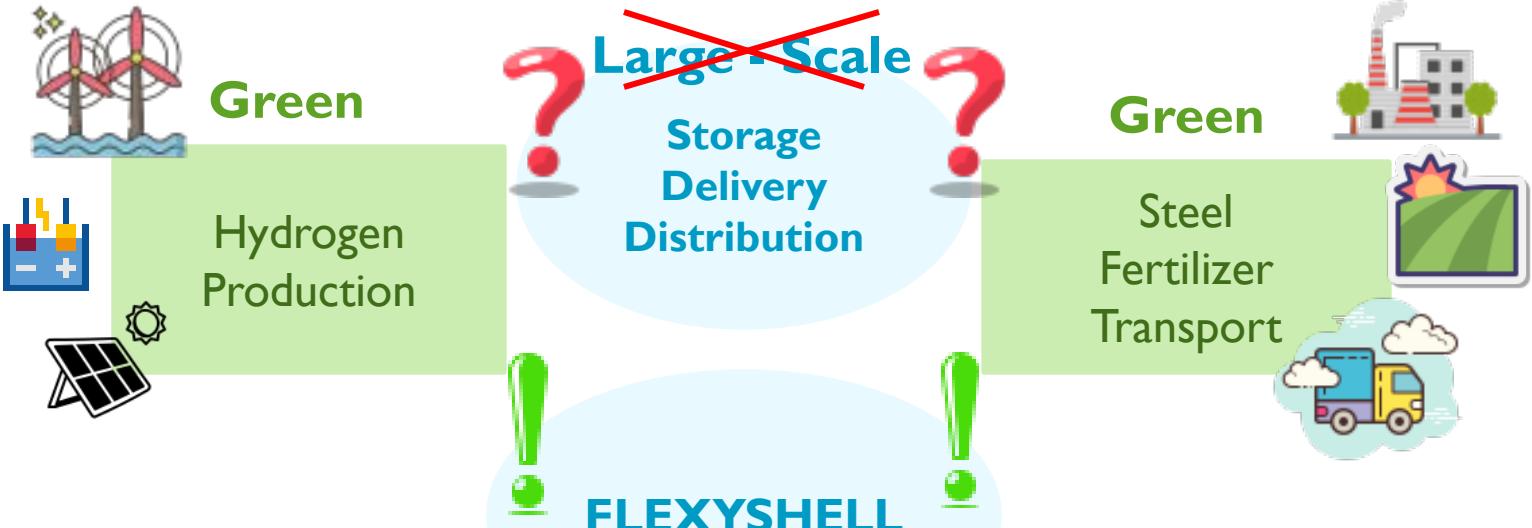


# FLEXYSHELL

*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

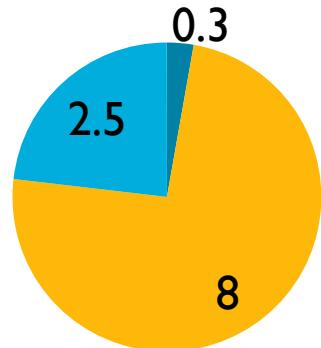
- predictable component behavior,
- sudden failure risk eliminated,
- removes insurance, operational and certification barriers.

