PRESS ROOM

LOOPXCELL

Sovereign Energy & Cloud Infrastructure.

Introduction

It is a physical energy and computing infrastructure designed for long-term resilience, grid stability, and digital sovereignty.

Built around immersion-cooled architecture, locked physical capacity, and a distributed control brain, LoopXCell redefines how energy is stored, shared, and governed — across homes, businesses, and territories.

This document presents the complete architecture, principles, and strategic logic behind the LoopXCell ecosystem.

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Not a Battery. A Sovereign Energy & Cloud Infrastructure.

“Designed in Belgium to last for decades, protect families and organisations, and serve as the foundation of a sovereign energy and cloud infrastructure.”

LoopXCell is neither a consumer battery nor a disposable energy product.
It is a long-term energy infrastructure, developed and engineered in Belgium, designed to operate reliably for decades.

LoopXCell integrates energy storage, thermal management and sovereign cloud services into a single, coherent infrastructure.
It is built for real-world applications: family homes, SMEs, public buildings, technical rooms, remote sites and semi-industrial environments.

Built around an insulated stainless-steel enclosure and protected by full-system immersion cooling, LoopXCell is fire-proof by physics, thermally stable, upgradeable over time and free from planned obsolescence.

Essential Keywords

sovereign energy infrastructure · sovereign cloud infrastructure · Belgian engineering · long-term energy system · infrastructure over product · stainless-steel battery · no planned obsolescence · intergenerational design

One Ecosystem — Six Interconnected Forces

LoopXCell operates within a deliberately designed ecosystem where each layer reinforces the others and none exists in isolation.

- amoovoXlab — deep-tech research, system engineering and architecture
- LoopXCell — all-in-one, long-life energy systems for real-world deployment
- yoomeyooXplore — education, transmission and hands-on understanding
- BlobOffXcloud — sovereign distributed cloud, OFF by design
- GoZeroXdegree — field action, resilience and real-world deployment
- CerebroXmesh — sovereign intelligence coordinating energy, thermal behaviour, safety logic and data flows across the ecosystem

This is not a product range.
It is a unified infrastructure.

ESSENTIAL KEYWORDS

energy ecosystem · European sovereign ecosystem · amoovoXlab · LoopXCell · yoomeyooXplore · BlobOffXcloud · GoZeroXdegree · CerebroXmesh

CerebroXmesh — The Sovereign Brain

At the core of the ecosystem lies CerebroXmesh, entirely designed and developed within amoovoXlab.

CerebroXmesh is a sovereign, auditable intelligence layer responsible for orchestrating the behaviour of the entire system in real time.
It does not replace hardware safety layers — it coordinates and supervises them at system level, ensuring coherence, transparency and long-term independence.

CerebroXmesh orchestrates:

- energy flows across batteries, buildings and sites
- thermal behaviour and heat reuse strategies
- safety logic and multi-layer protection
- data coordination between local and distributed nodes
- system-wide decision-making based on real operating conditions

Unlike vendor-locked BMS logic or opaque cloud controllers, CerebroXmesh operates above the hardware layer.
This architecture enables multi-layered safety, explainable behaviour and evolution over time, without being constrained by proprietary firmware or foreign control systems.

CerebroXmesh connects LoopXCell units into coordinated energy mesh structures, links BlobOffXcloud nodes into a sovereign distributed cloud fabric, and coordinates GoZeroXdegree deployments in the field, even in constrained or disconnected environments.

It is the intelligence that allows the ecosystem to scale, adapt and remain controllable over decades — without hardware replacement and without loss of sovereignty.

Essential Keywords

CerebroXmesh · sovereign intelligence · auditable algorithms · hardware-independent control · system-level orchestration · energy coordination · thermal orchestration · long-term independence · European engineering

Immersion-Cooled, Fire-Proof Architecture (Indoor & Outdoor)

All LoopXCell systems rely on full-system immersion cooling as a core architectural choice.

Every cell, inverter and electronic component operates permanently inside a dielectric thermal fluid that:

- absorbs heat instantly at its source

- prevents any contact with oxygen
- eliminates thermal hotspots
- ensures uniform temperature across the entire system

Because there is no oxygen and no localized overheating, fire propagation is physically impossible.

