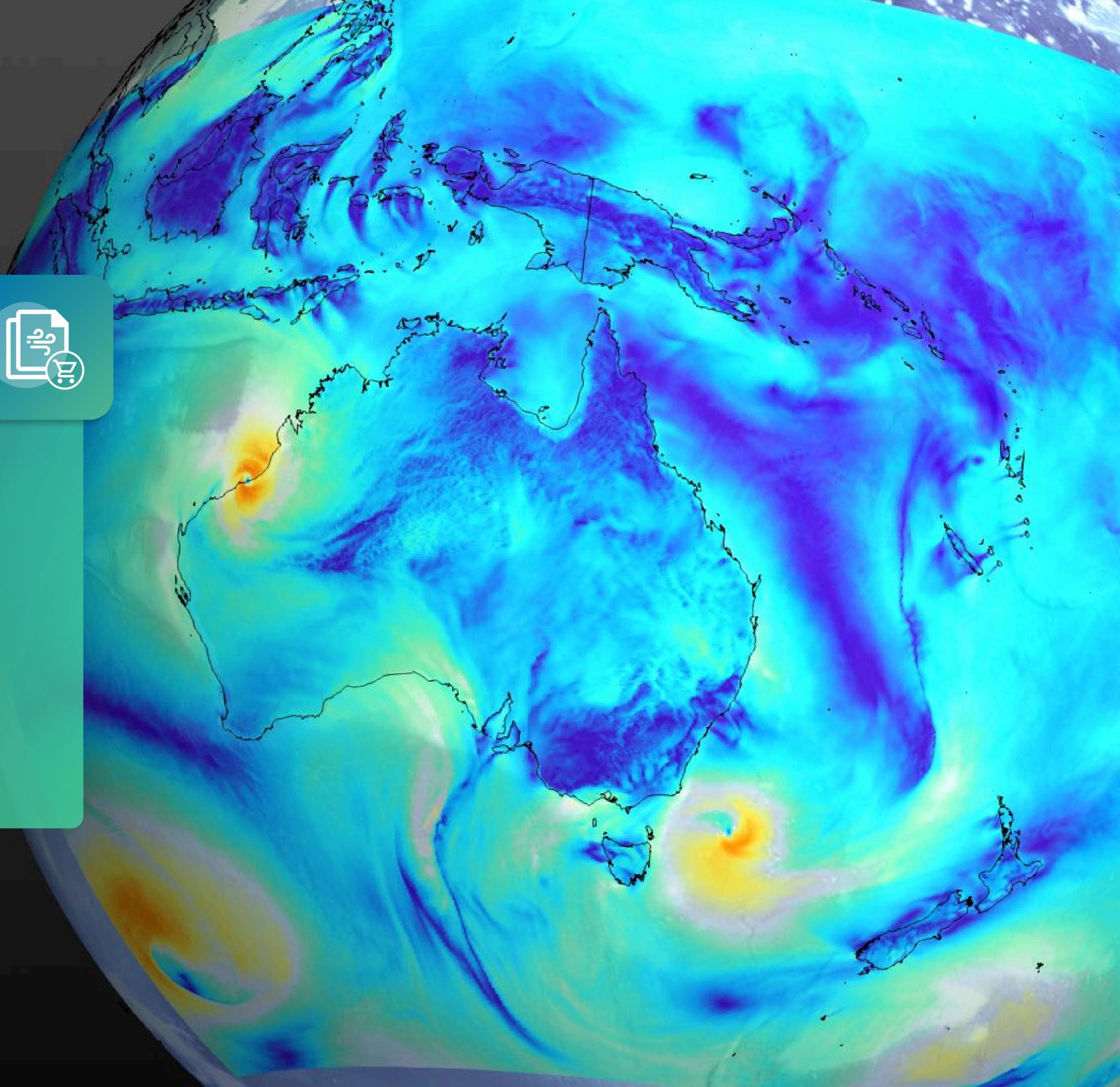
