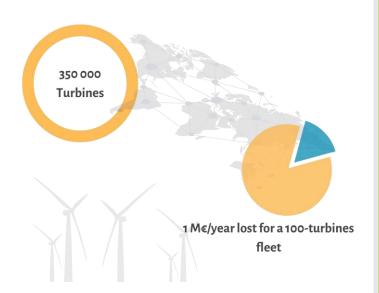


Pitch



The ambition: to be the benchmark solution for optimizing the production of wind farms in Europe.

•

The solution: First, to collect its own data in a complex environment and monitor this data and the data generated natively by the turbines. Second, to make sense of large amounts of data to reveal the hidden potential. And finally, to give direct corrective actions to be taken on the field. Sereema does all three.

The challenge: A potential gain of €1 million per year for a fleet of 100 turbines and avoiding the emission of 4,000 tCO2eq.

The market: 105,000 turbines in Europe and 350,000 worldwide. Growth of 15% expected in the next five years.

Achievements to date: ARR of €1.1 million in 2022, 23 customers, 60% exported, 400 turbines continuously monitored.

The problem for wind asset owners

Optimization of operating wind farms is key in a market that has become more volatile.

« By assuming price risk, developers are incentivised to deploy efficiently and drive down project costs. Developers like different contract options as mandatory CFDs reduce their options to optimise their cash flows, » Zachmann said.(Bruegel think tank)



Paradigm shift

- The Sale of renewable electricity is less and less subsidized and subject to market forces, more volatile by nature
- Wind farm owners have a greater responsibility to monitor the performance and yield of their assets*



Findings

- No available solution at a large scale (> 100 turbines)
 - either one has to involve experts on the field who are too expensive to use
 - or one relies on the analysis of the data provided by the turbines (SCADA data) which is unaccurate and incomplete for performance monitoring.



The Windfit® technology solution

Increase margins by optimizing performance on a large scale.

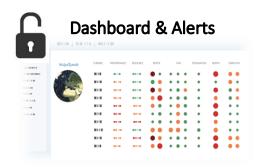








Sereema's algorithms on the Cloud



- On-board sensor and data acquisition box capable of operating effectively in complex conditions (turbulence...)
- Embedded edge processing
- Compatible with all brands of turbines
- Offshore proof
- Automated processing chain to turn high frequency dataflow (Sereema's own data + SCADA data via API) into real time diagnosis
- Fully integrated & designed entirely in-house
- Allow the processing of 30 times more data than those provided by the turbine manufacturer

- The dashboards provide automatic access to fleet supervision as well as ready-to-use turbine diagnostics.
- Alerts are also sent directly to the operating teams.













SCADA data versus Windfit data

SCADA

- Data generated by the wind turbines and controlled by the turbine manufacturer
- Do not require additional sensors or installations on the wind turbine
- Designed to monitor the good functioning of the machine but not for performance monitoring
- Lacks precision (poor resolution, no guarantee of reliability), sometimes with random availability, and therefore not adapted to new operating requirements

Windfit

- Data produced by the 7 sensors present on Sereema's box
- Independent of the wind turbine manufacturer
- Specifically designed for diagnostics and performance analysis
- High resolution data, which allows to continuously update the results
- Benefits from high precision measurements

Examples of information that is essential but impossible to obtain with SCADA data alone:

- Power curve corrected by air density. Yet standard method of measuring the performance of a wind turbine!
- Rotor imbalance detection. 1/3 of all wind turbines have this type of problem!

Market opportunity





350,000 turbines Worldwide

ÉOLIEN



Global wind power: 15% average annual growth from 2023 to 2027 (GWEC-2023)

Europe: installation of 4,000 to 7,000 wind turbines per year over the same period (Wind Europe 2023)

Sereema already has customers in most major european countries: Germany, Spain, France, Italy, Portugal, Greece, Ireland, Austria...

Our challenge is to expand this presence in order to become the leader in wind data in Europe.



The product offer

Windfit is already used by the three major categories of wind farm owners, despite not having the same needs:

- Independent Power Producers (IPPs)
- Investment funds
- Large industrial companies (Utilities, Majors).

Now the offer has two options to better respond to our customer needs, still using the same technology:

The offers	Functions	Investors	Renewable players (IPP)	Large scale companies
Diagnosis	Detection of the defects of the turbine (rotor, power orientation)evaluation of losses and gainsalerts			
Fleet optimization	 continuous monitoring of performance on a park-wide basis automated identification of the farms and machines at stake reports 			

New offer -April 2023

The revenue model

Subscription from 6 months to 3 years (includes access to the platform and the supply of boxes (these are not sold) - 100% recurring model