The system is housed in an insulated stainless-steel enclosure, allowing safe installation indoors or outdoors, without:

- fans
- airflow
- active ventilation
- cooling energy consumption

This passive, sealed architecture guarantees long-term stability and removes the most common failure points found in conventional battery systems.

LoopXCell remains fully operational across extreme temperatures ranging from –80 °C to +80 °C, maintaining stable internal conditions regardless of external climate.

The same immersion-cooled, zero-energy thermal principle applies to embedded BlobOffXcloud hardware, ensuring identical safety, stability and longevity for energy and cloud components alike.

Essential Keywords

full immersion cooling · dielectric fluid · fire-proof architecture · no fans · zero cooling energy · indoor/outdoor installation · extreme temperature operation · –80 °C to +80 °C · stainless-steel enclosure · long-term thermal stability

Zero Cooling Energy — 100 % Thermal Recycling

LoopXCell requires no energy for cooling.
Cooling is not an active process — it is an intrinsic property of the system’s immersion architecture.

All heat generated by batteries, inverters and embedded cloud hardware is immediately captured by the immersion fluid and made available for reuse, instead of being dissipated or wasted.

Recovered thermal energy can be redirected to:

- space heating
- ventilation pre-heating
- domestic hot water production

- HVAC loops and compatible building systems

By design, there are no cooling losses and no parasitic energy consumption.
Because electrical energy is stored efficiently and thermal energy is fully recovered, LoopXCell achieves a true global system efficiency above 99 %, combining electrical and thermal performance.

This approach transforms what is usually considered waste heat into a useful, integrated component of the building's energy cycle.

Essential Keywords

100 % thermal recycling · HVAC heat recovery · real efficiency >99 % · circular thermal design · zero thermal losses · waste heat utilisation · thermal-to-HVAC integration · high-efficiency energy system

Locked & Unlockable Physical Capacity — Strategic by Design

Each LoopXCell unit is built with more physical battery capacity than what is activated at installation.

This locked capacity is intentional by design.
It is not virtual, not software-based, and not dependent on future hardware replacement.
It serves several long-term structural purposes:

- future capacity expansion without modifying hardware
- reduced cell stress through lower effective depth of discharge
- extended cell lifespan and long-term stability
- participation in distributed energy reserves
- increased resilience within battery-mesh architectures
- dedicated energy supply for embedded BlobOffXcloud nodes

Additional capacity can be unlocked digitally via the app, instantly and safely, without service interruption, technician intervention or physical modification.

This approach transforms the battery from a fixed-capacity device into a strategic, evolutive energy asset, able to adapt over time to changing needs, uses and infrastructures.

Essential Keywords

locked capacity · unlockable capacity · strategic energy reserve · battery mesh · lifespan extension · reduced cell stress · evolutive energy asset · app-controlled capacity

All-in-One Architecture — Compatible with All European Grids

LoopXCell is designed as a true all-in-one energy system, integrating battery cells, inverters, solar chargers and control layers into a single, coherent architecture.

This unified design eliminates external stacking, fragmented control systems and inter-device dependencies, improving reliability, safety and long-term maintainability.

LoopXCell is natively compatible with all European grid configurations, including:

- single-phase grids
- multi-phase grids
- 3×230 V networks without neutral

The system supplies the entire building, not just selected phases or critical loads, ensuring consistent power distribution across all uses.

This grid-agnostic architecture allows LoopXCell to be deployed seamlessly in residential, professional and mixed environments, as well as in microgrid and off-grid scenarios.

Essential Keywords

all-in-one energy system · European grid compatibility · 3×230 V without neutral · full-building power supply · grid-agnostic architecture · microgrid-ready

Battery Mesh, Grid Stability & Energy as Infrastructure

LoopXCell units can operate as standalone systems or be interconnected into a distributed battery mesh spanning multiple buildings, sites or territories.

This mesh-based architecture enables:

- local energy autonomy at site level
- shared storage between buildings or users
- peak shaving to reduce demand spikes
- load shifting to optimise energy use over time
- distributed strategic reserves using locked capacity

Because both the power electronics and control layers are immersion-cooled and supervised by CerebroXmesh intelligence, the system maintains stable operation during conditions that typically disrupt conventional installations.

