

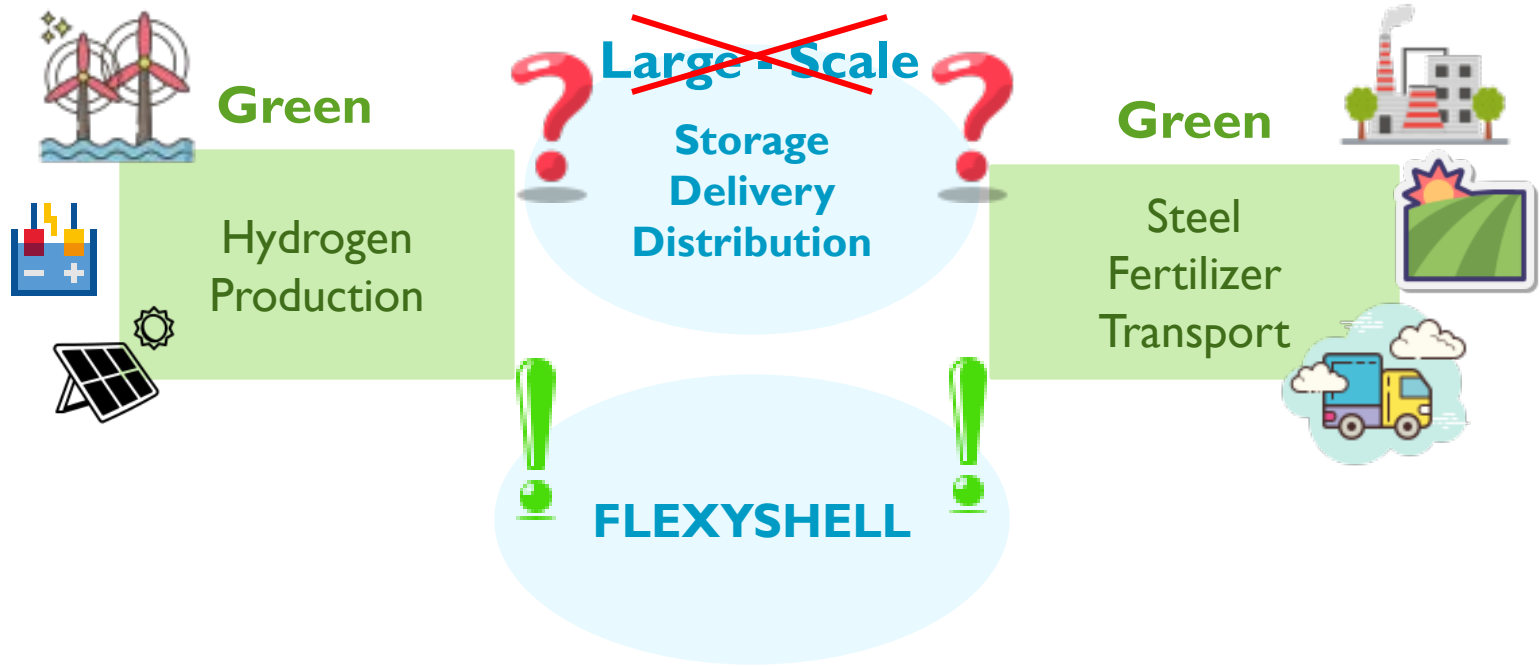


FLEXYSHELL

*Next-Generation Hydrogen Pressure
Vessels*

Missing Link Found

MISSING LINK



The core constraint in the hydrogen industry

An attempt to build hydrogen infrastructure based on Composite Overwrapped Pressure Vessels (COPV) technology was not a success. That legacy technology was never meant for wide industrial usage.

- *relies on extremely expensive and sophisticated technology and materials to manufacture*
- *impossible to build for big storage volumes*
- *have a risk of a sudden catastrophic failure as an integral part of the design*
- *expensive*
- *very sensitive to impact*
- *can not be recycled at the end of life, all the expensive materials go to landfill*
- *concept has hit a physical and economic ceiling*

Solution - FIRST OF A KIND concept.