# Market Opportunity

*From Stalled Growth to Explosive Replacement Wave*

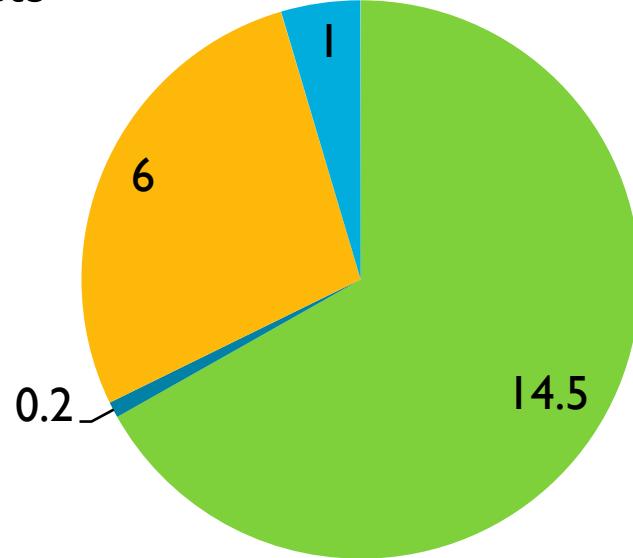
**2025**

## Pressure Tanks Markets (USD Billion)



**TOTAL 10.8 USD Billion**

