



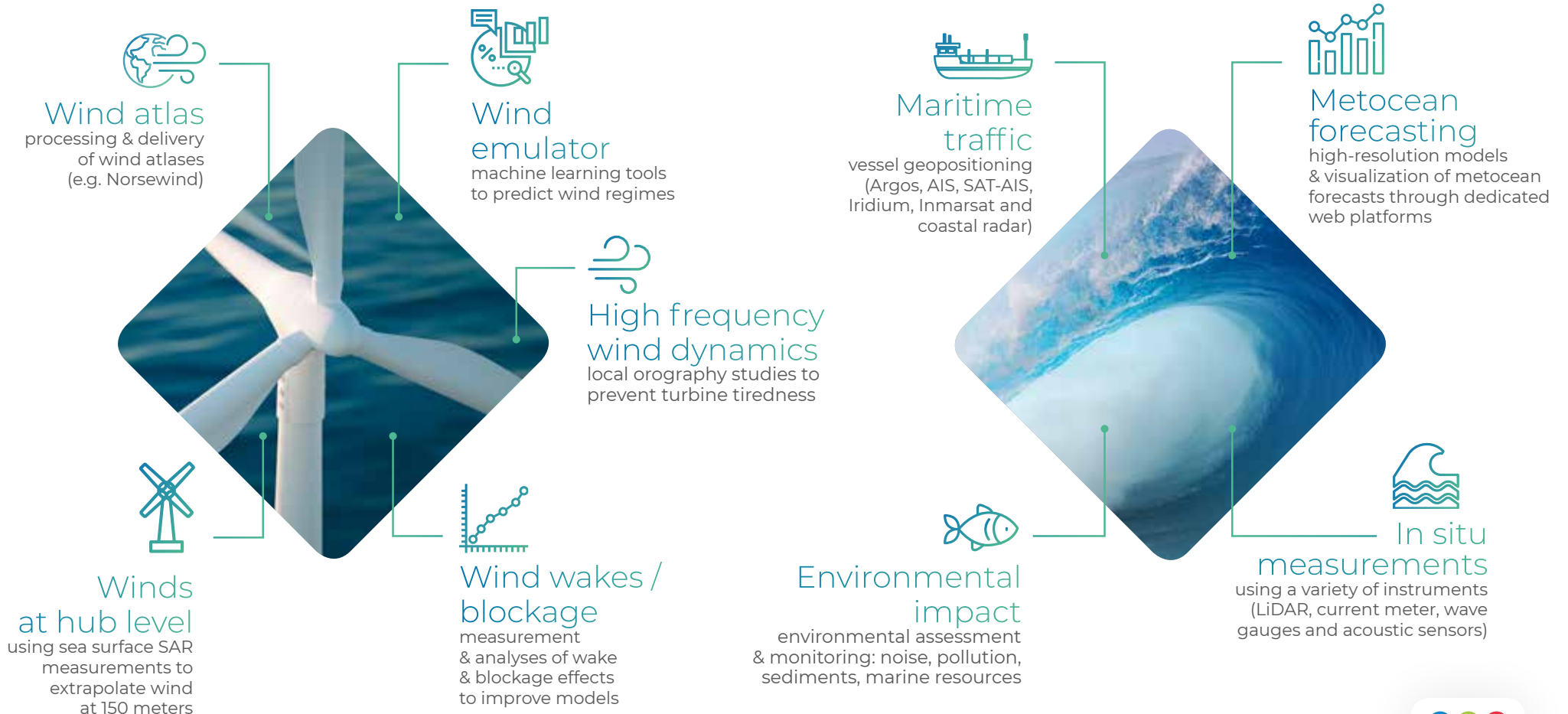
# INTEGRATED SOLUTION for Offshore Wind & Ocean Assessment



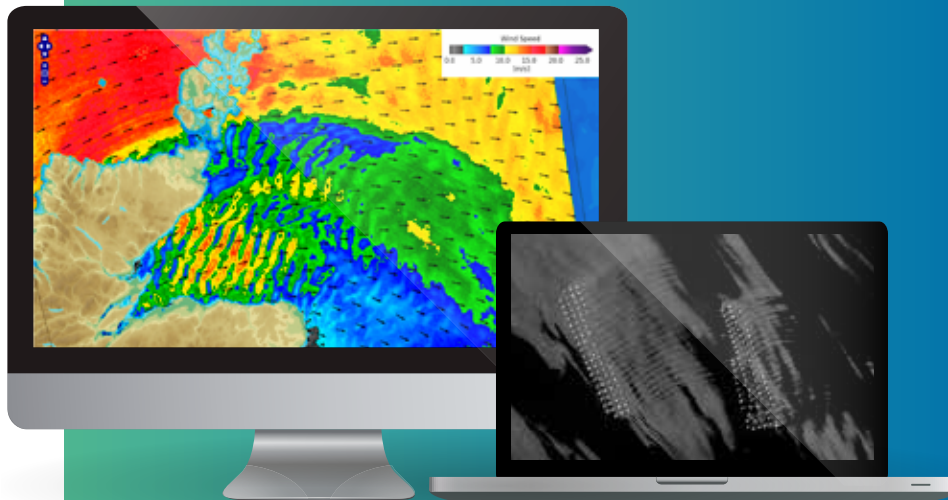
# An Integrated Solution for Offshore Wind & Ocean Assessment

## Wind Assessment derived from SAR (Synthetic Aperture Radar) satellites

## Ocean Assessment from multiple data sources



At **CLS**, we measure the invisible: the wind, its direction, its strength, all in very high resolution.



We merge huge amounts of data to make it intelligible and directly usable.

Synthetic Aperture Radar (SAR) satellite imagery, combined with in-situ data, LiDAR, and models, guarantees a fine-grained assessment of wind potential.

# OUR UNIQUE EXPERTISE

for offshore wind



## MULTI-SOURCE DATA

- Satellite imagery SAR (Synthetic Aperture Radar)
- LiDAR
- Metocean data collection systems
- Acoustic sensors
- Vessel traffic positions
- Fishing activity monitoring



## ANALYSIS & STUDIES

- Extrapolation of wind up to 150 meters from combining LiDAR/SAR/Atmospheric Models
- Studies of wake and blockage effects



## MODELLING

- High resolution models: wave, current, atmospheric



## INSTALLATION

- In-situ measurement campaigns

# CLS

CLS (Collecte Localisation Satellites) is a worldwide company and has been a pioneer provider of monitoring and surveillance solutions for the Earth since 1986.

Our mission is to provide innovative space-based solutions to understand, protect our planet and to manage its resources sustainably.

**25 years**  
of experience  
in offshore  
projects

**10 years**  
of expertise with  
ESA (European  
Space Agency)  
calibrating  
Sentinel-1  
satellites

**30 years**  
of expertise  
in spatial  
and in-situ  
oceanography

## SINCE 2008, CLS GROUP INNOVATES IN OFFSHORE WIND KNOWLEDGE:

- ⊗ Wind atlas northern Europe / NORSEWIND project.
- ⊗ European Energy Research Alliance design: EERA – dtoc (fp7) project.
- ⊗ CARAVELE project / France Energies Marines.

CLS and its subsidiaries WOODS HOLE GROUP and PROOCEANO provide a complete, integrated service to the offshore wind industry.



@ sales-energies@cls.fr

energyoffshore-cls.com

