

A photograph of a solar farm at sunset. The sun is low on the horizon, casting a warm glow over the scene. In the foreground, there are rows of solar panels. In the background, several wind turbines are visible against the sky. The overall color palette is dominated by blues and oranges.

Driving new growth through new segments

**Alexandre Sauvage, Head of growth segments
Weather and Environment**

Investor event, November 10, 2022

VAISALA

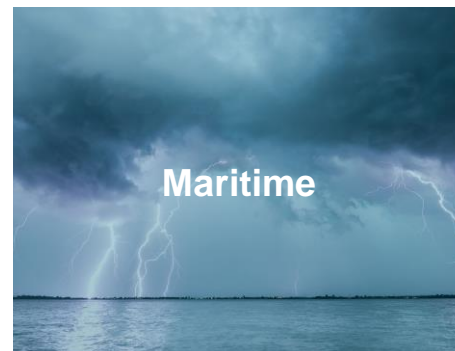
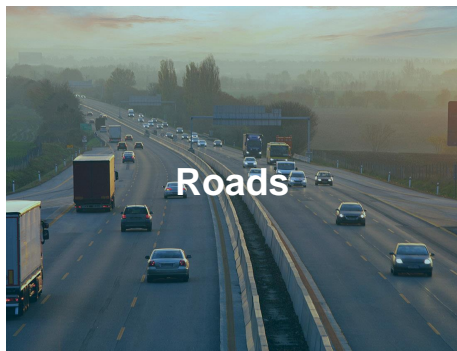
Leader in critical weather and environmental solutions for businesses

Growth segments to focus on double digit growth on new segment build

- Increase **net sales** on average **>10% p.a.** with **attractive profitability** despite **strong R&D investment**
- Reach **#1 global position in selected segments** with critical dependency on weather solutions

Strategic priorities:

- Develop and secure scalable, application-driven, unique, end-to-end solutions (HW/SW/DATA)
- Accelerate science & innovation leadership, and global brand build in each market



Growth mix: natural market expansion, build-up, conquest and disruption



Road networks' winter maintenance
Dominant market share on reference grade road and weather systems market



Cities' network: XaaS products or hybrid reference grade sensors and IoT filling in forecasts and decision-making software



Dynamic traffic management systems require air quality, and hyperlocal weather observations and forecasts



Urban Environment

Maritime

Renewables (wind & solar)

Industries

Growth mix: natural market expansion, build-up, conquest and disruption



Communities mesh their territory with **high density and 3D air pollution observation networks and forecast**



Smart city applications (HVAC, street lighting, EV charge..) require real time, local weather and air quality data



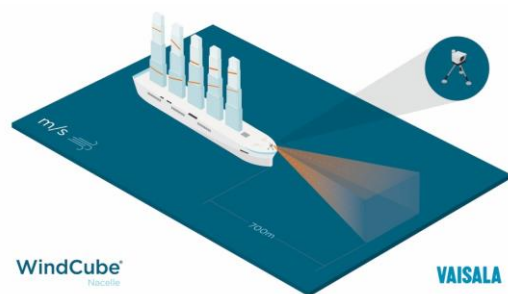
Maritime

Renewables
(wind & solar)