**2030-2035**

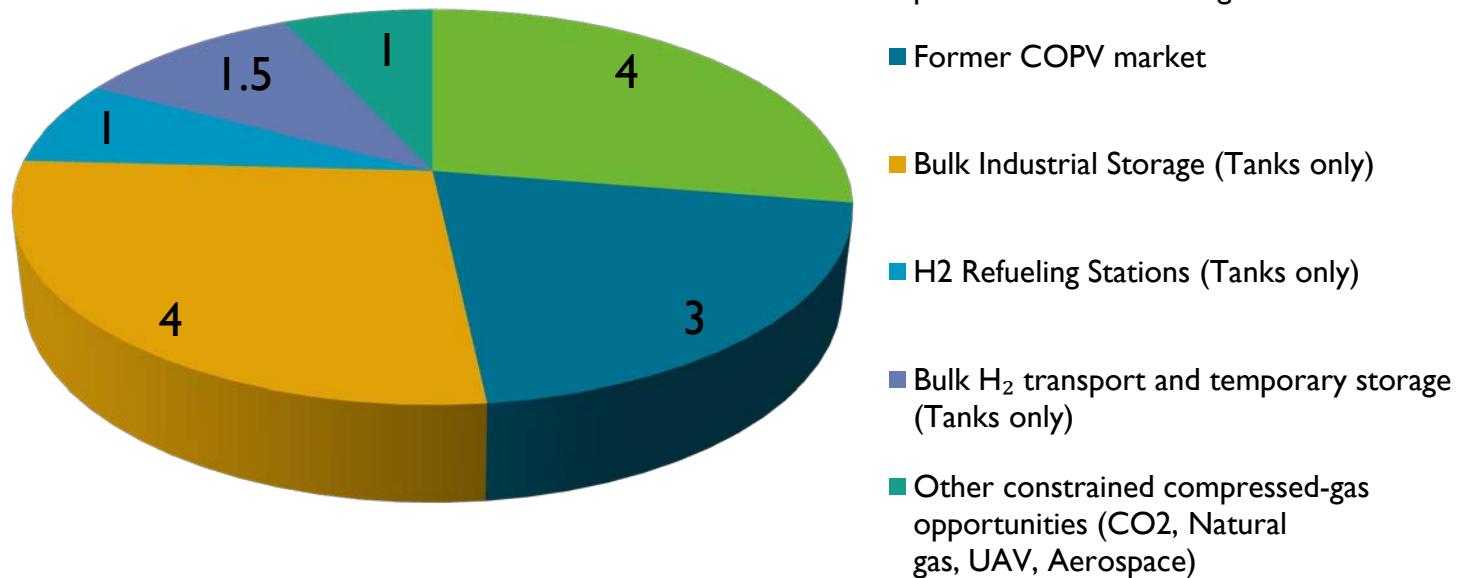


**TOTAL 21.7 USD Billion**

# Flexyshell creates New Market

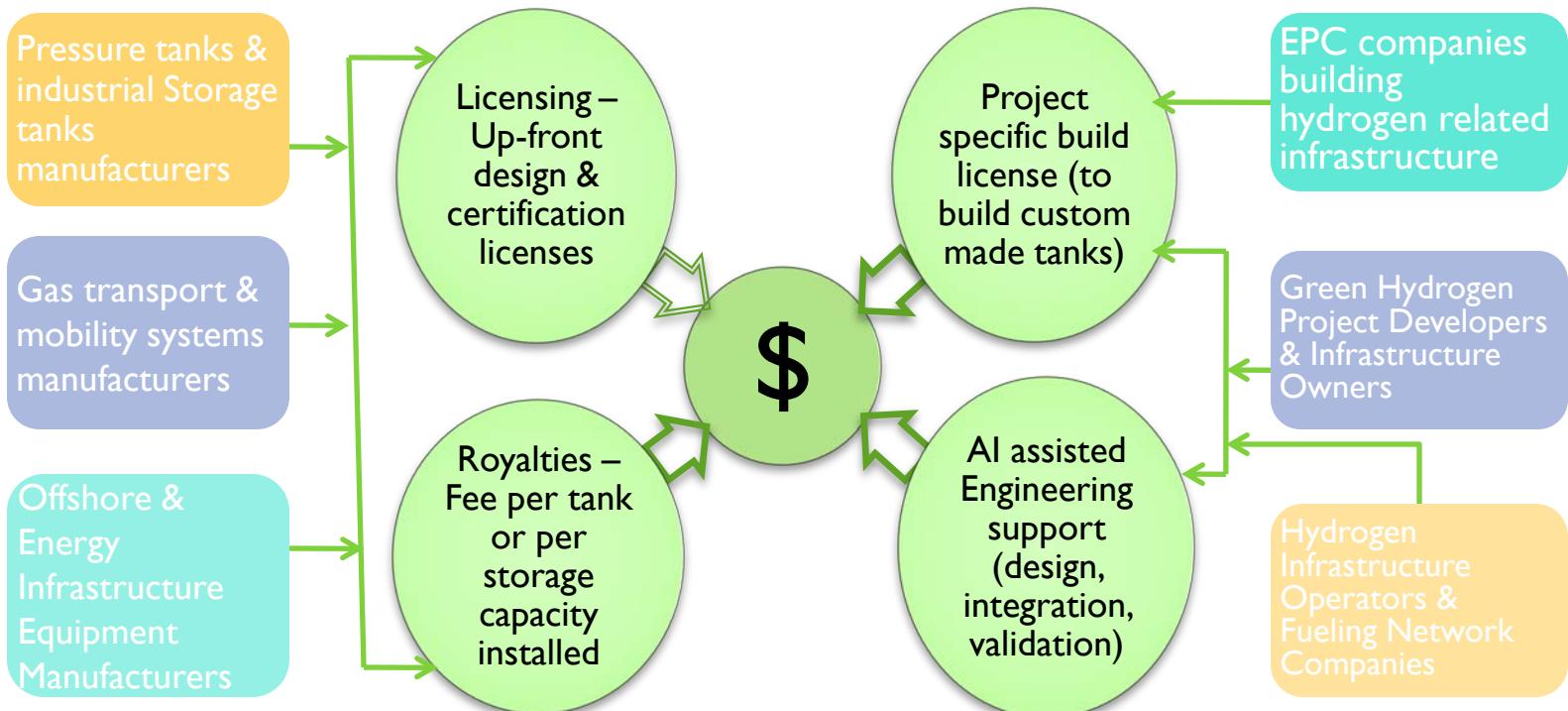
*The void in Green Hydrogen Infrastructure filled*

