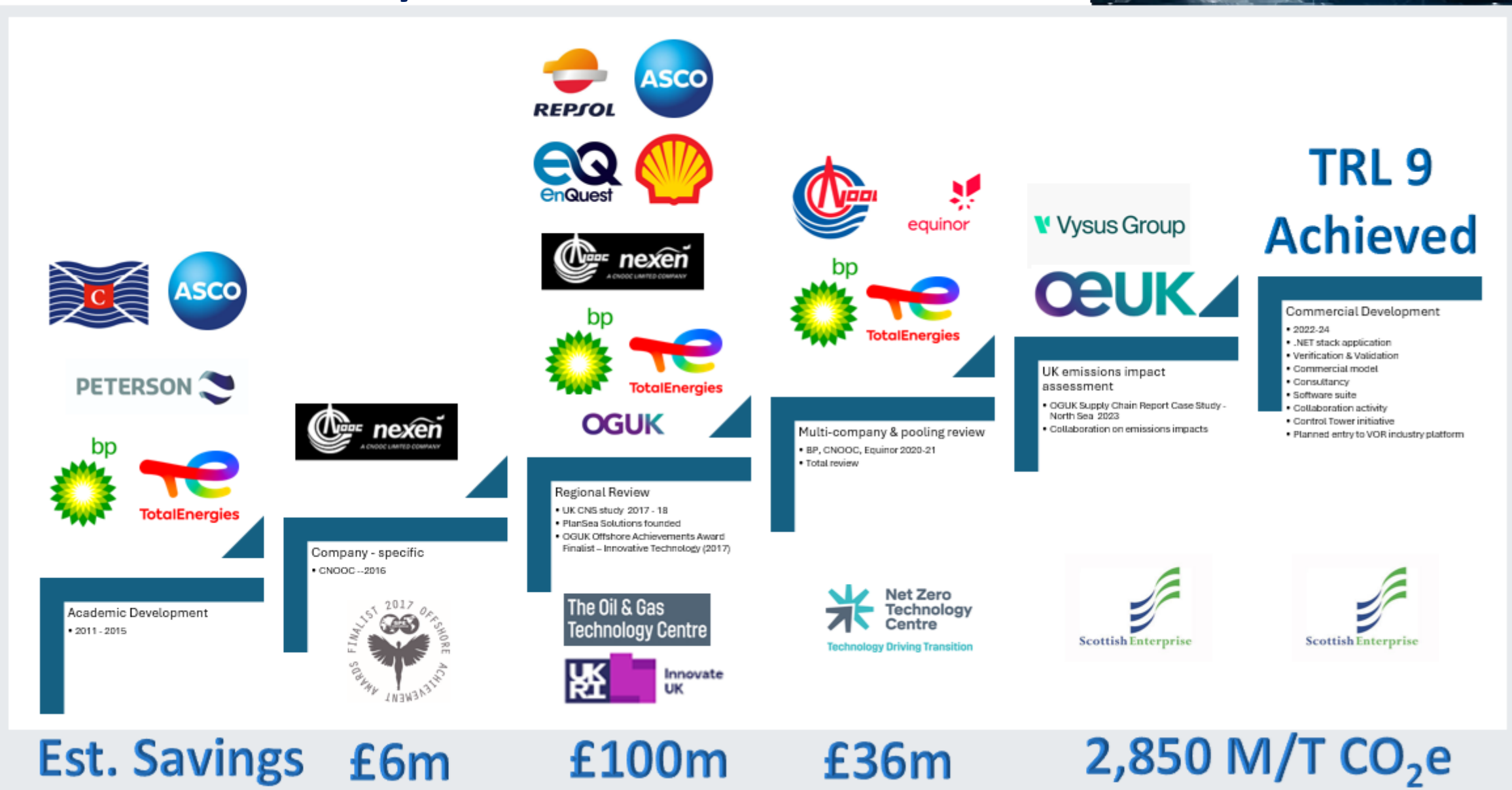




Emissions Reduction In Marine Operations Through Use Of Artificial Intelligence

February 2025

The PlanSea Journey



Deliverables

- **Emissions reduction** and forecasting tool
- **Cost reductions** and **enhanced planning/budgeting**
- Process **digitalisation** with greater **visibility**
- Facilitation of **outsourcing/collaboration**
- **Reduced dependence** on marine spot market
- Create opportunities for **new business models**