Industries

Roads

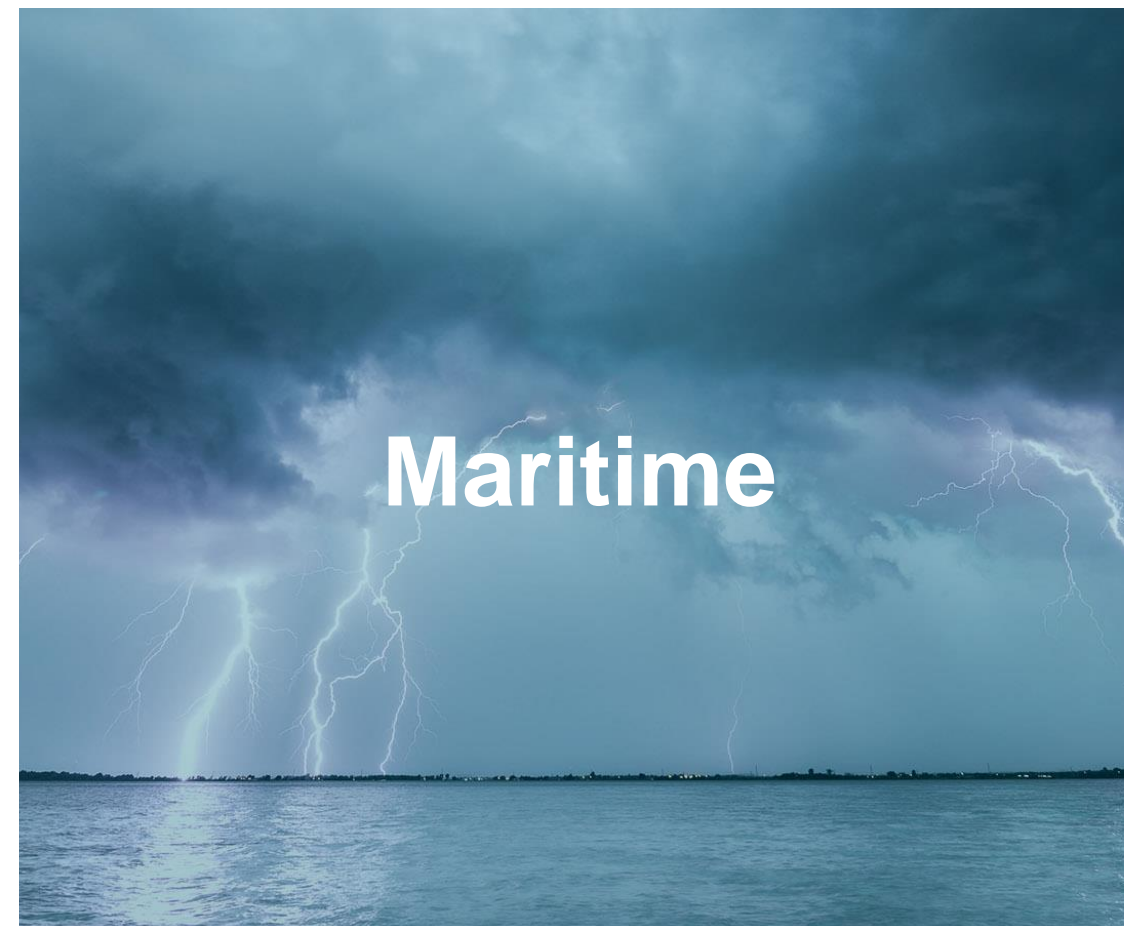
Growth mix: natural market expansion, build-up, conquest and disruption



In 2030, thousands of commercial vessels will use **wind assisted propulsion systems**, highly dependent on forward looking wind



O&G helideck monitoring and new **offshore wind constructions**



Renewables
(wind & solar)

Industries

Roads

Urban
Environment

Growth mix: natural market expansion, build-up, conquest and disruption

Weather is the fuel of renewables
Largest growth opportunity for Weather and Environment business area



