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Funded by the European Union
Emissions Trading System
Innovation Fund

Small Scale Innovation Fund

Aerones Journey to Securing The EU Innovation Fund Grant

Innovation Fund Info Day
Riga, Latvia / January 15, 2025

Presenter
Ieva Bukovska
Head of Grants Project Unit
Aerones

From concept to continents

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2019

Creation of concept

Winch based robotic arm platform invented.

We quickly identified the disadvantages and limitations of this early technology.

2020

First two robots developed

Beginning of global services.

Number of **turbines serviced: 300.**

2021

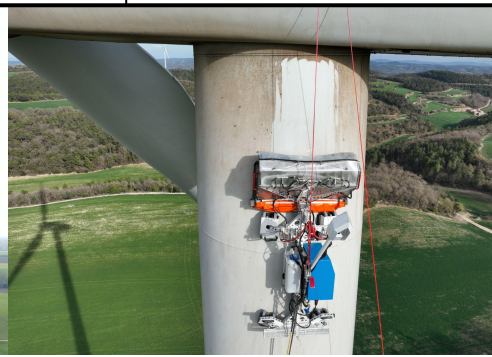
Significant robotic fleet improvement and company growth

Number of **turbines serviced: 1200.**

2022

50+ engineers

Our turnover doubles and triples and we have received large investments to further research our technologies.



2023

Across all oceans

We began operating in 4th continent – Australia and opened office and warehouse in the USA. Number of employees exceeded 250, of which 140 are field technicians and more than 50 engineers.

Current maintenance market status: growing turbine size, problem severity and inefficient solutions

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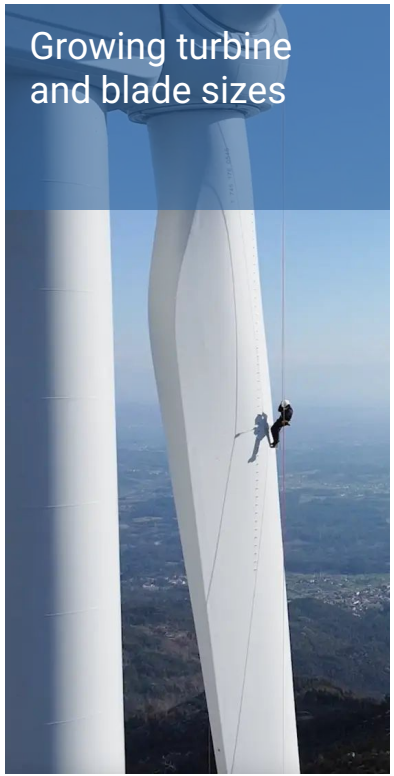
Growing turbine and blade sizes



Larger, more severe, and more frequent damage

Leading edge erosion

Cracked blades

Lightning damage

Damaged bearings and gearboxes

Oil spillage

Frozen blades

Fastest growing job in the world: wind turbine service technician

Rope access technicians are **the industry's dominant solution today.**

They are the most in-demand employees in the USA.

Manual and slow

Seasonal

Inconsistent quality

Expensive

Dangerous

Not scalable

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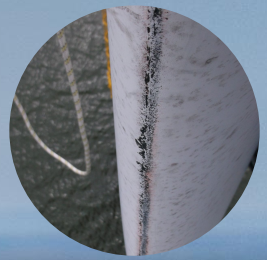
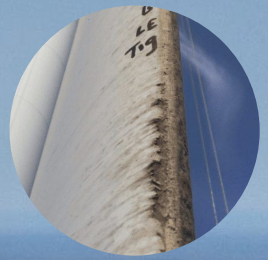
Impact of tiny collisions

As wind turbine blades slice through the air at high speeds, **impacts from dust and rain, and icing wear down the surface,** increasing drag and significantly reducing efficiency, with severe cases damaging the laminate.



Category 1



Category 2

Category 3

Category 4

Category 5

Earlier repair = less impact on shape

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- Increased energy production
- Less vibration – less fatigue
- Less cracks or structural damage
- Longer blades lifetime
- Uneven pressure on turbine nacelle bearings
- Less lightning damages

Aerones is the global leader in global wind maintenance

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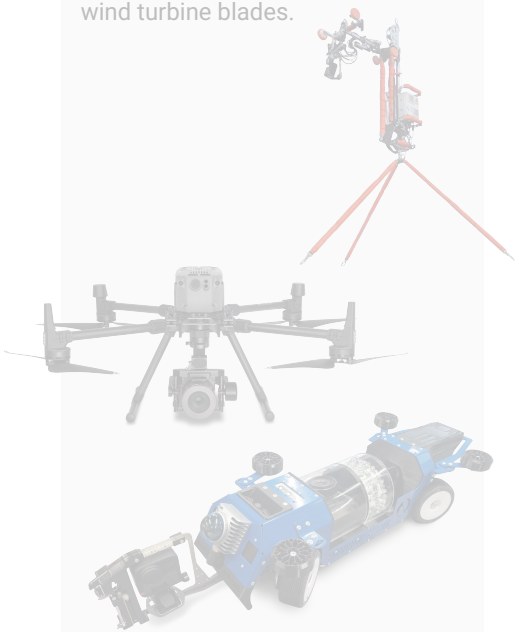
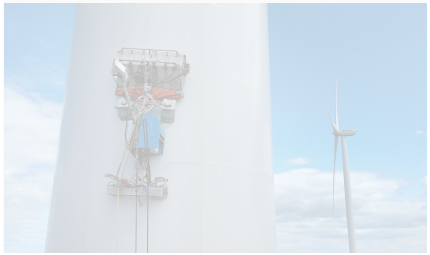
Inspection

Aerones is the first company to have built unique robotic systems that perform inspection services to wind turbine blades.



