

CASE STUDY

Transforming WTG Blade Inspections: In-Housing with Eve

ABOUT US

Perceptual Robotics is a UK based technology company, focused on drone automation and AI services in the field of Wind Turbine Blade Management. Our services cover from technology for field inspection to data processing and repair management. With presence worldwide and thousands of inspections made we keep investigating new solutions.

OVERVIEW

By adopting Dhalion, owners and operators can perform on-site inspections at their own pace, **avoiding logistical bottlenecks and improving inspection accuracy** through AI-driven defect detection and prioritisation.

Operators can **internalise blade inspections, gain full control of data, and make faster, better-informed maintenance decisions.**

FIGURES

- Up to **5 % increase in annual energy yield** through earlier erosion detection
- **4x faster inspection-to-decision** cycle versus outsourced workflows (48h vs weeks)
- **>50 %** reduction in inspection costs reported by adopters

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THE CHALLENGE

Outsourced blade inspections have long created pain points:



Delayed and incomplete reporting, often limited to summary PDFs without access to raw data.



Conflicts of interest, where fixed-cost repair models discourage thorough assessments.



Dependency on external logistics, causing scheduling delays and lost inspection days.



Limited insight, as operators lack visibility into the true condition of their turbines.

These factors collectively lead to **slower repairs, preventable energy losses, and higher long-term costs.**



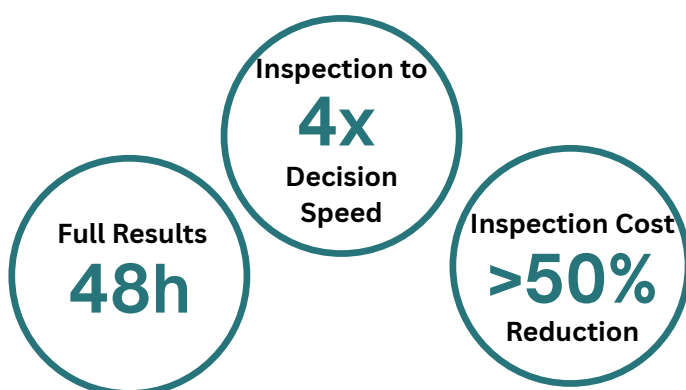
HOW

A leading Independent Power Producer (IPP) provides a compelling example of Dhalion's Eve impact.

By bringing inspections in-house, the IPP replaced generic external reports with AI-powered analysis and raw imagery reviewed by independent experts. This gave them **confidence to challenge previous repair strategies and optimise their own.**

RESULTS

By reclaiming control over the inspection process, operators not only reduce downtime and costs but also position themselves as innovators in proactive asset management.



Dhalion In House Solution

Autonomous compact
drone
Just press play
3 Blades 4 sides 1 flight

AI Damage Detection
AI Classification
Blade Expert
All in 48h

EXAMPLE

A **30cm blade crack** was tracked and measured through frequent in-house inspections, revealing it **doubled in size within weeks.** Thanks to their in-house system, they could immediately prevent costly structural damage and downtime. Regular or ad-hoc inspections now allow them to verify operator work, maintain accountability, and improve turbine availability across their fleet.

01

Adopt

Dhalion's autonomous drone inspection system.

02

Train online

Upskill existing technicians with just online training

03

Execute

On-site inspections at optimal times and conditions

04

Analyse and Act

Results in 48h, act on insights to prioritise repairs and prevent progressive damage

CONCLUSIONS

- **Faster decision-making** and damage detection.
- **Full transparency** with access to raw, high-resolution imagery.
- **Lower operational costs** and **improved data consistency.**
- Upskilled technicians, **boosting retention and technical capability.**