Industries

Roads

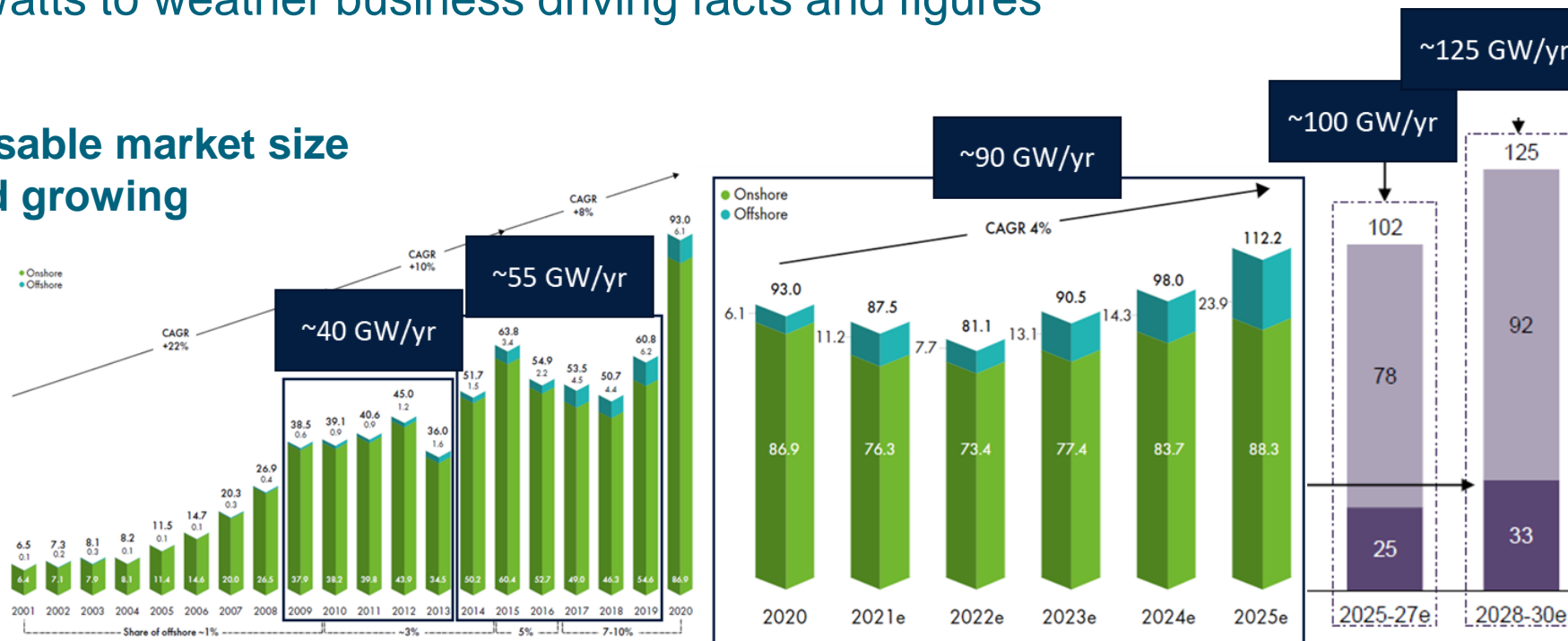
Urban
Environment

Maritime

Wind energy is growing

From GigaWatts to weather business driving facts and figures

**Total addressable market size
> 500 M€ and growing**