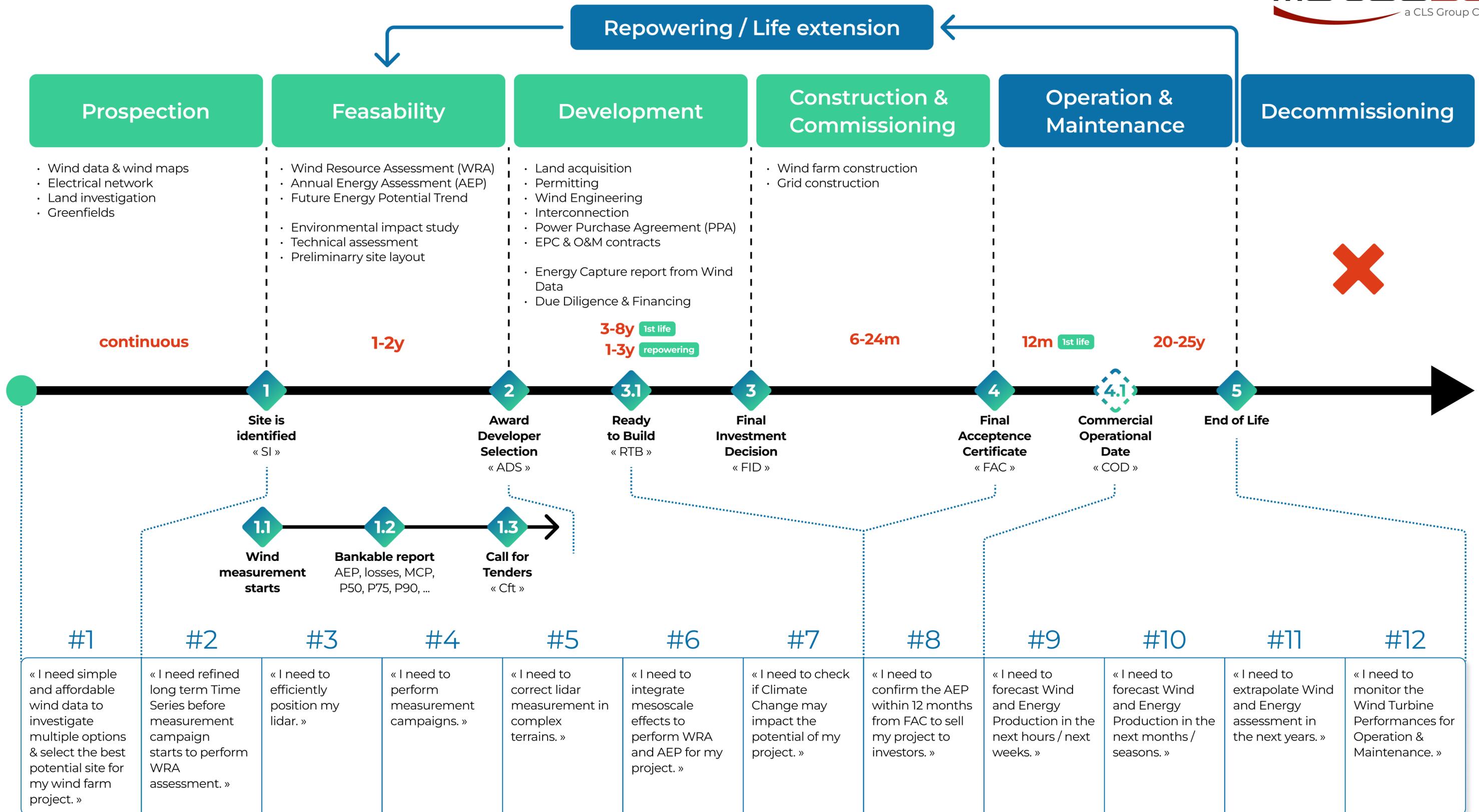