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



# Business Model

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



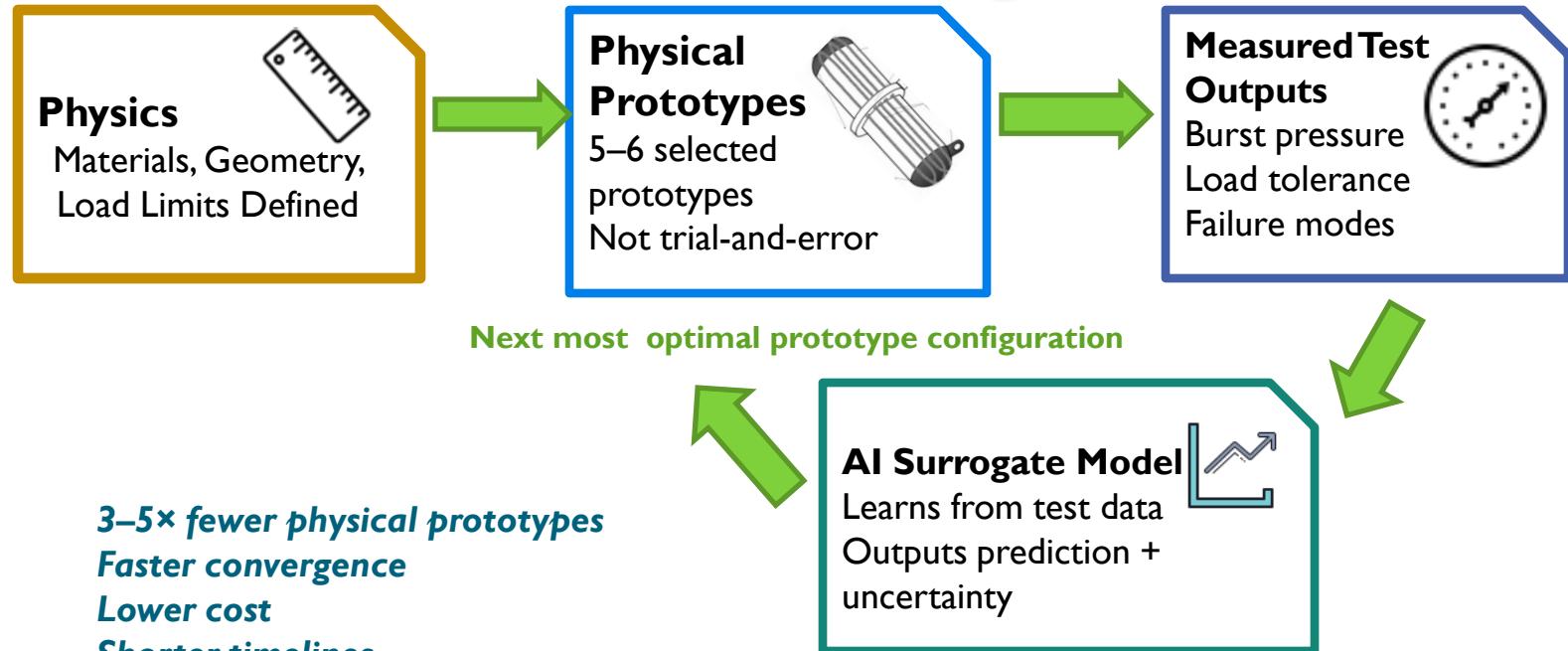
# Traction and Milestones

- 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.