Sources: GWEC 2021 reports

1,500+ new wind farms per year
 → 4000+ measurement points in development phase
 → ~500 commissioning campaigns

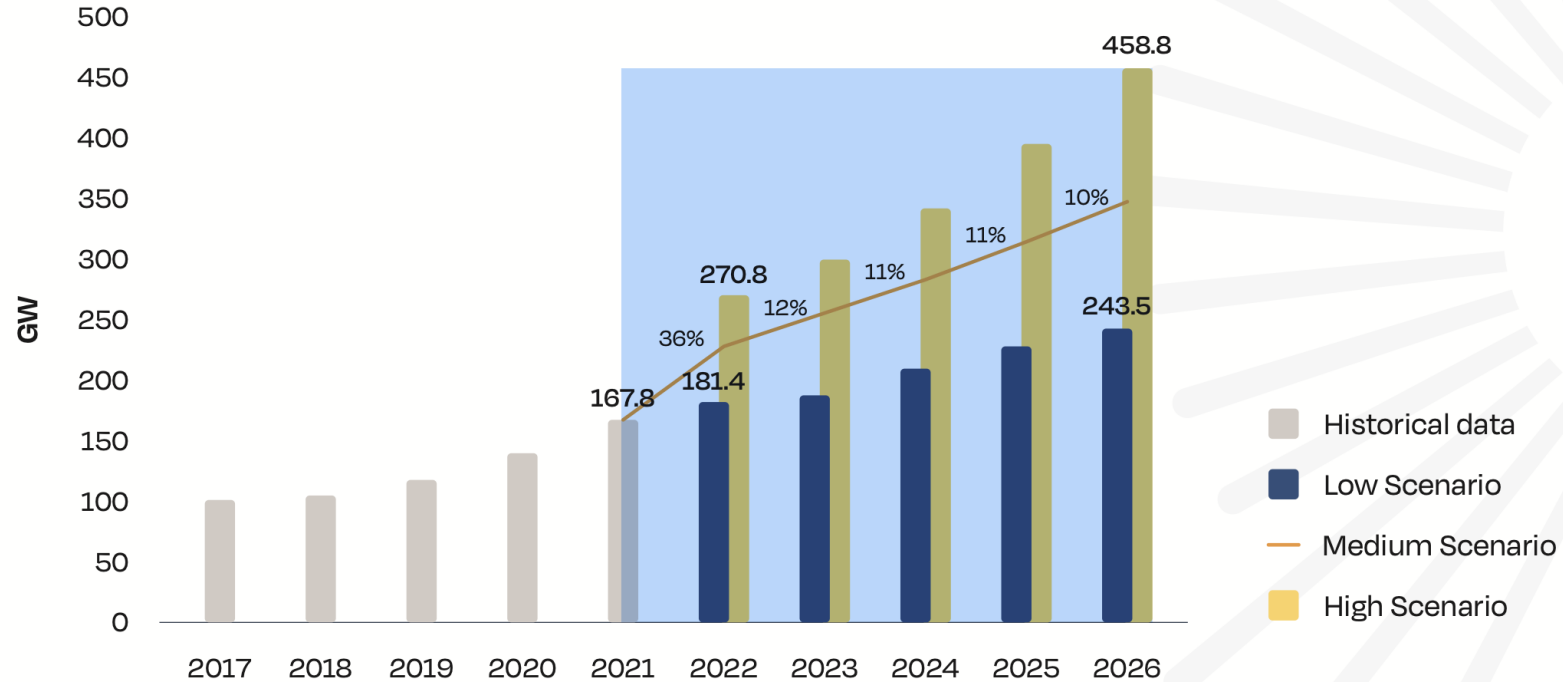
26,000+ new wind turbines per year
 → Turbine sensors

