# An Introduction to Floating LiDAR

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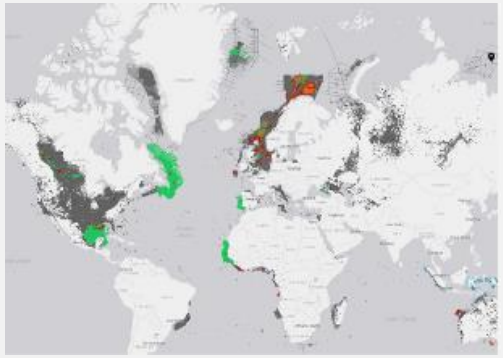
# TGS - The World's Leading Energy Data Company

## MC Data Library



- World's largest 2D and 3D library
- USD 5bn invested over 40 years
- Onshore and offshore
- Frontier and ILX
- Proven technology and innovation

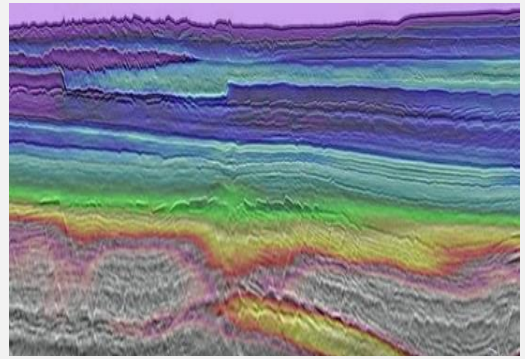
## Ocean Bottom Nodes

- World's leading OBN company
- Technology leader
- Strong track record in key basins
- Completed 100 OBN surveys
- Industry leading safety records

## New Energy Data


- Data offerings for renewables
- Wind axiom combining public and proprietary data with AI
- Carbon storage capabilities
- 4C Offshore intelligence
- Performance optimization software through acquisition of Prediktor