LoopXCell remains operational through:

- voltage fluctuations

- transformer stress and overload
- neighbourhood PV saturation
- grid instability scenarios

This behaviour transforms energy storage from a reactive backup solution into active infrastructure, contributing to grid stability rather than disconnecting when the network is under stress.

Essential Keywords

battery mesh · distributed energy storage · grid stability · anti drop-off · peak shaving · load shifting · strategic energy reserve · energy as infrastructure

BlobOffXcloud — OFF by Design, Sovereign by Architecture

BlobOffXcloud is OFF by design.
This is not a default setting — it is a structural principle.

BlobOffXcloud operates as a distributed cloud architecture, physically hosted across LoopXCell systems and powered directly by local energy storage.
It is designed to minimise exposure and eliminate centralised dependencies.

By design, it is:

- not permanently connected
- not exposed by default
- not dependent on any central cloud infrastructure

Data security is architectural rather than procedural.

All data is protected through multi-layer encryption, built on quantum-resistant cryptographic foundations, and split by design across multiple nodes.
No complete file ever exists in a single location.

Even in the event of physical or digital intrusion, extracted data fragments remain incomplete, context-free and non-exploitable.

By coupling energy autonomy with distributed, offline-first data infrastructure, LoopXCell and BlobOffXcloud establish true digital sovereignty, where control remains local, resilient and independent.

Essential Keywords

BlobOffXcloud · OFF by design cloud · distributed cloud · multi-layer encryption · quantum-resistant cryptography · data splitting by design · offline-first architecture · digital sovereignty

FrostShield — Retrofit Solar Defrosting Without Roof Access

FrostShield, co-developed by BelgaSolar and amoovoXlab, is a retrofit technology designed to restore photovoltaic production under winter conditions.

FrostShield enables passive snow shedding on solar panels, without the use of heating elements and without any additional energy consumption.
The system operates without requiring roof access, eliminating safety risks, installation complexity and operational downtime.

By allowing snow to slide off naturally, FrostShield helps maintain solar production in cold and snowy climates, extending the effective operating season of existing photovoltaic installations.

Designed for retrofit deployment, FrostShield can be applied to a wide range of installed PV systems, both residential and professional, without structural modifications.

Essential Keywords

FrostShield · photovoltaic retrofit · solar defrosting · winter solar production · passive snow shedding · cold climate PV · BelgaSolar · amoovoXlab

LoopXCare — Lifetime Value, No Depreciation

LoopXCare is the long-term support and lifecycle program designed to preserve the value of LoopXCell systems over decades.

Instead of losing performance or becoming obsolete, each unit can be reconditioned, upgraded and transferred throughout its operational life.
Electronics, control layers and system configurations can evolve over time, while the core infrastructure remains in service.

By design, LoopXCare transforms energy storage into a durable infrastructure asset, rather than a product subject to rapid depreciation or forced replacement cycles.

This approach ensures long-term reliability, predictable performance and sustained value for families, organisations and public infrastructures alike.

Essential Keywords

LoopXCare · lifetime guarantee · zero depreciation · durable energy asset · long-term maintenance · lifecycle management · future-proof infrastructure

Intergenerational Architecture

LoopXCell is designed to remain relevant across multiple generations of users, rather than being limited to a single ownership cycle or technological phase.

Its stainless-steel enclosure, immersion-cooled electronics, locked and unlockable physical capacity, and CerebroXmesh intelligence layer allow the system to operate reliably, adapt over time and integrate future evolutions in energy and cloud infrastructures.

As energy models, regulatory frameworks and digital architectures evolve, LoopXCell remains upgradeable, transferable and resilient, preserving both functional relevance and long-term value.

This intergenerational approach shifts energy storage away from short-lived products toward lasting infrastructure, designed to serve families, organisations and public systems over decades.

Essential Keywords

intergenerational design · multi-owner system · future-proof energy infrastructure · long-term relevance · evolutive architecture · durable energy asset

Press Resources & Contacts

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