24,000+ operating wind farms in 2025
 → Forecasts and weather data

Offshore growth: from 20 to 70+ new wind farms per year
 → Measurement campaigns (development & commissioning)

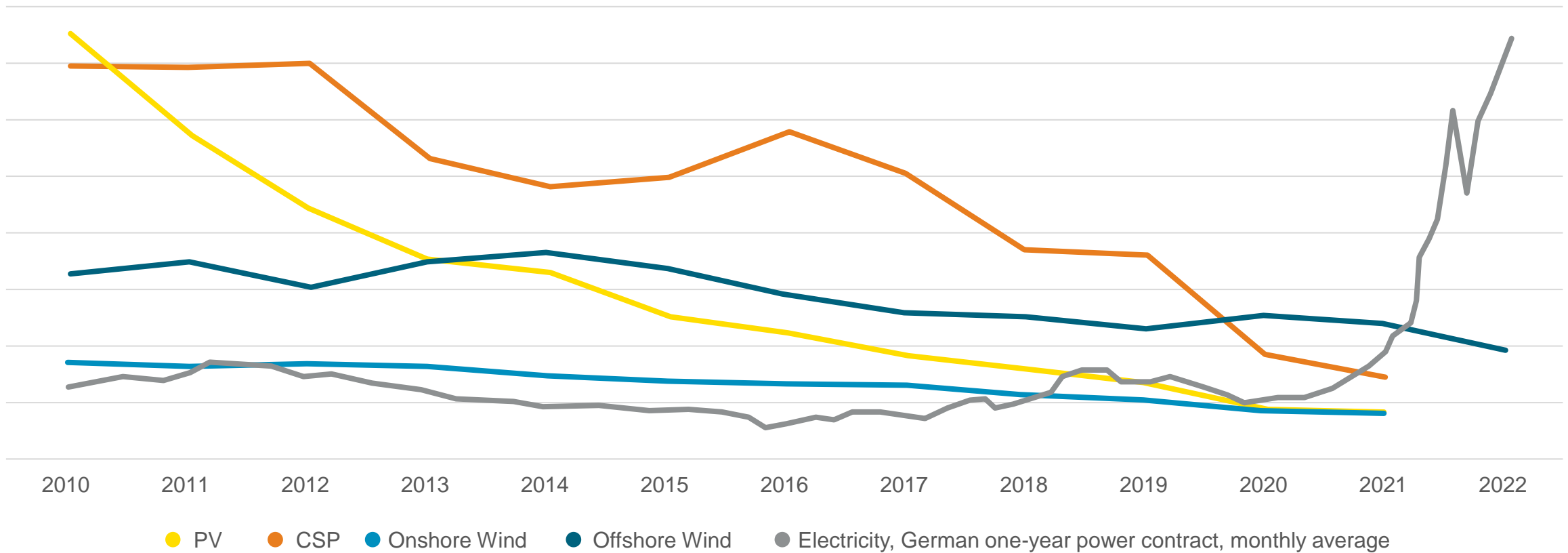
And solar is growing even faster

WORLD ANNUAL SOLAR PV MARKET SCENARIOS 2022–2026



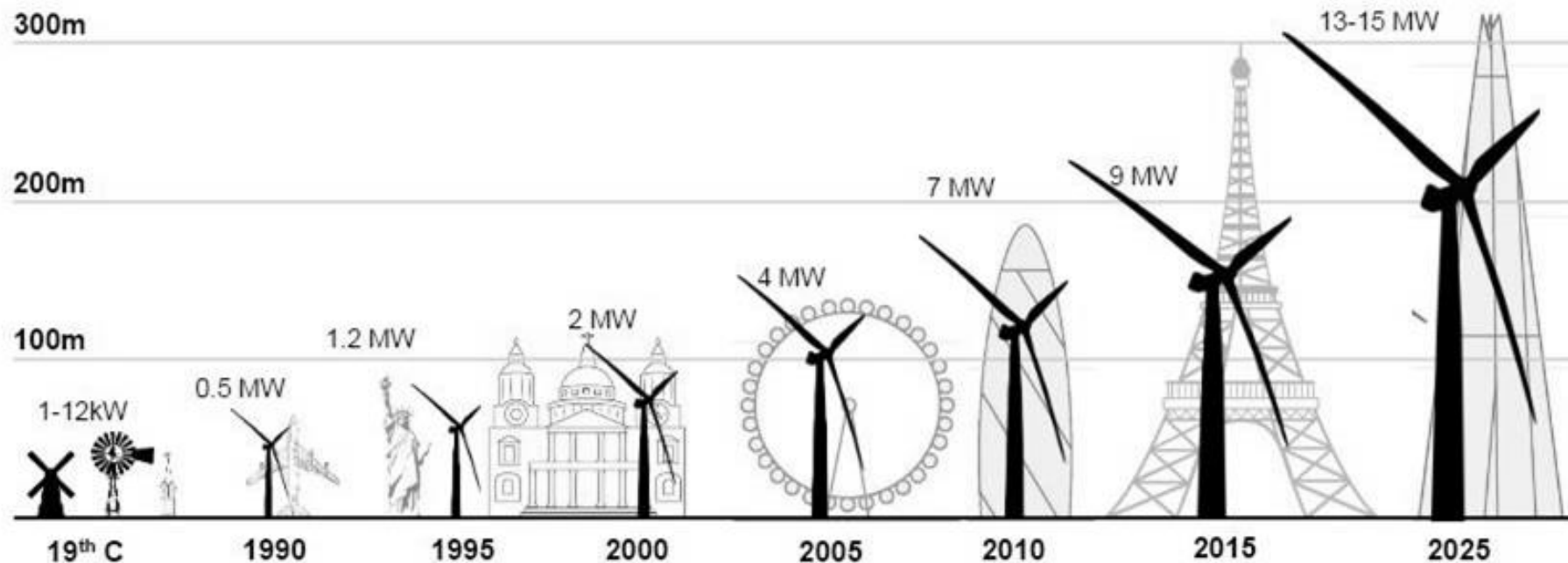
Source : Solarpower Europe 2022

Electricity crisis makes renewable even more competitive



Big equipment, big investment, big exposure to weather

Evolution of wind turbine heights and output



Sources: Various, Bloomberg New Energy Finance

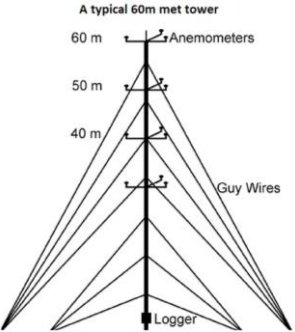
Renewables are intermittent because the weather is