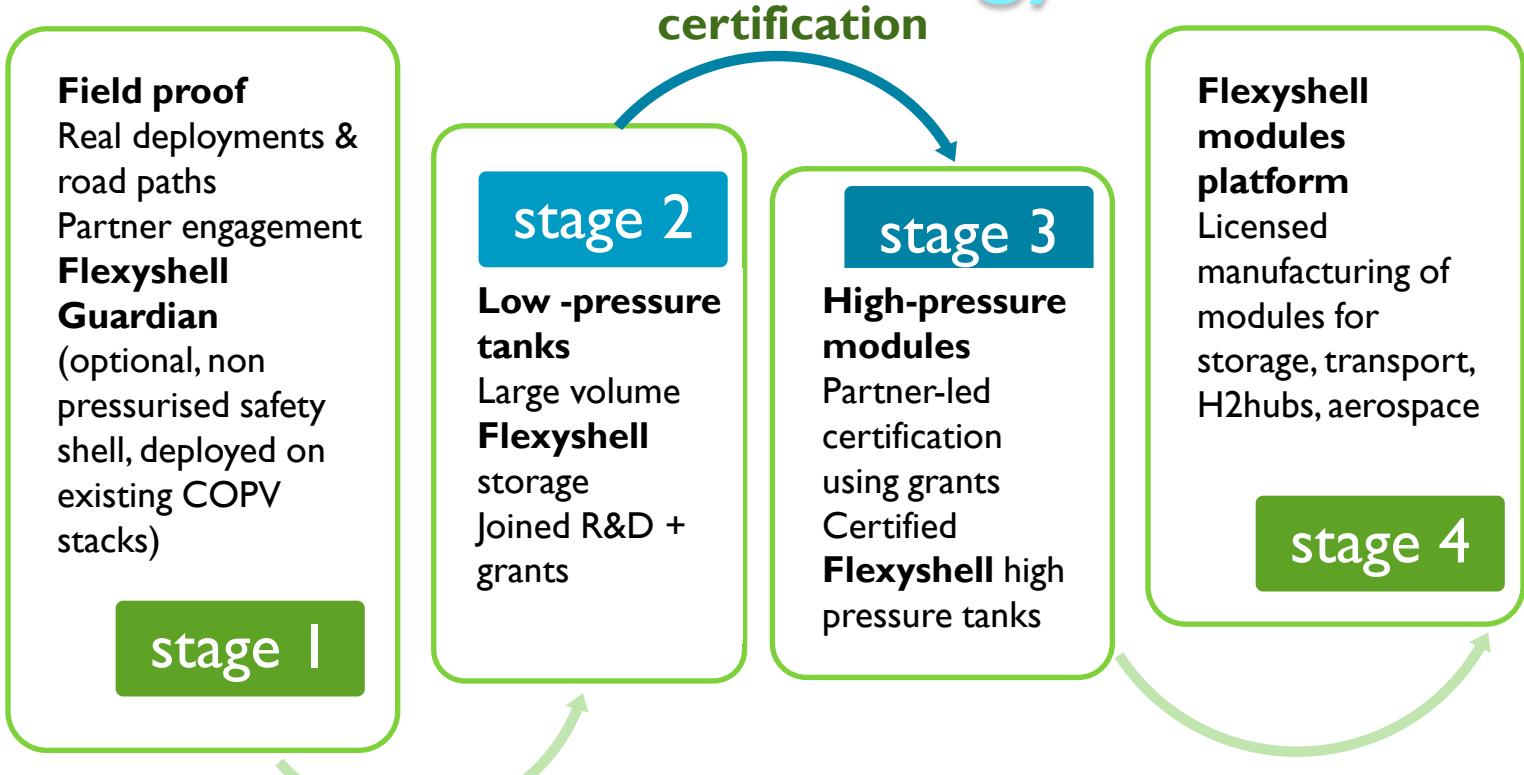
# AI-Accelerated Prototyping & Testing



# Development Roadmap

Phase	Timeline	Key Milestones
<b>Company incorporation</b>	0-1 months	Company incorporated, IP rights transferred to company
<b>First Prototype Fabrication.</b> 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.
<b>PCT application preparation.</b> Data obtained from the prototype helps finalize PCT application.	4-8 months	PCT application lodged, 30 months window from priority date established
<b>Full scale low pressure prototype building.</b> Build 2 functional prototypes (HDPE/steel-wire +PP/aramid)	8-10 months	All technological components are integrated and work together. TLR 4 achieved
<b>Full scale low pressure prototypes testing.</b> 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 <b>FlexyShell Guardian</b> build.
<b>Partners &amp; Industry engagement.</b> Identifying potential partners, attend hydrogen/cleantech events	12-18 months	Early expressions of interest, groundwork for joint pilot projects, demonstrating partnership opportunities
<b>Certification &amp; Commercial Launch.</b> Complete full-scale testing with certification bodies and prepare Flexyshell for market adoption.	18-24 months	Certified <b>FLEXYSHELL</b> 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.