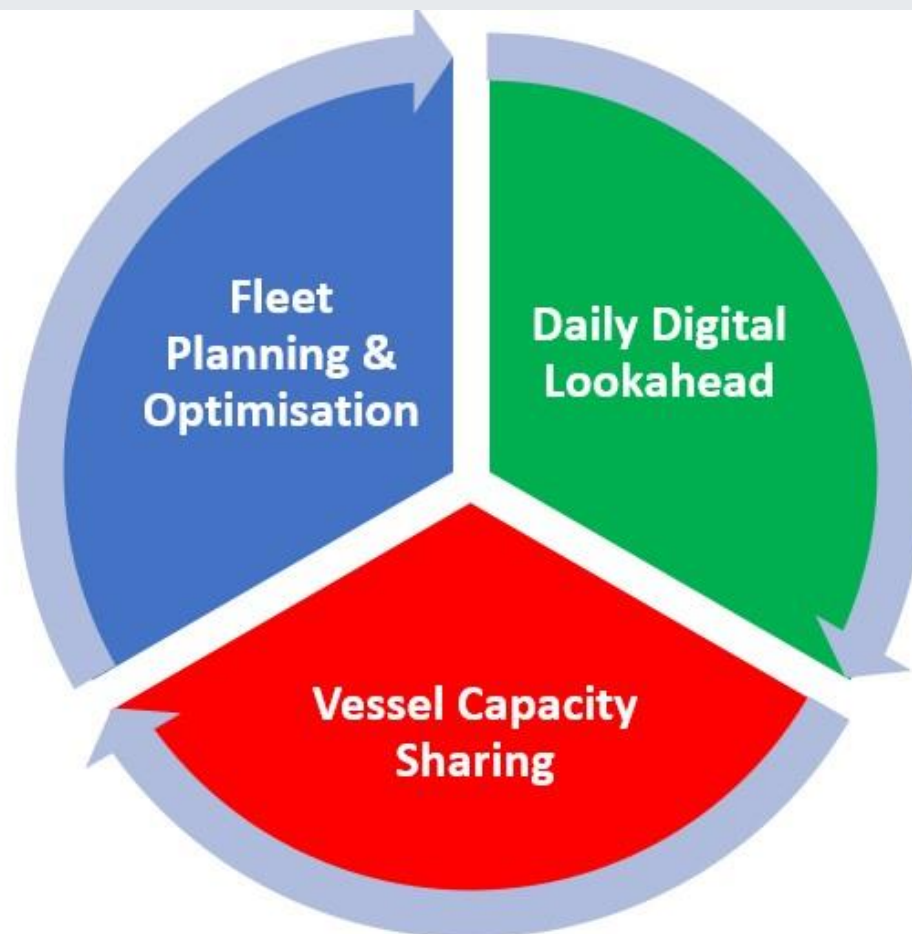
The PlanSea Software Suite

Summary

- Market ready tools
- **Digitalisation** and enhanced **Visibility**
- Benefits for **standalone and collaborative** groups of operators

Fleet Planning /Optimisation

- **AI-based optimisation** software
- **Strategic planning & evaluation** for all offshore activity



Daily Digital Lookahead (DDL)

- App replaces manual 'Lookahead'
- Multi-user inputs – real time capability
- Auto-feeds VCS

Vessel Capacity Sharing (VCS)('Uber')

- 'Uber-type' highly visible solution
- Manual & DDL fed
- Reduces dependence on spot market

The software has undergone extensive development and testing with a variety of operators

