PHENOGY

We energize the future. Sustainably.

# Revolutionising energy storage with nano-level altered zinc units

THEMENDIALOG -WACHSEN DURCH INNOVATION

TECHNOPARK® LUZERN

DREES & SOMMER

# Energy storage today

**Problem and background**

- Clear social demand for sustainable energy which is capacity constrained
- Global energy supply bottlenecks combined with supply sparse raw materials (lithium, cobalt etc)
- Intertwined geopolitical dependencies (USA / China / Russia)
- Unacceptable working and manufacturing conditions along the supply chain requiring a new approach

# Introducing PHENOGY

On the hunt for an emission free society, goals have been set to deal with climate change - and missed again and again.

Renewable energies are on vogue, fossil fuels are being banned. It is clear that the production of electrical power in the future should increasingly be done by renewables - solar, wind and biogas. Geothermie and Hydrogen will play an important role as well. This will also secure geopolitical independence.
Since the energy production with renewables is not steady, but depend on wind and sun, energy needs to be stored so it can be used at another time or at another place. The wish to ban emissions from city centers lead to the introduction of e-cars and the ban of combustion engines in Europe by 2035. But the dependency on Lithium, a scarce metal controlled by a few players, maneuvers us in the next trap.

It is PHENOGY's Mission to contribute to develop and sell cleaner, better, safer and more environmentally friendly energy storage systems that are affordable and can foster new business models like circular economy by having a recy-cling rate of> 90%.

We energize the future. Sustainably.

**Proud member of:** swiss triple impact

**Committed supporter of:**

**Aiming for certification as:**

# Why Zinc?

| | |
|---|---|
| FOR THE PLANET | • Avoid toxic components both in the manufacturing phase (using less energy and emitting lower $CO_2$) and during the recycling phase<br>• Benefiting from planned local EU production, guaranteeing shortened and reliable supply chains |
| SUPPLY CHAINS | • Zinc is over 100 times more abundant than lithium, globally.<br>• Zinc is an abundant and inexpensive material with high reuse.<br>• Cheaper and less complex Battery Management Systems (BMS).<br>• Geopolitically conflict-free. Zn resources in > 50 countries. |
| SAFETY AND PERFORMANCE | • No risk of explosion as zinc is a non-hazardous material<br>• Long discharge, with fast recharge capabilities combined with an operating temperature window of -40 to +80°C<br>• Large addressable market covering personal use devices, house-hold and industry<br>• Higher power density. |
| COSTS | • Cost-efficient raw materials<br>• A clear benefit of using zinc based batteries combined with reduced system complexity leads to a lower cost of total ownership |

## Zinc markets at a glance

**40B$**
Zinc is a $ 40 Billion per year market

**375k**
Forecast Zn consumption in Renewable Energy by 2030 (tonnes)

**154k**
Forecast Zn consumption increase in auto´s by 2030 (tonnes)

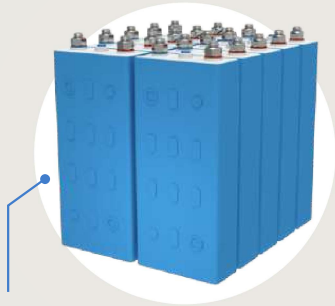
**100%**
Zn + Zn industry contribute to all 17 UN Sustainable Development Goals

# Current PHENOGY product range

Model
**PY-125 BD1** (Single Cell)
Size: 87 mm ø 30 mm
Weight : > 0.23 kg

Model
**PY-125 BD1** (Single Cell)
Size : 115 x 50 x 245mm
Weight : <2.5kg

Model
**PY-125 BD8** (8 Cell 12V Module)
Size : 230 x 250 x 245 mm
Weight : <25kg (Including Frame)



# Product portfolio development roadmap

| PRODUCT LAUNCHES | Zn Cells | Battery Packs | Zn-air | License |
|---|---|---|---|---|
| 2026 | | | | |
| 2025 | | | | |
| 2024 | | | | |
| 2023 | | | | |
| BUSINESS MODEL | B2B<br>SELL TO SYSTEM INTEGRATORS | B2B \| B2C<br>HORIZONTAL & VERTICAL EXPANSION | B2B<br>CIRCULAR ECONOMY | B2B<br>ROYALTIES ON REVENUE |
| PRODUCTION | DEDICATED, OUTSOURCED PRODUCTION | OWNED, EU \| OWNED, US | OWNED 3D PRINTING FACILITY | LICENCEE |
| MARGIN (EST.) | 25% | 25% | 30% | 2-5% |
| MARKET | D-A-CH, NL | D-A-CH, NL +EU +US | EU+US | +ASIA |

# Summary

PHENOGY is solving our current energy storage problems with a market leading, next generation Zinc-based product today, followed by an even more promising Zinc-Air technology in 2025.

With an investment in PHENOGY, an investors gains access to attractive future revenue streams, a very large and growing addressable market and ownership in a state-of-the-art EU based manufacturing facility.
This current equity raise of CHF 10 million on a premoney valuation of CHF 106 million is targeted to return over 10 times in 5 years. This raise will be in 2 tranches with the first close by end Q3 2023.

For more information

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