Economically viable Gigawatt scale pressure tank



Superior cost and size.



Versatile and resilient.



Light weight.



Ultra-Safe.



Recyclable.

A New Approach

- lightweight & strong system,
- smart load-bearing architecture,
- larger & safer storage,
- over 50% cost reduction.

Better Design

- usage of widely available materials and processes,
- modular and replaceable components,
- impact resistant,
- serves as both storage tank and a structural element.

New markets

- one design - multiple industries applications,
- enabler of the large scale green hydrogen production,
- from smallest UAV tanks to huge offshore storage,
- expands with market demand.

ADVANTAGES

Safety

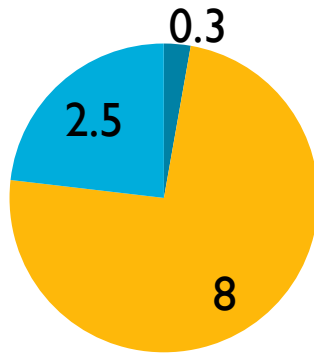
- predictable component behavior,
- sudden failure risk eliminated,
- removes insurance, operational and certification barriers.

Market Opportunity

From Stalled Growth to Explosive Replacement Wave

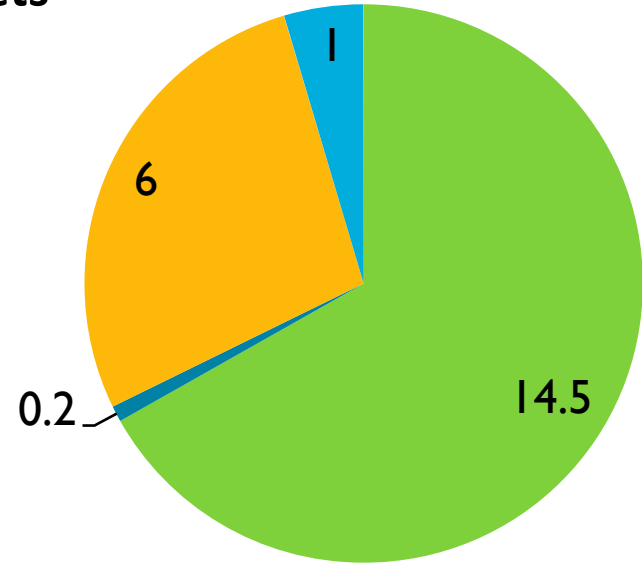
2025

Pressure Tanks Markets (USD Billion)