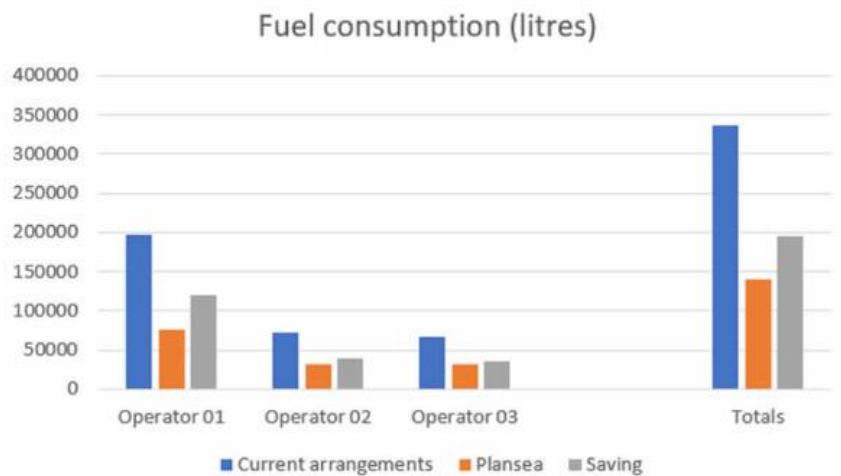
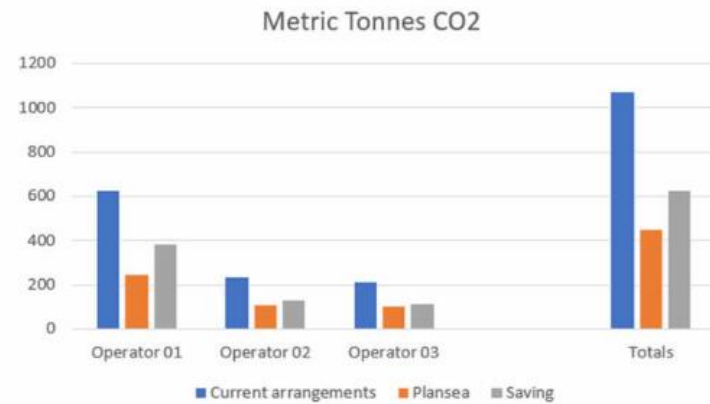
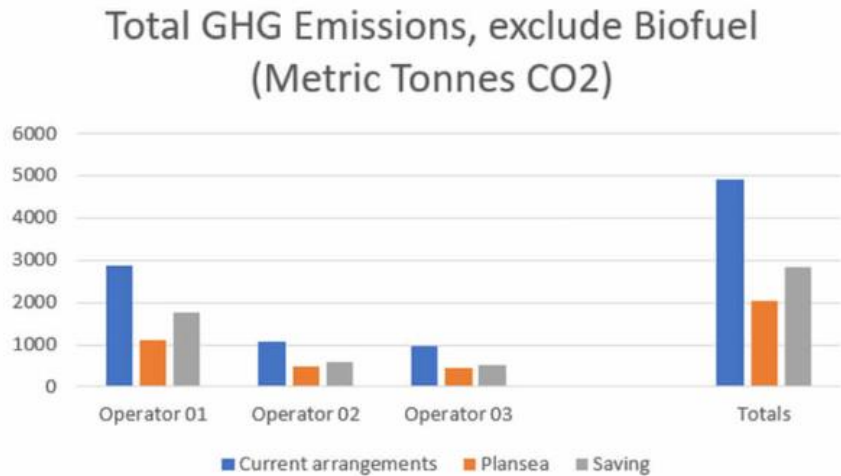
Potential Benefits with PlanSea AI Optimisation

Multi-user and pooled scenarios (3 Operators; multi-port annual activity)

Scenario	Lifts	Average Vessels	Number of Voyages	Sailing Time (Hours)
Actual	52874	12.64	1,014	30,826
Port #1 & Port #2, Unchanged Base Quay	52874	6.79	384	13,509
Port #1 & Port #2, Balanced Base Quay	52874	6.89	387	13,639
Port #2 Base	52874	6.75	393	12,846
Port #1 Base	52874	6.85	391	14,920
Reduction	-	47%	61%	58%

Above based on actual UKCS activity – PlanSea’s optimisation software results in substantial cost and emission reductions – creating opportunities for outsourced fleets and gainshare models.