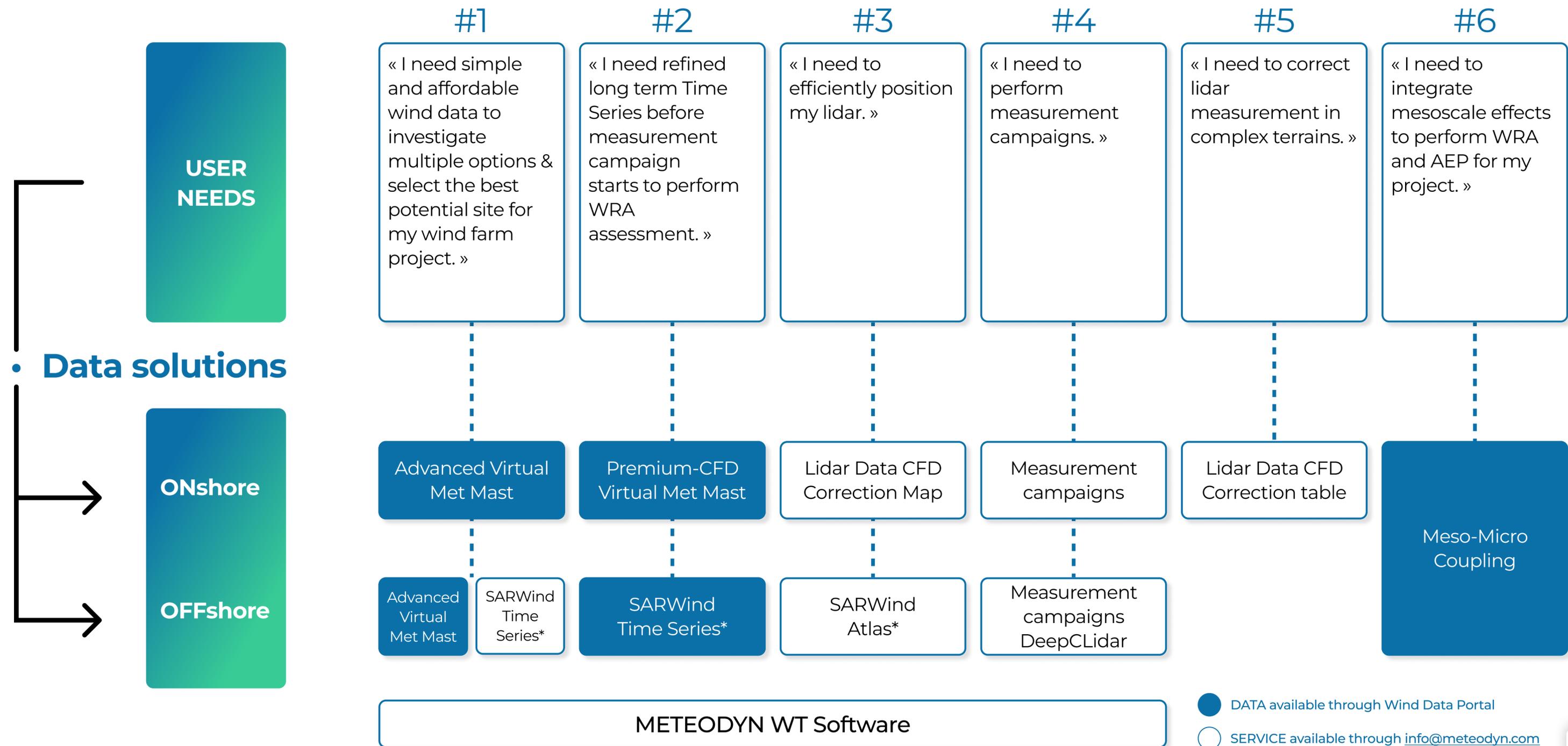
Wind Data Portal

The finest horizontal resolution
on the market





Data Solutions Overview

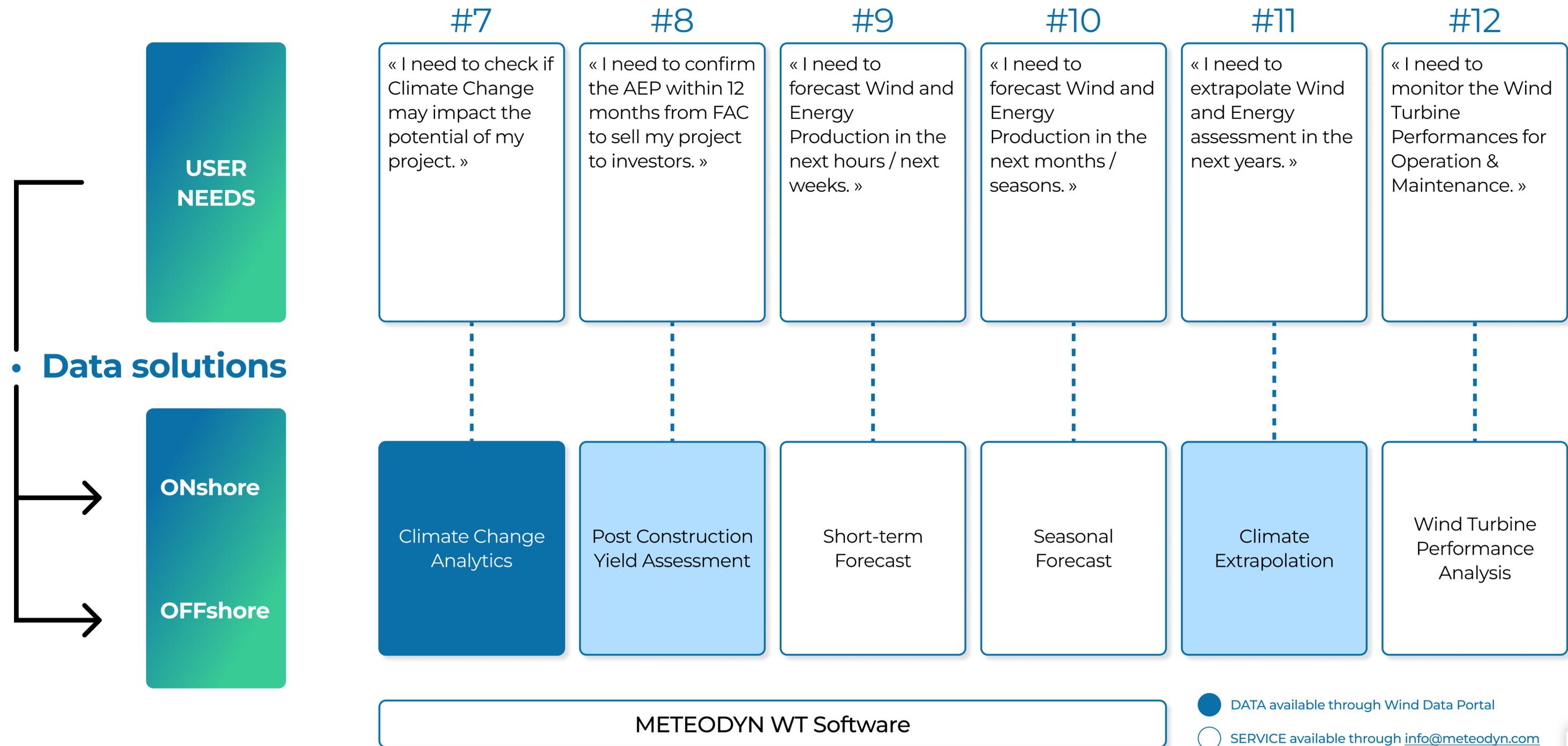


*SARWind product or Virtual Met Mast depending on zones available.

- DATA available through Wind Data Portal
- SERVICE available through info@meteodyn.com
- SERVICE in development (R&D)



Data Solutions Overview



- DATA available through Wind Data Portal
- SERVICE available through info@meteodyn.com
- SERVICE in development (R&D)





USER CASE #1

« I need simple and affordable wind data to investigate multiple options & select the best potential site for my wind farm project. »

Data Solutions Details

ONshore & OFFshore

Advanced Virtual Met Mast

- Worldwide mesoscale Times Series: Wind speed and direction, temperature & pressure
- Horizontal resolution up to 1km
- Any height between 50 and 300m
- 16 to 32 sectors wind direction rose
- Stability classes from Monin Obukhov Length
- Enables long-term correlations and mesoscale coupling simulations
- Format: .txt, .csv, NetCFD

OFFshore

SARWind Atlas

- Detailed and accurate mean wind speed mapping
- High horizontal resolution at 500m
- At 100m 150m & 250m heights
- Identification of areas with high wind potential
- Suitable for planning and feasibility studies