Diagnostic offer

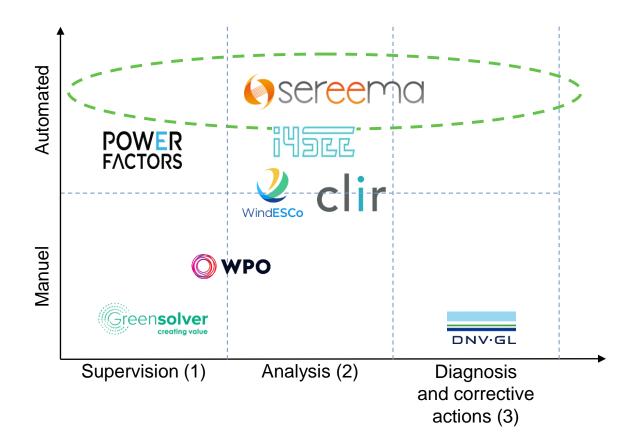
- subscription formula per box
- responds to the need to deal with undetectable anomalies without acquiring additional data + in-depth processing
- adapted to the advanced operating methods implemented by owners with strong inhouse technical skills (large industrial companies and some IPPs)
- allows for successive diagnostic campaigns that last about 6 months per wind turbine
- degressive price from 4000€/year to 2000€/year depending on the number and duration of subscriptions.

Fleet Optimization Offer

- subscription formula per turbine
- responds to the need for continuous performance monitoring + control on a fleet scale + diagnostics when needed
- adapted to players with little internal technical skills. Software functionalities based on SCADA data + optimization campaigns with installation of a box for 12 months on each wind turbine
- the number of boxes made available is 1/3 of the fleet to be monitored
- average target price of 1000€/turbine.



Existing solutions



Sereema, the only solution with a potential to optimize production by 6% for a fleet of wind turbines.

Monitoring and optimizing the performance of wind farms requires meeting three needs:

- 1. SUPERVISE: have a global vision of the performance at any time to detect changes
- 2. ANALYZE: identify and quantify deviations
- 3. **DIAGNOSE:** establish precise diagnoses in order to make the right correction on the field
- Involving experts on the field is too expensive to use on a large scale
- Digital solutions based on SCADA data: facilitate supervision (1) and analysis (2) but the low quality of the data and the lack of precision of these tools do not allow to address point 3.

Sereema believes it is 3 years ahead of the competition, with a strong potential moving forward thanks to its acquired know-how and independent database.

Date metrics

1.1M ARR



60% Export



400 Subscriptions



23 clients























The impact in numbers



 More than 5,000 t CO²eq avoided



- An estimated 30 GWh of production gain
- The alerts produced led to nearly 400 interventions in the field



 Up to 9% annual production gains on a single wind turbine



Market traction

- + 38% subscriptions at end of Q1 2023 (YoY)
- Notable extension: Finerge, + 20 Subscriptions (*3)
- New customer: Clearvise
- ARR per client at the end of Q1: 46 k€ (+53% YoY)
- Commercial pipe at 12 months: 25 players representing 2.2 M€ of ARR

According to the "<u>Global Electricity Review"</u> report by energy think tank Ember, wind generation in 2022 worldwide increased by 17%.

"Four to five wind turbines have to be installed every day over the next five years » to cover the needs of Germany warned Olaf Scholz.

This is a huge increase from the 551 units installed in 2022. A series of reglementary updates adopted these last months should allow to accelerate the tempo.

Excerpt from La Tribune - April 11, 2023

Excerpt from Le Monde - April 24, 2023
Offshore wind in the North Sea: nine countries
meet to develop it (...) "Together, the ambition is
about 300 gigawatts [GW] by 2050," said De Croo
the Belgian Prime Minister. This is ten times more
than the current installed capacity. The goal for
2030 is at least to quadruple the current park, he
added.