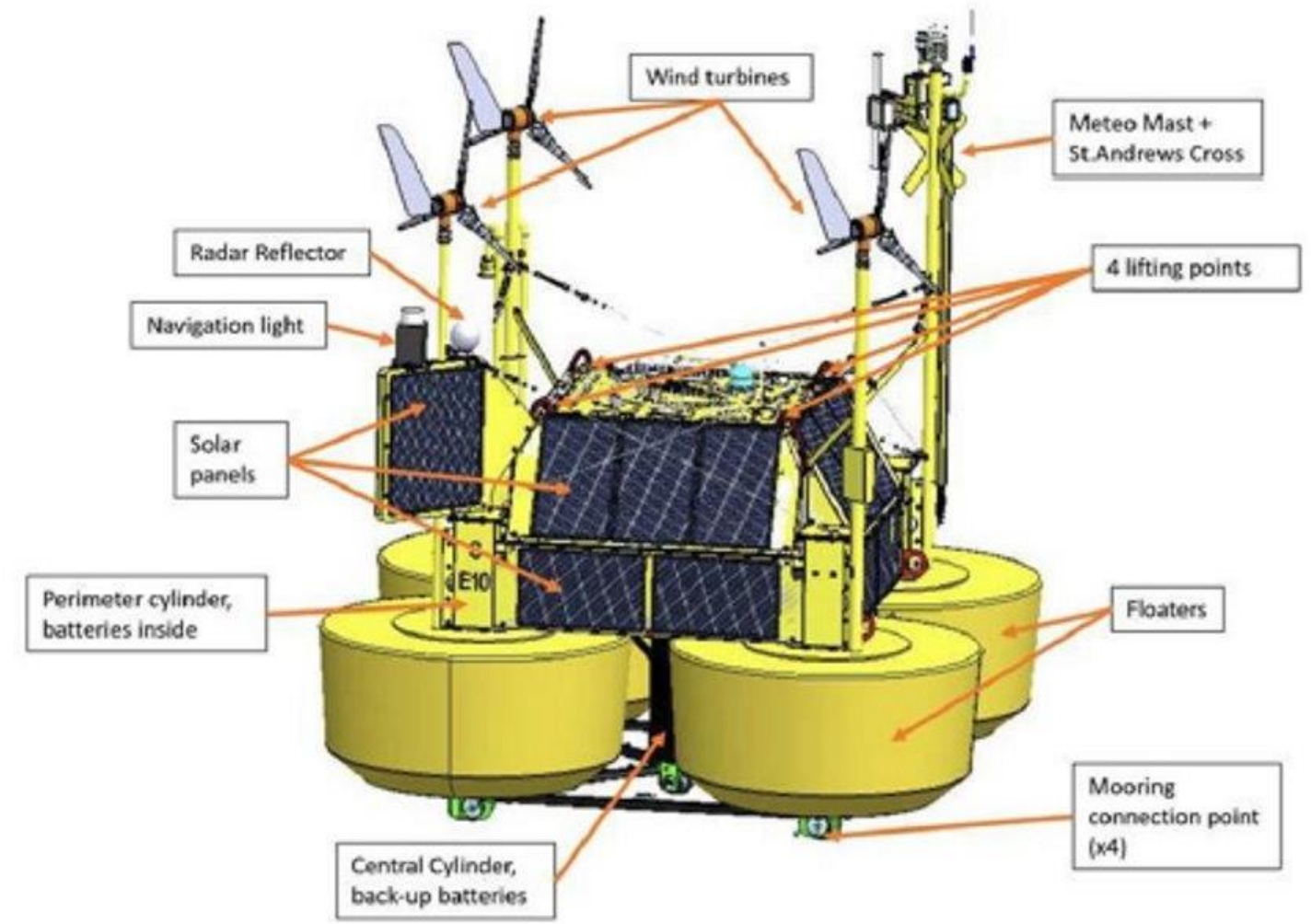
## Data Processing



- 250 processing employees globally
- Unmatched compute capacity
- Proprietary and MC business model
- DAS and VSP Imaging
- Land and marine

# What is Floating LiDAR?

- Floating LiDAR units acquire offshore wind measurements from a vertical profiling LiDAR, typically fitted to a buoy or other floating structure
- The LiDAR unit focuses an infrared laser at a specific measurement altitude. The light is scattered by aerosols and returns to the LiDAR device for analysis of the Doppler shift.
- The LiDAR unit takes a series of measurements at different positions to reconstruct the wind field
- Other sensors can be mobilised to the buoy



# Why Use Floating LiDAR?

- During the early stages of project development, the uncertainty of metocean and wind resource conditions is elevated, often due to a lack of high-quality measurements
- Floating LiDAR has been the preferred wind resource measurement tool in offshore wind for over 10 years
- No requirement for a fixed met mast which are expensive and require a lengthy permitting process
  - Fixed met mast c. £10-12 million
  - Floating LiDAR c. £1-2 million
- Important for developers to know how much wind is out there to calculate Annual Energy Production (AEP)
- Reliable, high quality data is crucial to ensure ‘bankable’ data is captured for future investment decisions

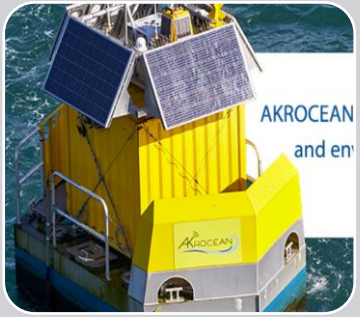
# Floating LiDAR in Short Supply

EOLOS

Fugro

Axys

RPS




AKROCEAN

Blue Aspirations

- Current and planned capacity doesn’t match market growth expectations
- Only several systems reached Stage 3 validation (data quality stamp from Carbon Trust)
- Technology well validated but continuing to improve

# Multi-client Business Model

- To overcome client ‘pain points’, TGS have implemented the following multi-client business model:

## Multi-Client Business Model

TGS identifies project opportunity → TGS secures customer commitment → TGS invests in and manages project → TGS licenses data to multiple clients

