Bridging CleanTech research towards real-world impact

Berend de Klerk

Market analyst

4TU.Teggwings



Turning your PhD into a start-up

Berend de Klerk

Market analyst

4TU.Teggwings



Why commercialize research?



Why commercialize research?



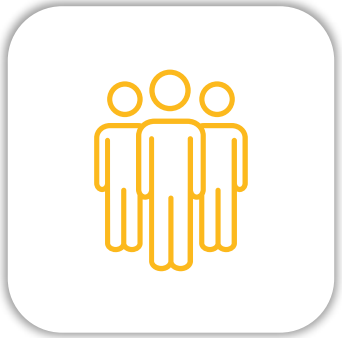
European ambitions



Global leader in climate responsibility



Independent geopolitical player



High level of social inclusion

Key barriers to innovation in Europe



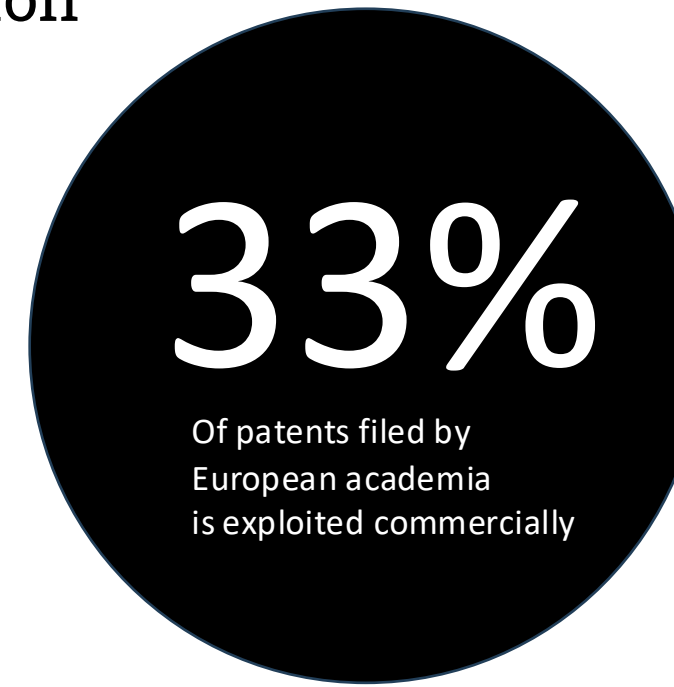
Public spending on R&I in Europe lacks scale and is insufficiently focused on breakthrough innovation



Weak position in digital tech



Strong position in innovation but pipeline to commercialisation is weak







4TU.Teggwings

A program by Impact Studio

November 2026



Our foundations



Science first

4TU Impact Validation is rooted in the believe that a science first approach is needed to complement existing valorization instruments in the Dutch ecosystem. This instrument is specifically aimed at IP without founder.