TOTAL 10.8 USD Billion

2030-2035

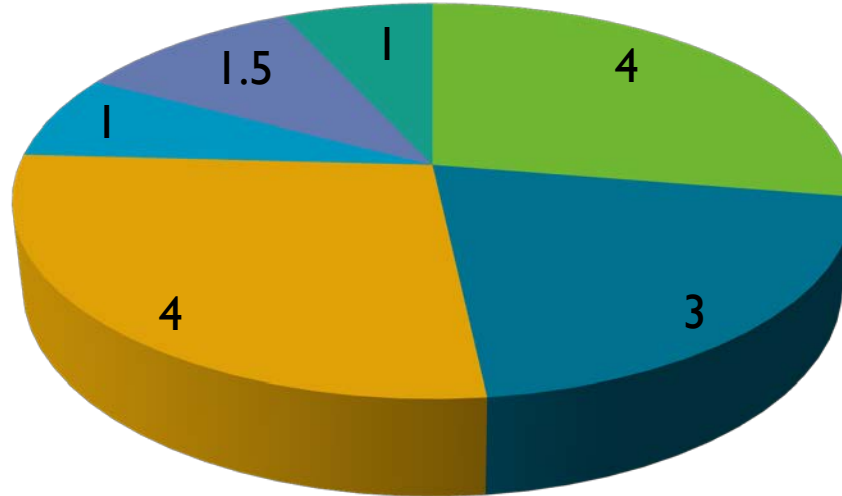


TOTAL 21.7 USD Billion

Flexyshell creates New Market

The void in Green Hydrogen Infrastructure filled

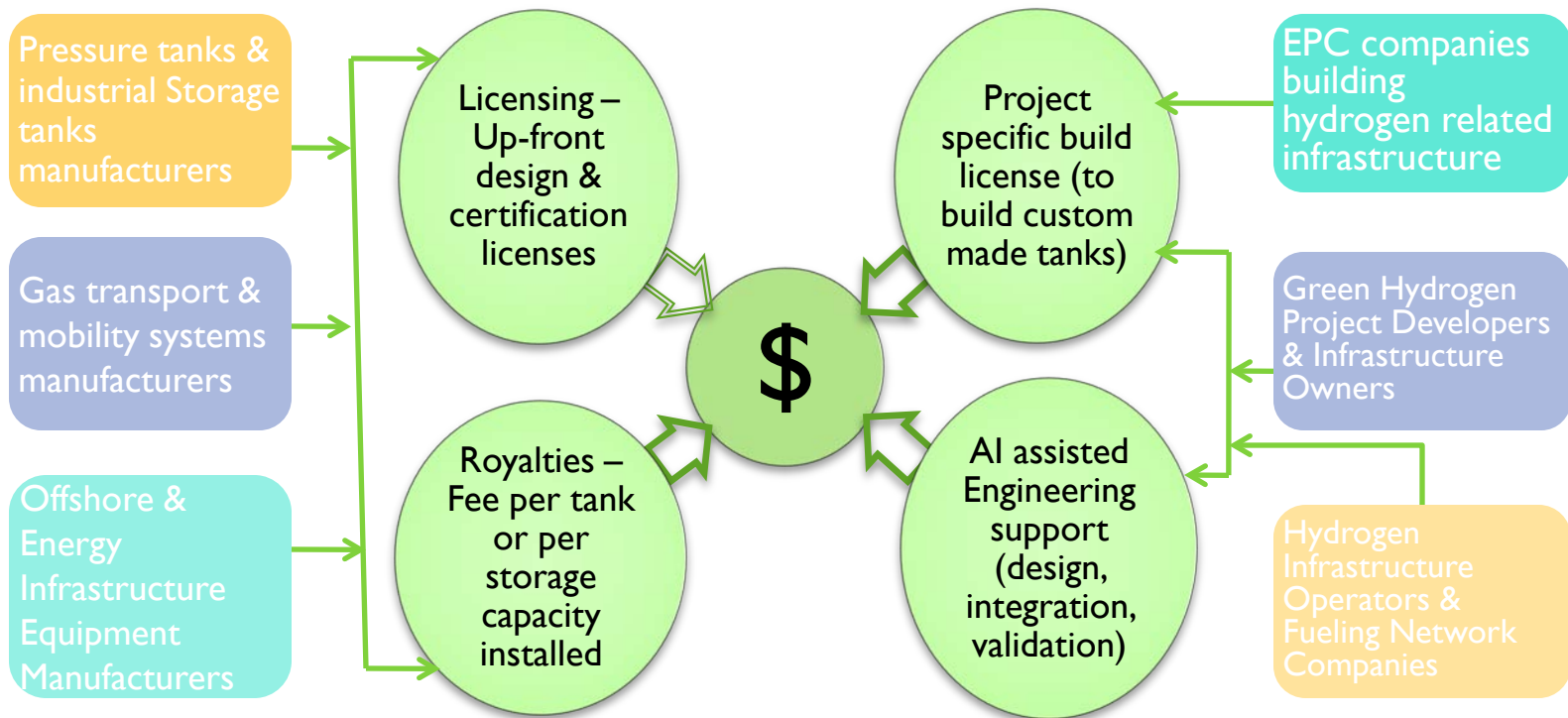
**Total Projected Flexyshell Market for 2030-2035, per year.
(14.5 USD Billion).**