**VS**

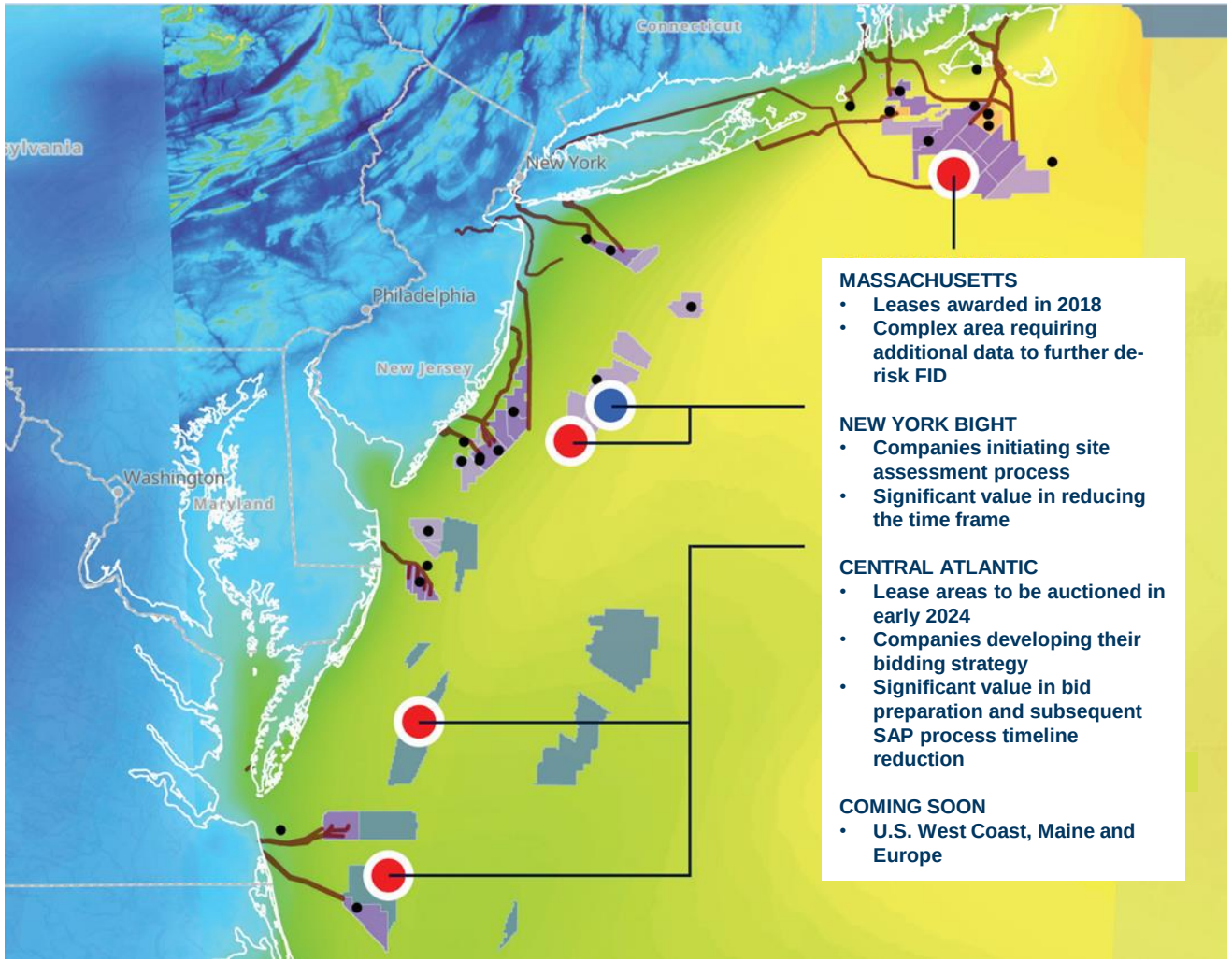
## Proprietary Business Model

Client tenders for service → Client awards and funds project → Client owns data

## Benefits:

- **Early access to wind energy data**
  Obtain data ahead of lease auctions, enabling early access to data and reducing bidding strategy uncertainty
- **Cost effective**
  Save money with long-term data licenses at significantly reduced cost compared to proprietary campaigns
- **Trusted quality**
  Leverage TGS’ network of established partners to provide the best equipment, including Stage 3 buoys
- **No operational risk**
  Rely on TGS to handle the entire process - permitting, deployment, maintenance, data management, etc.

# Current TGS LiDAR Locations




- Initial deployments are focused on supporting wind energy development along the east coast of the United States
- Subsequent deployments will significantly improve our understanding of the wind resource and metocean conditions across the eastern US seaboard
- Scheduled deployment in Europe during June 2023
- Actively scouting new multi-client opportunities

# Thank you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