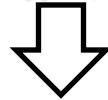


# Funding Requirements

*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

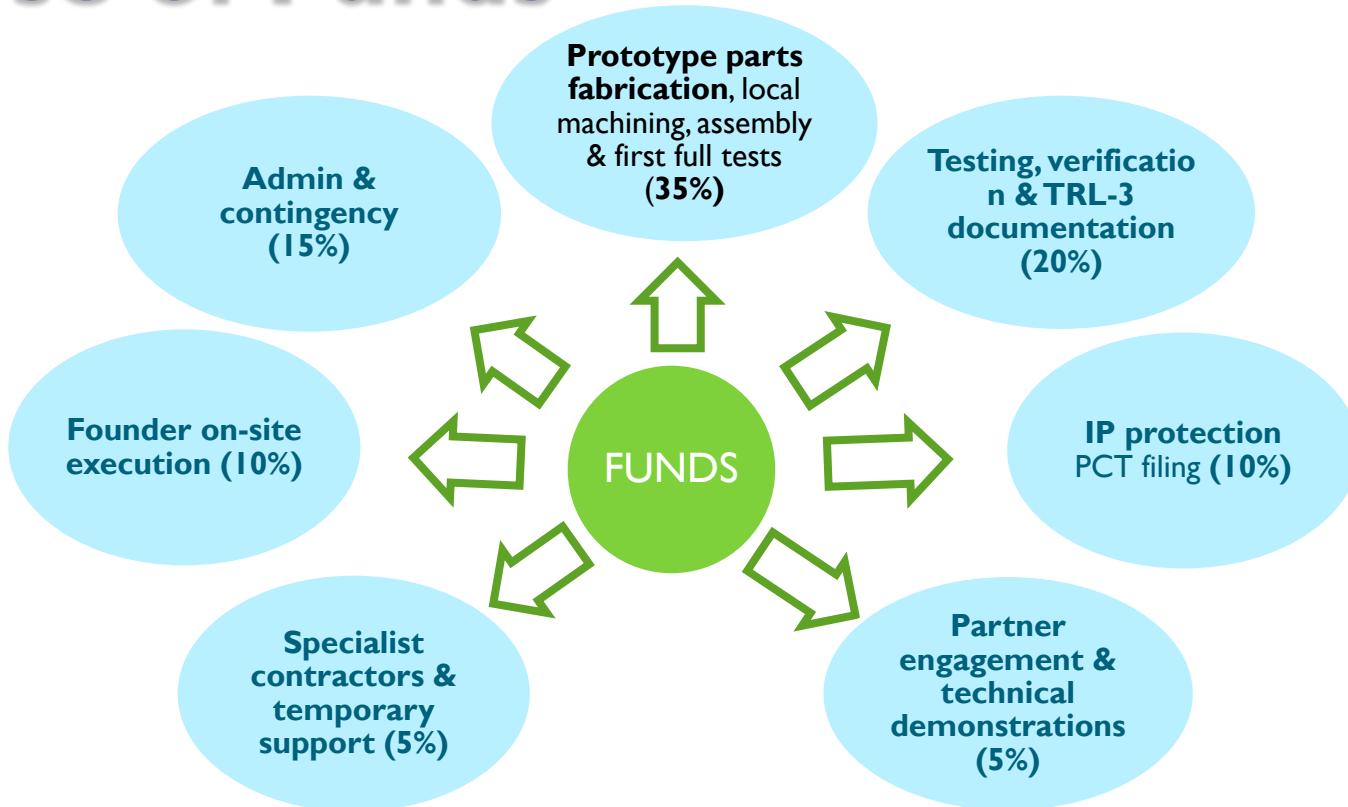
## What is unlocked

- 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



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[www.flexyshell.com](http://www.flexyshell.com)