Owning our niches

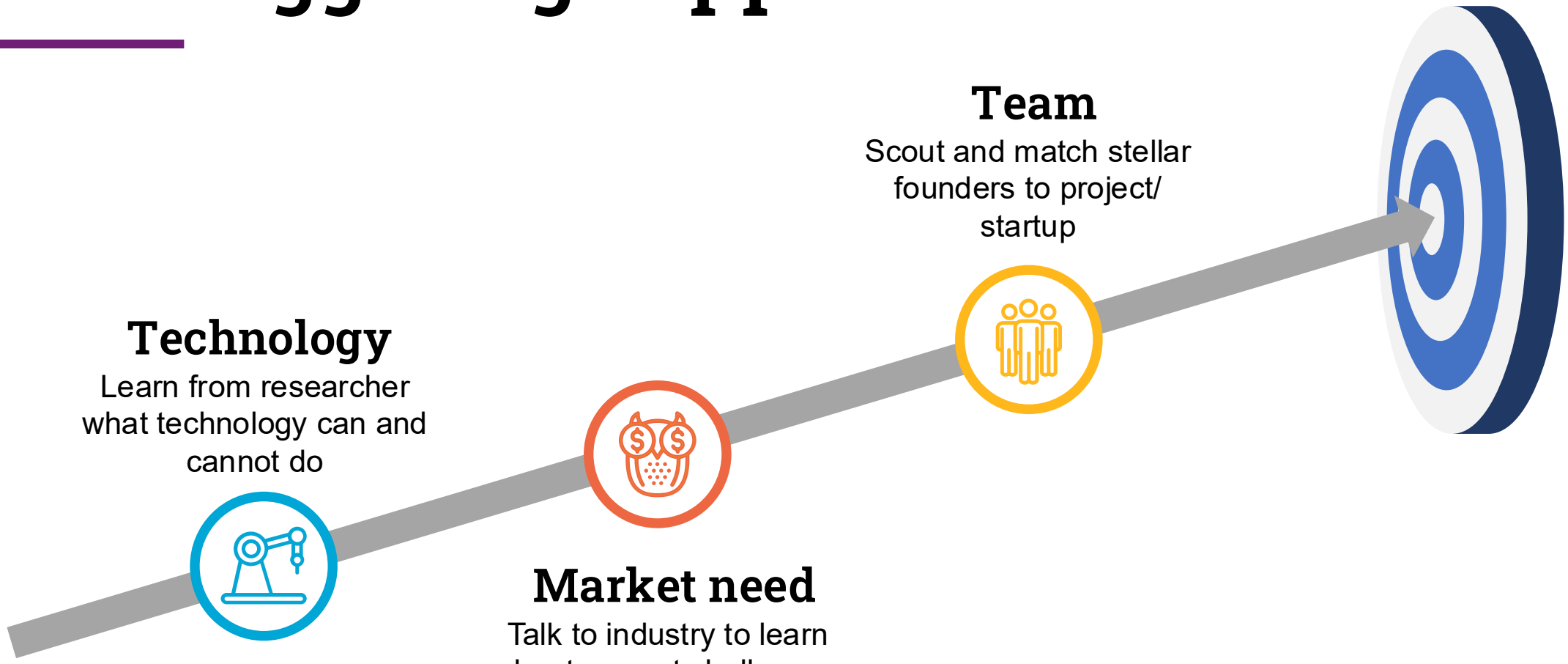
We aim to be world's best business validators in the niches the 4TU research groups dominate. This approach greatly improves the quality and efficiency as we exploit synergy between IP. The 4TU collaboration allows for this specialized approach due to the larger IP base.



4TU ecosystem

4TU Impact Validation strives to strengthen the Netherlands. To compete on a global scale, we must leverage the unique capabilities of all four technical universities (4TU). This effort should extend beyond science, with a strong focus on technology transfer and tech entrepreneurship.

The Teggwings approach



Team

Scout and match stellar founders to project/ startup

Technology

Learn from researcher what technology can and cannot do

Market need

Talk to industry to learn about current challenges and needs

Example: Ferrox Power

- Iron-based energy storage solution

What is the commercial need for our technology?



Full Professor
Antoni (Toni) Forner Cuenca



Postdoc
Emre Boz



Market analyst
Berend de Klerk



Business validator
Pavel Cholakov

Example: Ferrox Power

- We interviewed 40+ companies
  - Datacenters
  - Utilities
  - Industrial companies
  - Market experts
- We identified market needs and requirements
- We onboarded 2 founders



Full Professor
Antoni (Toni) Forner Cuenca



Postdoc/ pt. cofounder
Emre Boz



Market analyst
Berend de Klerk



Business validator
Pavel Cholakov



Founder-in-residence
Arnold Choi



Founder-in-residence
Timo Spijkerboer

Example: Ferrox Power

Customer problem

Utilities like Eneco must replace electricity from ageing Combined Cycle Gas Turbines and cover multi-day dunkelflaute at the lowest system cost.