- +330 000 Satellite images post-processed
- Format: WRG





USER CASE #2

« I need refined long term Time Series before measurement campaign starts to perform WRA assessment. »

Data Solutions Details

ONshore

Premium Virtual Met Mast

- Worldwide mesoscale Times Series : Wind speed and direction
- Downscaling at high horizontal resolution up to 50m
- Any height between 50 and 300 m
- 16 to 32 sectors wind direction rose
- Stability classes from Monin Obukhov Length
- Format : .txt, .csv

OFFshore

SARWind Times Series

- Hourly wind speed time series
- High horizontal resolution at 500 m
- At 10m, 100m, 150m & 250m heights
- Detection of seasonal and interannual trends
- Compatibility with energy production models
- Enable in-depth analysis of the wind potential of a given area
- +330 000 SAR Satellite images post-processed
- Long-term MCP-like spatial correction based on satellite observations





USER CASE

#3

« I need to efficiently position my lidar. »

Data Solutions Details

ONshore

Lidar data

- Measurement device positioning optimization
- LiDAR wind measurement correction map
- CFD modeling on complex terrain
- Measurement error improvement by Meteodyn technique
- Accurate method validated with meteorological mast data
- LiDAR suppliers : ZX (Zephyr), Windcube (Vaisala), Molas (Movelaser)
- Format : .png, .jpeg