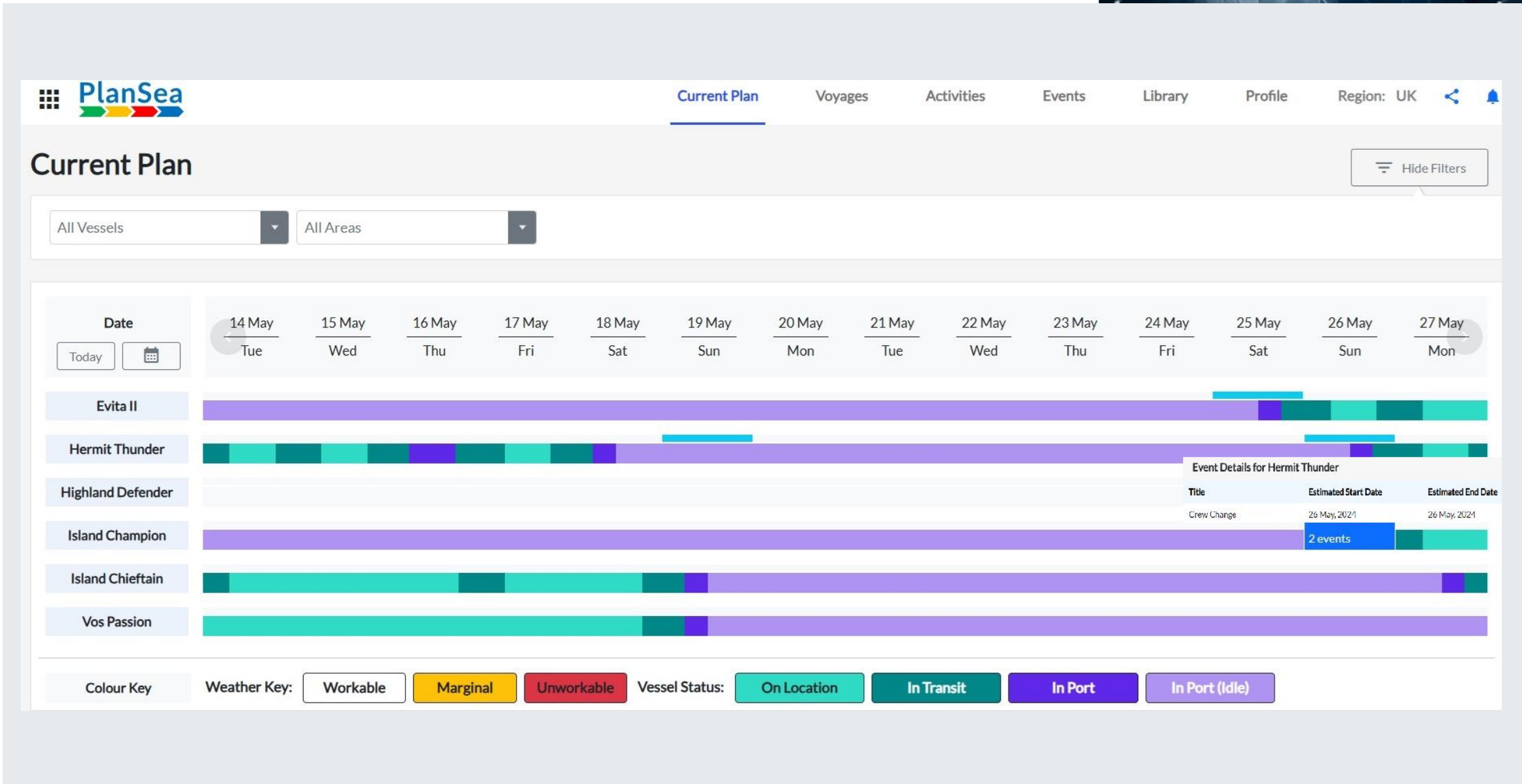
The Emission Reduction Results



Comparison of vessel activity data using the PlanSea AI software vs baseline vessel figures shows a clear reduction in CO2 emissions per tonne fuel burned. NB Emission factors reflect location and vessel. Use has been made of approved DEFRA/GHG Protocol, OGUUK default figures or an agreed alternative.

From the case study prepared by PlanSea, Vysus Group & SICCAR, published in the recent OEUK Supply Chain Report
<https://plansea.co.uk/a-collaborative-approach-to-logistics-and-emissions-optimisation/>

Digitalisation & Visibility



'Uber'-type Short Term Vessel Sharing



Voyages

Requests

Matches

Discussions

Map

Settings

Region: UK

+ Create Request

50 km
30 mi

Deck Space Available

- 75-100 %
- 50-75 %
- 25-50 %
- 0-25 %

<< < May 2024 > >>

Sun	Mon	Tue	Wed	Thu	Fri	Sat
18	28	29	30	1	2	3 4
19 5	6	7	8	9	10	11
20 12	13	14	15	16	17	18
21 19	20	21	22	23	24	25
22 26	27	28	29	30	31	1
23	2	3	4	5	6	7 8