Market insight

First non-lithium LDES volumes are signed. Utilities buy on low capex/MWh, accept low round-trip efficiency and want 24+ hours. Asset returns are poor, so 100 h needs government support; capacity schemes are emerging.

Todays conclusion

Worth considering: utilities sign the most deals, but revenue depends on capacity renumeration schemes driven by top down policy. Late?

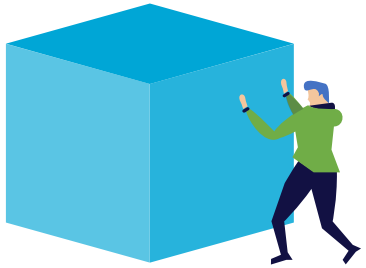
Next steps

- Internal analysis on duration requirement and available spreads
- Further outreach to existing and future buyers after S2

Value from program for researchers

- **Valorisation: real life impact from academia**
  - Startups
  - License deals
  - Solve real-world problems
- **Research benefits**
  - Build network for consortium
  - Receive market feedback
  - Prioritize relevant problems (market driven research)
  - Improve quality of Impact Chapter in grant applications

Impact Studio: 3 programs



4TU.Teggwings

Market exploration and -validation, find co-founding teams and get pre-seed ready.

Energy related

± 6-12 months with the goal of creating high-quality, validated spin-offs.



Customer Discovery Support

Market exploration

Any theme

Usually ±3 months support



Ideation Labs

Connecting researchers with students and coaching them in entrepreneurship

Theme changes

Early TRL with the goal of creating commercial opportunities and next-gen of entrepreneurs.

Are you, or do you know, someone working on energy related technology?

And want us to explore commercial potential?

Or explore yourselve, but don't know where to start?

Berend.deKlerk@tudelft.nl

4TU.Teggwings
Venturing by TU Delft, TU/e, UT and WUR

Appendix

4TU.Teggwings

Continue phase 1 untill proof points are met or funding stops.



Entry point: IP (portfolio) fitting to specific theme

Activities: grant applications (take-off, TTT), recruiting potential cofounders, interviewing scientists, market desktop research, risk analysis

Duration: 4-6 months

Entry point: propositions per market segment, business thesis, potential co-founder

Activities: market outreach, competitive analysis, IP landscaping, business case, route-to-market, team building, additional recruitment, pitch and storytelling

Duration: 4-6 months

Entry point: business plan, committed founders

Main activities: incorporation, fund raising, team completion

TUDelft awards 50k grant upon positive validated cases.

OUT OF OUR SCOPE

Stage gates



Proof points:

- **Business:** Market size & structure, Potential value add new tech
- **Team:** founder-problem fit & attitude

Outcomes:

- **GO:** Clear proposition per market segment
- **NO-GO:** Continue phase 0
- **NO-GO:** Invalidated

Proof points:

- **Business:** Beachhead market with customers & reason to beat competition + long term strategy
- **Team:** Clear needs, roles, and commitment

Outcomes:

- **GO:** Well-established go-to-market plan, pitch deck
- **NO-GO:** Continue phase 1
- **NO-GO:** Invalidated – advice on research direction

The Teggwings approach



Inhouse validation of commercial viability



Structured founder selection & matching



Optional time investment from researchers

Team composition

01

Potential founder(s)

experienced profile (<6 years of relevant working experience or extreme affinity with the case [PhD / PostDoc] with ambition and dedication to become founder, motivated to work within the IP subject matter. Incentived to take ownership of the project and become founder. Needs to show commitment at every go/nogo.

02

Market researcher

broad oriented person, limited industry-focus applicable in different fields, the ‘workhorses’ of validation doing most outreach and basic desk research. 0-3 yrs work experience and motivated to enter the start-up scene.

03

Business validator

person with sufficient industry and/or market validation expertise, supervising the project and mentoring the market researchers and potential founders. Makes sure the process is independent of potential founder and can step-in and out as founders increase/decrease their commitment. Quality control over the process.

04

Researchers

frequently briefed about process and asked for input on technology-related questions. Participating in tech deep-dives.