- Onshore and offshore green H₂ production buffer storage
- Former COPV market
- Bulk Industrial Storage (Tanks only)
- H₂ Refueling Stations (Tanks only)
- Bulk H₂ transport and temporary storage (Tanks only)
- Other constrained compressed-gas opportunities (CO₂, Natural gas, UAV, Aerospace)

Business Model

Revenue scales with installed storage volume, while manufacturing CAPEX sits with partners

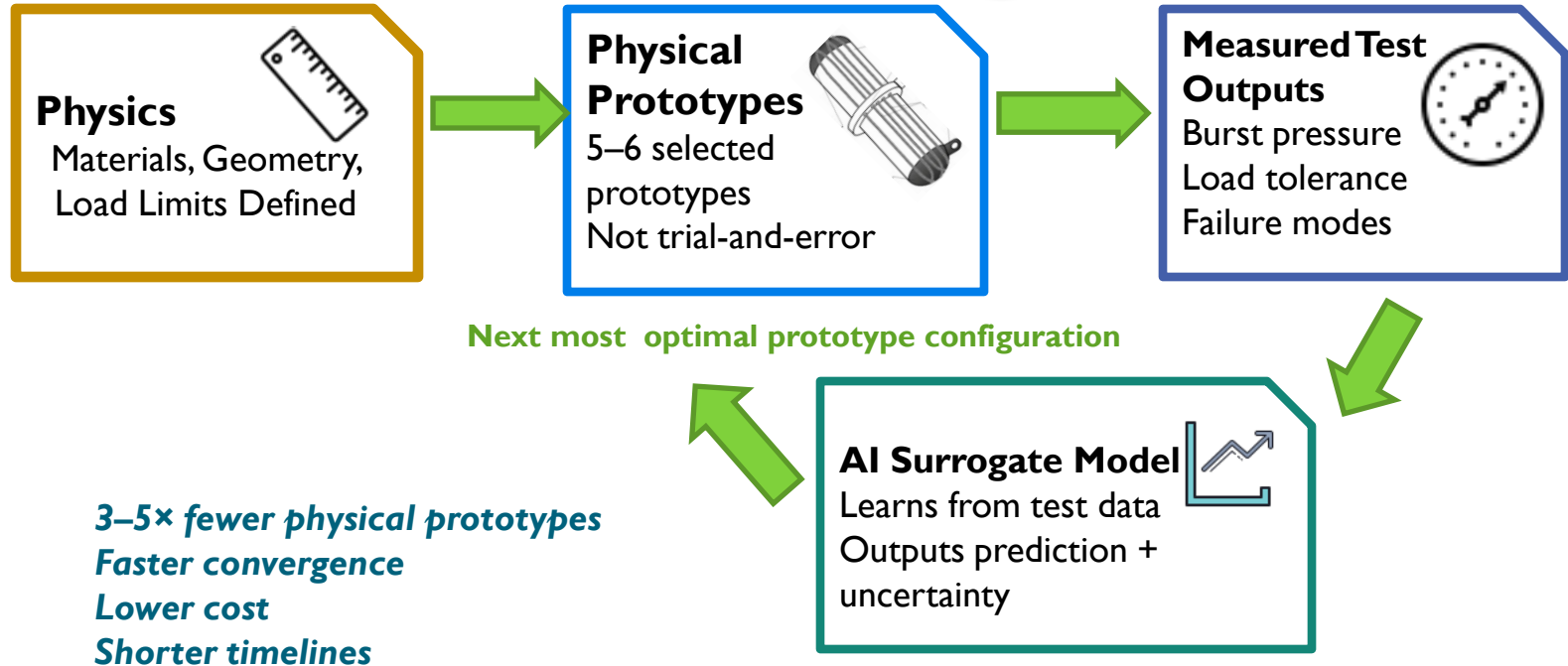


Traction and Milestones

- Core **Flexyshell** architecture analytically defined; preliminary structural calculations completed
 - Concept reviewed and positively assessed by senior pressure-systems engineers
 - Prototype architecture defined with controlled variables (fixed end caps & tendons; multiple cylindrical variants)
 - Active discussions with composite / RTP manufacturers; initial quotes for prototype fabrication and testing received
 - AI-assisted prototyping workflow prepared (physics-constrained Design of Experiments + uncertainty-aware surrogate models)
 - Provisional patent filed; PCT claim scope defined
- Fabricate first **Flexyshell** prototypes: common end caps and tendons with ~5 cylindrical variants (HDPE/CF, HDPE/steel wire)
 - Validate real-world load transfer and pressure behavior against analytical predictions (proof of concept)
 - Complete independent or partner-witnessed laboratory testing to reach TRL required for grants and next funding round
 - Prepare 2–3 strategic joint-R&D partnerships for next-stage development and grant-backed programs
 - Complete AI-guided prototype evaluation; establish transferable design knowledge base for partners
 - Build shortlist of follow-on partners for licensed manufacturing

Upon achieving these milestones, the company is positioned for a larger institutional round.