OFFshore

SARWind Atlas

- Detailed and accurate mean wind speed mapping
- High horizontal resolution at 500 m
- At 10m, 100m, 150m & 250m heights
- Identification of areas with high wind potential
- Suitable for planning and feasibility studies
- +330 000 Satellite images post-processed
- Format : WRG





USER CASE

#4

« I need to perform measurement campaigns. »

Data Solutions Details

ONshore

Measurement campaign

With Certified Partners :

- Worldwide accurate wind measurement campaigns
- Onshore Met Mast installation
- Wind measurement campaigns
- Bankable report

OFFshore

DeepCLidar

- Worldwide accurate wind measurement campaigns
- Offshore Floating LiDAR (DeepCLiDAR) for Wind Assessment
- Carbon Trust Certification

With Certified Partners:

- Bankable report





USER CASE #5

« I need to correct lidar measurement in complex terrains. »

Data Solutions Details

ONshore

Lidar Data CFD Correction Table

- LiDAR wind measurement correction table
- CFD modeling on complex terrain
- Measurement error improvement by Meteodyn technique
- Accurate method validated with meteorological mast data
- LiDAR suppliers : ZX (Zephyr), Windcube (Vaisala), Molas (Movelaser)
- Format : .csv, .xls





USER CASE #6

« I need to integrate mesoscale effects to perform WRA and AEP for my project »

Data Solutions Details

ONshore & OFFshore

Meso-micro coupling

- Mesoscale-microscale coupling feature (MMC)
- Highest Meteodyn WT-CFD software accuracy, speed, and refinement (up to 10m)
- WRA & AEP computation
- Mesoscale effects assimilated into the CFD solver
- Classify by wind direction & stability classes
- Format : .sam





USER CASE #7

« I need to check if
Climate Change may
impact the potential
of my project. »

Data Solutions Details

ONshore & OFFshore

Climate Change Analytics

- Wind Resource Trends (WRT)
- Energy Production Trends (EPT)
- Climate Horizon from 2035 to 2050, 2090
- IPCC Climate scenarios
- Any heights between 10m to 300m
- Monthly Heat Maps (Mean, Median, P10, P90, StD)
- Advanced climate model quality assessment
- Format : .txt, .csv, NetCDF





USER CASE #8

« I need to confirm the AEP within 12 months from FAC to sell my project to investors. »

Data Solutions Details

ONshore & OFFshore

Post Construction Yield Assessment

- Accurate & reliable Machine Learning wind energy production forecasts
- Any height at wind farm level
- Mid-long term : 12 months ahead (1 year)
- Monthly wind energy production and wind speed distribution
- Deliveries ranges : monthly





USER CASE #9

« I need to forecast
Wind and Energy
Production in the next
hour / next weeks. »

Data Solutions Details

ONshore & OFFshore

Short-Term Forecast

- Accurate & reliable Machine Learning wind power forecasts
- At national, regional, wind farm or wind turbine levels
- Retrospective forecasts
- Short-term : minutes, hours, days, weeks
- Wind power, wind speed and direction, temperature, pressure, relative humidity
- Production probability distribution (P10, P25, etc.)
- Deliveries ranges : up to hourly/day





USER CASE #10

« I need to forecast
Wind and Energy
Production in the next
months / next
seasons. »

Data Solutions Details

ONshore & OFFshore

Seasonal Forecast

- Accurate & reliable Machine Learning wind power forecasts
- At national, regional and wind farm levels
- Retrospective forecasts
- Medium-term : monthly, seasonal
- Wind power, wind speed and direction
- Monthly & Seasonal Heat Maps
- Delivery range : every month





USER CASE #11

« I need to extrapolate
Wind and Energy
Assessment in the
next years. »

Data Solutions Details

ONshore & OFFshore

Climate Extrapolation





USER CASE #12

« I need to monitor the
Wind Turbine
Performances for
Operation &
Maintenance. »

Data Solutions Details

ONshore & OFFshore

Wind Turbine Performance Analysis

- Wind Resource, Wind Turbine Availability & Wind Turbine Performance Analyses
- Wind Farm Performance Analysis Report
- Wind Resource Heatmap
- Production gain/loss
- Wind Turbine KPI (TBA/PBA/Losses/MTTR, MTTF, etc.)
- Real power curve through validated Meteodyn SCADA data classifications
- Advanced Performance analysis (Turbine failure, Yaw misalignment, etc.)