Maintenance

Wind turbine cleaning is an important part of maintenance. Blades require cleaning before repair campaigns and to renew blade airflow efficiency and regain optimal annual energy production.



Repair

The unique proprietary system brings high-quality robotic services enabling our wind turbine technicians to perform repairs.

Benefits

- No work in heights (safer)
- Consistent data gathering
- Smart data analysis
- Scalability
- Easy operations

4-6x faster

Up to 6x less downtime

Downtime is the most expensive component of maintenance

10x less idle

stay days due to high wind

Fast development process

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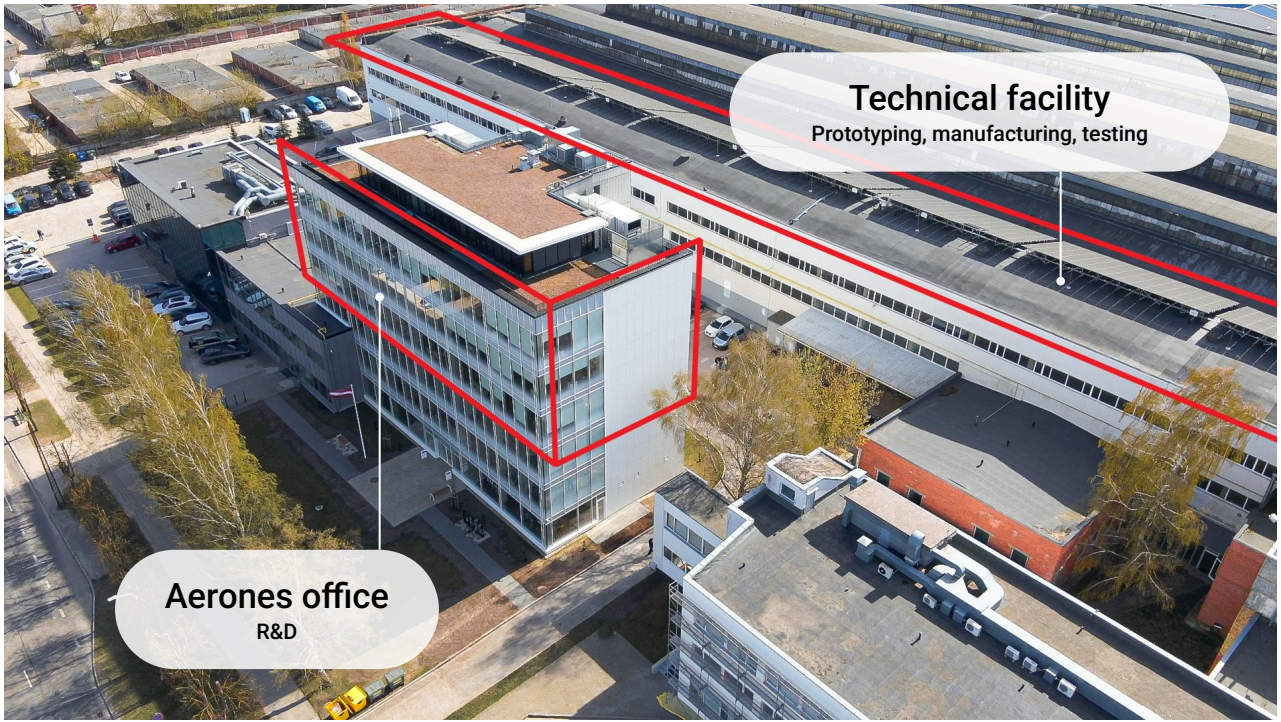
Aerones has a great infrastructure for quick innovation. Our R&D office is in the same facility as manufacturing and testing, so we can organize **very fast and efficient iterations and development.**

We are not dependent on external suppliers for development needs, so we can get **from design to prototype testing in one day.**



We provide services in **5 continents**

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27 countries
130+ clients
12 000+ turbines serviced
35 000+ blades serviced
50+ teams on field
400+ employees
9+ patents


Step by
Step: Leading
Edge Repair
by Aerones

Aerones SSC Innovation Fund project in brief

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Total project **Budget, CAPEX**