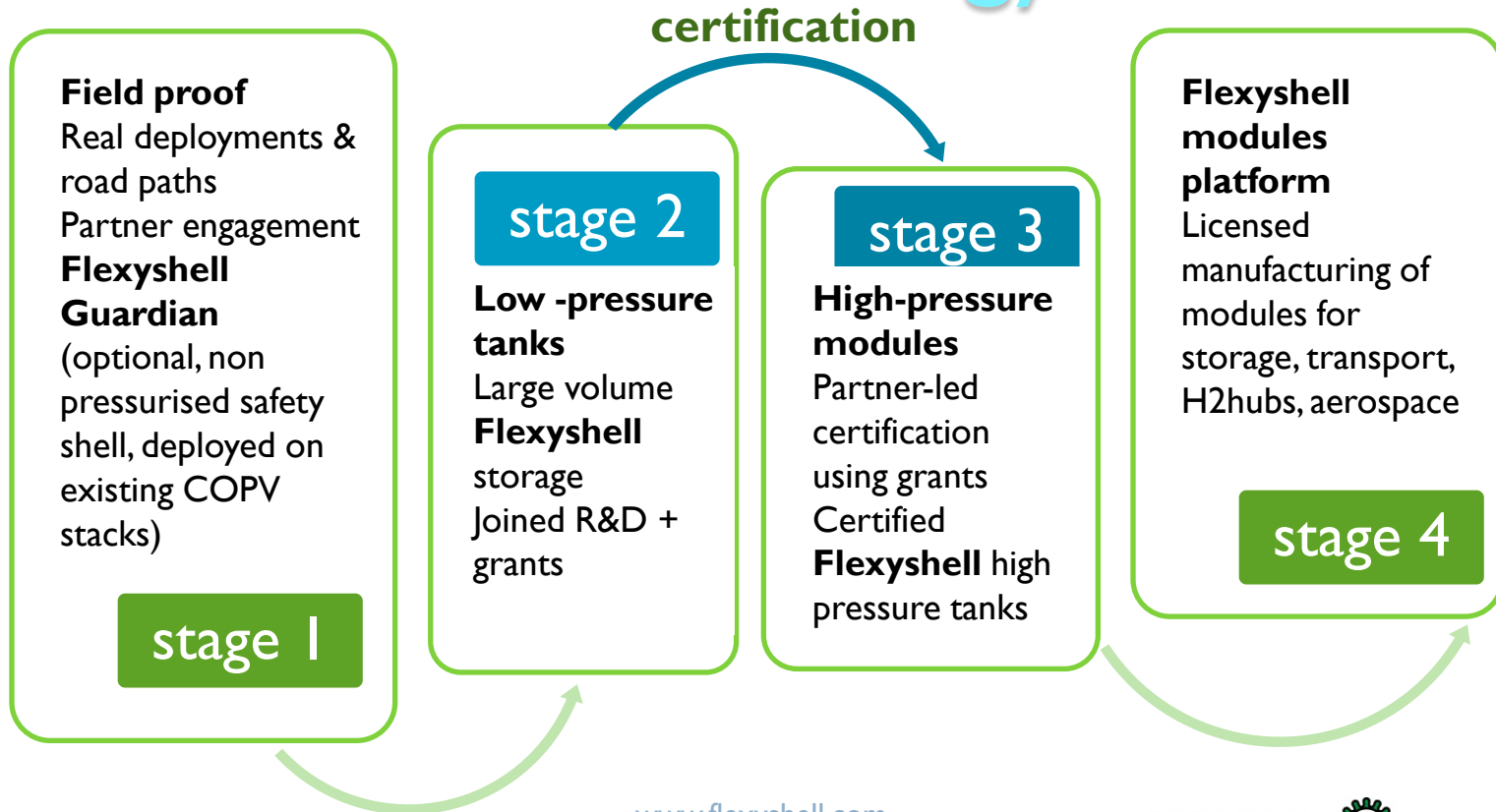
AI-Accelerated Prototyping & Testing



Development Roadmap

Phase	Timeline	Key Milestones
Company incorporation	0-1 months	Company incorporated, IP rights transferred to company
First Prototype Fabrication. Initial testing provides materials for PCT application and seed round funding for building larger prototypes	0-6 months	Prototype build and tested, TLR3 achieved, proof-of-concept documented. Ready for seed round funding with validated prototype and materials showing scaling potential.
PCT application preparation. Data obtained from the prototype helps finalize PCT application.	4-8 months	PCT application lodged, 30 months window from priority date established
Full scale low pressure prototype building. Build 2 functional prototypes (HDPE/steel-wire +PP/aramid)	8-10 months	All technological components are integrated and work together. TLR 4 achieved
Full scale low pressure prototypes testing. Iteration done until mechanical behavior matches predictions. Structural validation performed.	10-18 months	System configuration matches the final application in almost all respects. Evidence of TRL-5 compliance. First working FlexyShell Guardian build.
Partners & Industry engagement. Identifying potential partners, attend hydrogen/cleantech events	12-18 months	Early expressions of interest, groundwork for joint pilot projects, demonstrating partnership opportunities
Certification & Commercial Launch. Complete full-scale testing with certification bodies and prepare Flexyshell for market adoption.	18-24 months	Certified FLEXYSHELL modules ready for licensing; first manufacturing partners begin production under IP agreements.

