi

- - Agilità operativa.
- - Specializzazione verticale.
- - Innovazione continua.
- - Cultura sostenibile e moderna.

Battery Market Projection (2026–2030)



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Market Size

Global IoT market: $650B (2024)

IoT energy solutions market: $25B, growing at a CAGR of 18%.

Initial segments:

- industrial sensors (SOM ~ $1.2B)
- smart packaging (SOM ~ $800M)
- biomedical wearables (SOM ~ $600M)

Initial target: ultra-low-power IoT (≤100 µW).

Dimensione del Mercato

Mercato globale IoT: $650B (2024)

Mercato energy solutions per IoT: $25B in crescita CAGR 18%.

Segmenti iniziali:

- sensori industriali (SOM ~ $1.2B)
- smart packaging (SOM ~ $800M)
- indossabili biomedicali (SOM ~ $600M)

Target iniziale: ultra-low-power IoT (≤100 µW).

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Funding Request

- Objective: accelerate R&D, increase production capacity, expand marketing.

- Use of Funds:
- 40% Research & Development
- 30% Production & Supply Chain
- 20% Marketing & Sales
- 10% Operations & Reserve

Investimento Richiesto

- Obiettivo: accelerare R&D, aumentare capacità produttiva e marketing.

- Use of Funds:
- 40% Ricerca e sviluppo
- 30% Produzione e supply chain
- 20% Marketing e vendite
- 10% Operatività e riserva

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2026 Roadmap – Corporate Clean Table

Quarter	Main Objectives	Detailed Description
Q1 – Foundation	Planning & Setup	Definition of system architecture Team setup and onboarding Initiation of R&D activities
Q2 – Development	Core Development	Prototype v1.0 build Testing & validation cycles Early adopter engagement
Q3 – Expansion	Scaling & Partnerships	Pre-series production Industrial partner onboarding Supply chain optimization
Q4 – Launch	Commercial Rollout	Release v1.0 Pilot customer installations Planning upgrades for 2027

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GQenergy represents the new wave of energy innovation, combining agility and advanced technologies.

GQenergy rappresenta la nuova generazione di innovazione energetica, unendo agilità e tecnologie avanzate.

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www.gqenergy.It

gq@gqenergy.It

GQenergy is the first real alternative to batteries for the IoT.

Solid. Safe. Maintenance-free.

New energy comes from those who have the courage to innovate.

GQenergy è la prima vera alternativa alle batterie per l'IoT.

Senza manutenzione.

La nuova energia nasce da chi ha il coraggio di innovare.