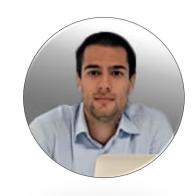
Team



Jérôme Imbert

CEO - co-founder

20+ years of experience in renewable energy



Bruno Pinto

COO

Development of the technology

Operations Management



The current team

11 people

Engineers: 5

Developers: 3

Sales and

Marketing: 3



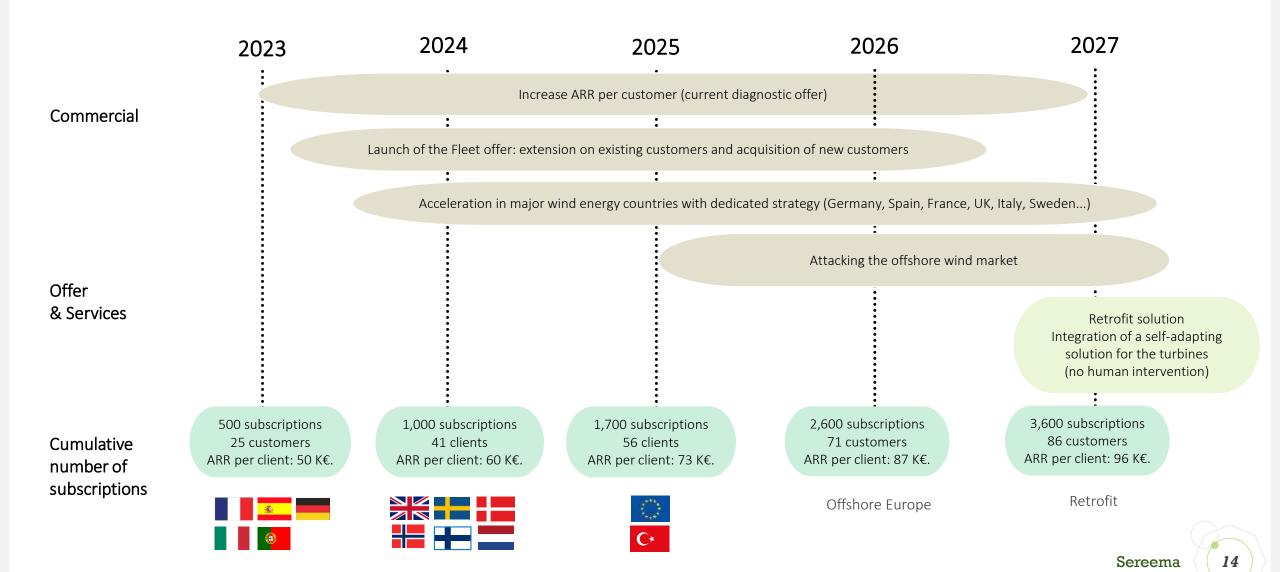
Daniel Pilaud - Elaia Partners - former CEO of Polyspace Technology and founder of IT Translation Investissements

Eric Durand-Gasselin - BA - co-founder and former CEO of AFONE

Eric Horlait - Advisor - Entrepreneur, University Professor, former President of Clardian, former Director General of Industrial Transfers and Partnerships at Inria

The 4-year development plan

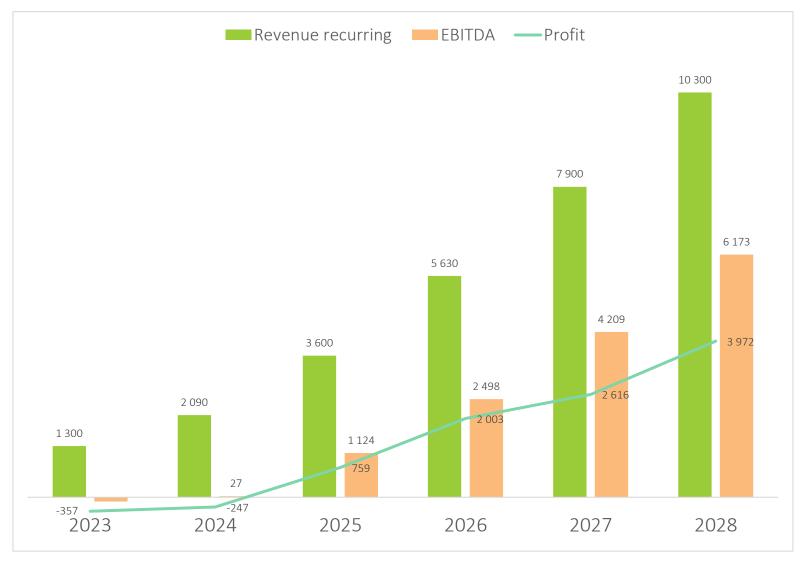
Strategy: target companies with a fleet of at least 40 turbines and provide services to 30% of these owners, equal to about 100 customers by 2027.



Financial Forecast

Objective:

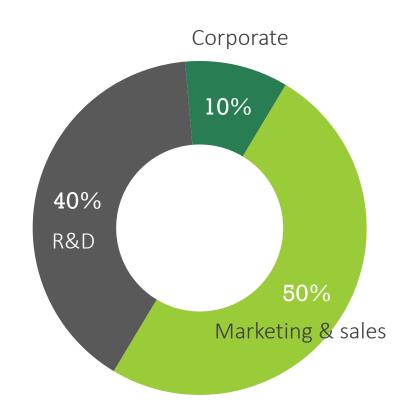
- increase the ARR by 6 within 5 years
- EBITDA > 40%.

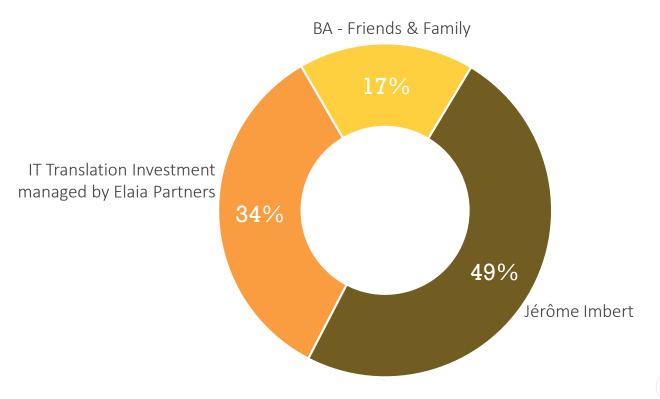


Financing

Prospecting 2 M€ in equity

Distribution of capital





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