Go-to-Market Strategy



The Team / Founder

*Valeriy Ordynat — Inventor & Technical Founder
Bridging theory, industry, and innovation together*

- 20+ years designing and delivering pressure systems across Oil & Gas, hydrogen, and flexible pipeline applications
- Hands-on track record taking concepts from first principles to tested hardware in high-pressure, safety-critical environments
- Deep cross-disciplinary expertise (mechanics, materials, fabrication, safety) enabling the **Flexyshell** architecture
- Founder-sufficient for pre-seed execution: capable of independently driving design, prototyping, testing, and early partner engagement

Actively building the founding team: identifying a complementary commercial / manufacturing co-founder with experience in venture growth, industrial partnerships, and fundraising to lead company operations and go-to-market execution.



Funding Requirements

Pre-Seed | EUR 150k | ~6–8 months runway

Objective of this round:

*Reach TRL-3 with validated **Flexyshell** prototypes, witnessed test data, and strengthened IP*



What we fund

- Prototype fabrication & testing
- AI-guided prototype evaluation
- IP filing & protection
- Partner engagement & preparation of joint R&D programs

What happens

- Physical prototypes built
- Witnessed laboratory tests
- Working parameters identified across key configurations
- Key structural assumptions validated by physical tests
- Major technical unknowns resolved