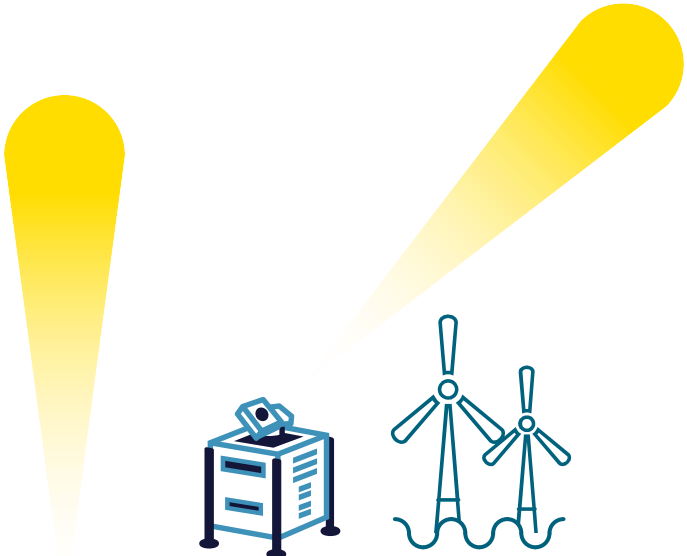
Financial-grade weather data tackles clean power challenges

Plan

Accelerate and reduce projects' uncertainty by eliminating wind extrapolation



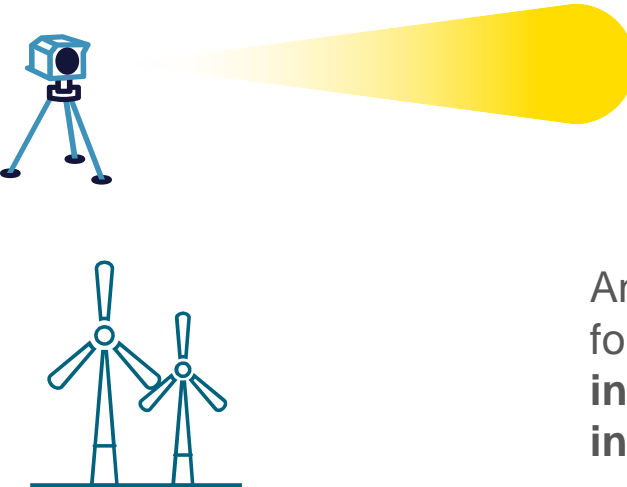
Expand



12km laser wind measurement to enable wind resource assessment offshore

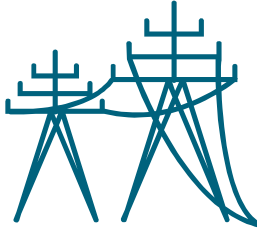
Operate

Detect wind minutes ahead to orient blade pitch and increase yield



Trade

And thus refine power forecasts to smoothen grid insertion and reduce intermittency impact



Lidar revolution is continuing in new applications

- Reducing uncertainty of wind resource assessment
- Measuring with accuracy the actual power curve of turbines
- Feeding turbines' control command functions with upcoming wind information



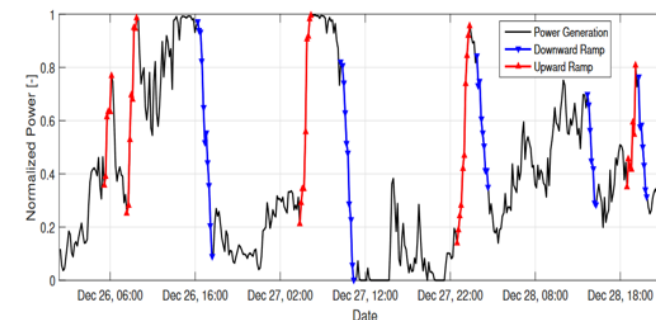
Weather solutions through entire farm lifecycle



- Wind/solar maps
- 30yrs time series
- Lightning strikes statistics
- Precipitation, icing etc. statistics
- Lidar/Solar station campaigns