EUR
7,360,000

Total project **grant**

EUR
4,416,000

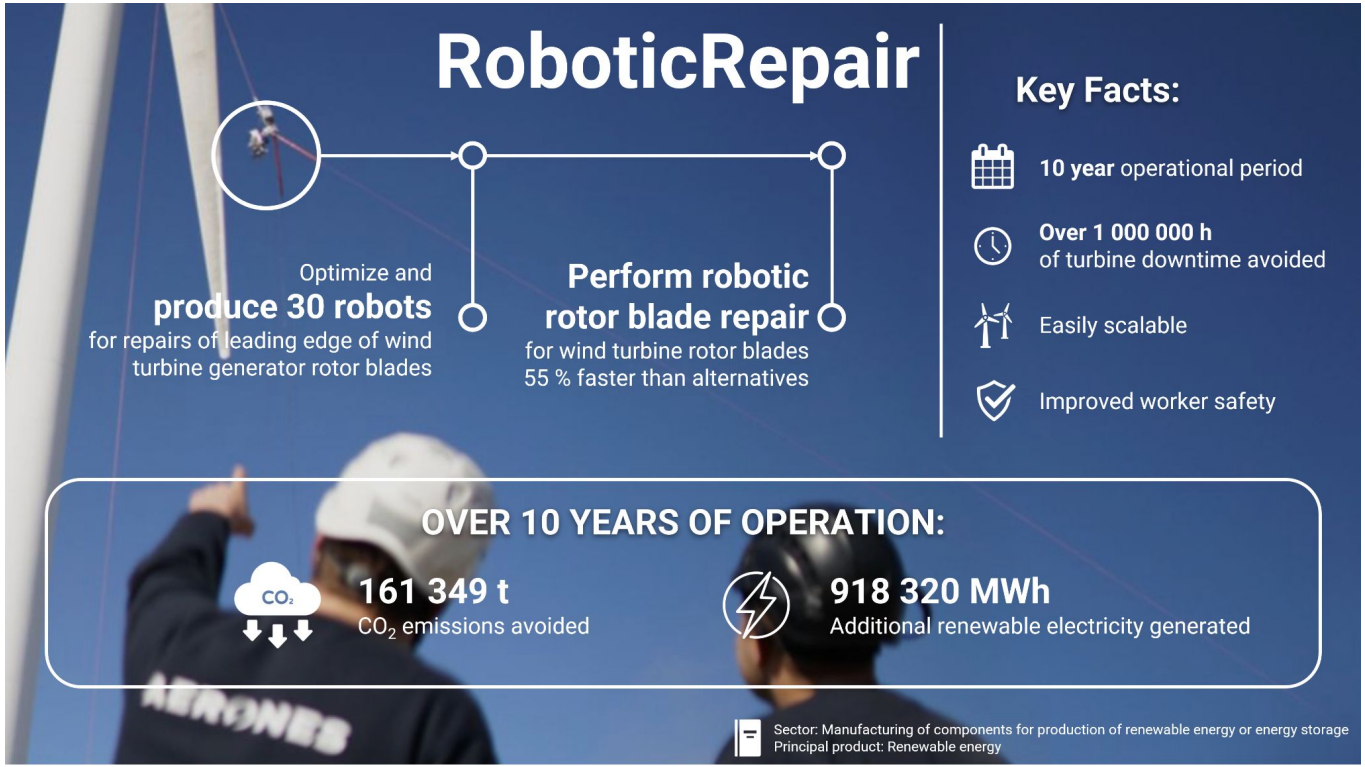
Implementation **period**

01.10.2023.
–31.12.2028.

The aim of the project

- to deploy and operate a robotic system for WTG rotor blade repair
- able to carry out the LER tasks faster and in better quality than human personnel
- able to satisfy the rapidly growing excess demand for wind turbine maintenance services

Aerones SSC Innovation Fund project in brief



Concept of the project

Recommendations

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Timely preparation of required documents

- Proposal itself ~250 pages
- GHG Emissions Calculator (methodology available)
- Relevant Cost Calculator
- Justifications of financial, operational and technological maturity (tables, Visual materials, LOIs from clients)

Define basic assumptions and objectives

- Project idea
- CO_2 concept
- Budget, expenses

**The project must be sufficiently mature and close to profitability, ensuring to achieve it with the support of the Innovation Fund

Cooperation between financial experts + engineers + field service providers + project proposal development team

Feasibility study & Proposal and etc.

Review the main facts and assumptions to ensure consistency between various documents

Recommendations

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Important things!

- Support of Spinverse (overall project proposal) and Capex (financial modelling) advisors
- Feedback from the previous attempts (LSC, SSC)

Spinverse contribution

- Internal reviewers, identifying areas for improvement
- Guidance on the definitions of project stages and insights into project implementation
- They have seen a lot of proposals for Innovation fund and other funding instruments

– Mission:

Accelerate worldwide transition to renewables

Thank You

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Y Combinator · lightrock · CHANGE VENTURES BACKING AMBITIOUS BALTIC FOUNDERS · extantia · Future Positive Capital · HANIEL · BLUME EQUITY Healthy Planet. Healthy People · metaplanet.