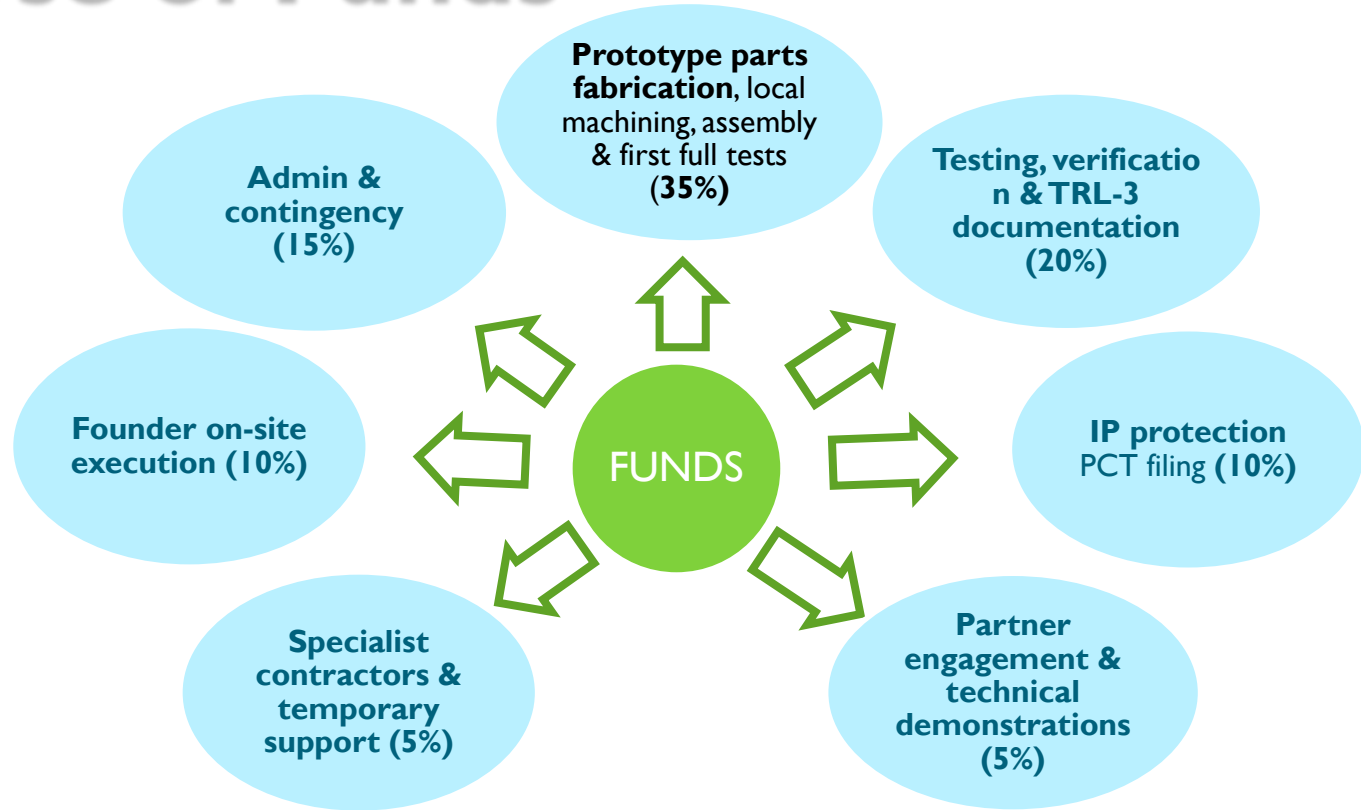
What is unlocked

- Non-theoretical proof
- Grant eligibility
- Qualified partners
- Basis for Seed, certification and licensing

Next capital inflection:

Seed round or grant-backed joint R&D for certified low-pressure tanks

Use of Funds



Investment Opportunity

Flexyshell is developing a unique architecture that enables safe, scalable hydrogen storage and transport beyond the limits of existing pressure vessels.

Pre-Seed Round: EUR 150,000

This round enables:

Construction and witnessed testing of first FlexyShell prototypes (**TRL-3**)

PCT patent filing and IP position reinforcement

Preparation for Seed funding, grant-backed joint R&D, and licensing partnerships

Outcome:

Validated physical proof of the architecture, reduced technical risk, and a clear path to partner-led scale.

We are engaging **early investors and strategic partners** aligned with deep-tech, hydrogen and infrastructure innovation.

Contact: Valeriy Ordynat, Founder



valeriyordynat@gmail.com



www.flexyshell.com