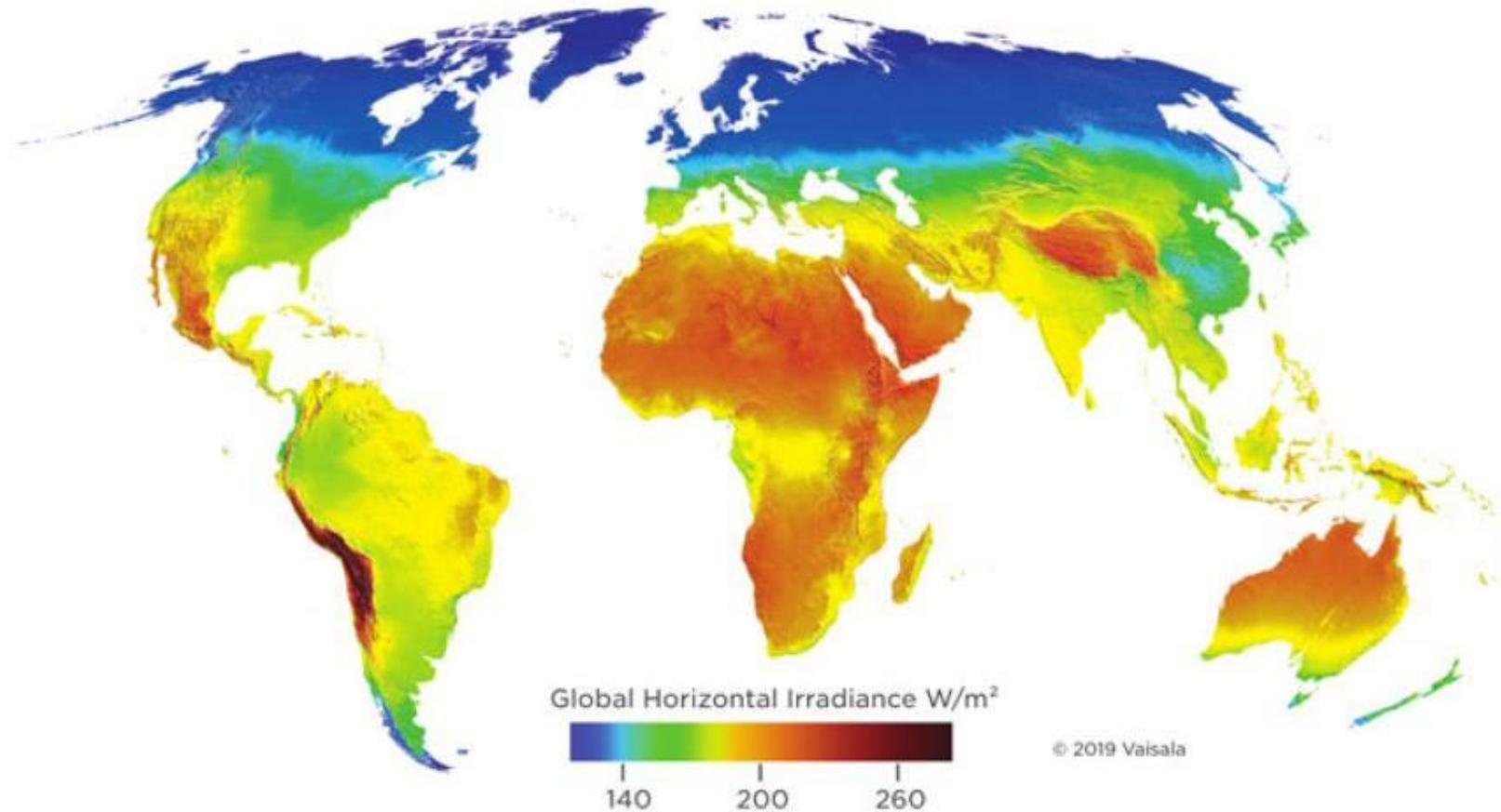


- Weather alerts
- Lidar-assisted craning
- Contractual performance verification



- Energy production forecasts
- Weather hazard & icing
- Lightning strikes alerts
- Continuous wind/solar monitoring
- Power performance testing

Solar: new growth through a unique full stack strategy



Driving new growth through new segments



New growing segments,
double-digit growth



End-to-End solutions
built on top of Vaisala
world's best sensors,
laser remote sensors,
and leveraging
Xweather data
products



Leading position
in selected market
segments with critical
dependency on weather



Growth by conquering
market shares, new
territories, M&A,
new solutions for
emerging needs with
high environmental
impact

VAISALA