Today

07 May 08 May 09 May 10 May 11 May 12 May 13 May 14 May 15 May 16 May 17 May 18 May 19 May 20 May 21 May

Leaflet | Map data © OpenStreetMap



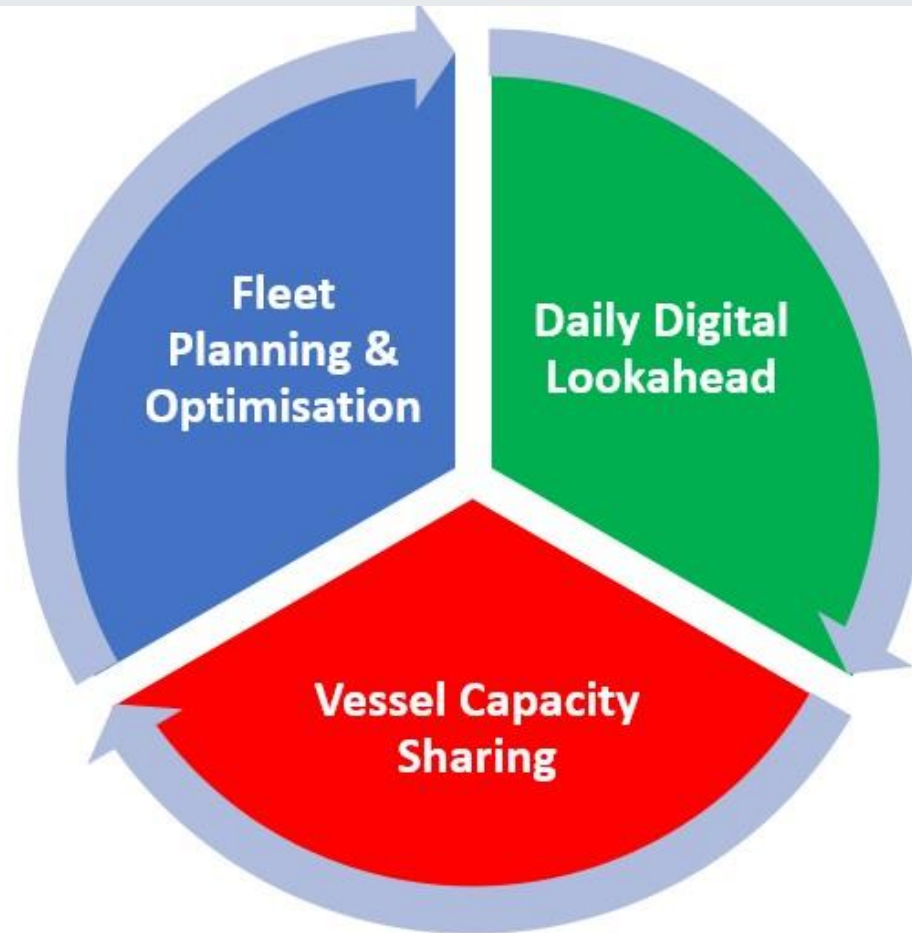
A Vision For The Future Of Marine Logistics

Outsourced Marine Logistics

- Outsourced managed fleets by logistics contractors, owners, brokers, other marine specialists

New Business Models

- Contractor DHL-type marine fleet service
- 'Uber' cargo service
- Gainshare/super-normal profit opportunities



Global Template

- Emissions and cost reductions
- Digital, optimised processes
- Part of 'Control Tower' approach

Autonomous Vessels

- Integrated with optimisation and scheduling
- Fleet management opportunity

Next - AI Applied to Subsea Decommissioning

National Subsea Centre and PlanSea Awarded Decommissioning AI-Demonstrator Grant

Visit National Subsea Centre
on STAND 24 at



The National Subsea Centre (NSC), a centre of excellence for subsea research and technology development, recently announced it has been awarded a grant to develop a subsea decommissioning optimisation software demonstrator with PlanSea, which offers world-leading marine logistics artificial intelligence (AI) technology.

The grant was awarded to the National Subsea Centre and PlanSea by the Scottish Funding Council (SFC) in partnership with Scottish Enterprise (SE) to assist in developing a subsea decommissioning optimisation AI-Demonstrator.

As global operators face the challenges of large-scale and complex subsea decommissioning, there is an identified need for optimisation in this area to secure a cost-effective and resource-efficient outcome whilst contributing to net zero targets by reducing emissions. The UK is expected to spend £21Bn on decommissioning over the next ten years.

The National Subsea Centre and PlanSea have collaborated for many years to utilise AI to optimise marine logistics. Together the two organisations will now deploy the technology and skills developed to address the needs of the subsea decommissioning sector.

The two organisations are developing a robust task-based formalisation of offshore decommissioning activities that will extend the benefits of PlanSea marine-logistics AI in this space. As a result of this, decision-makers would have the ability to simulate with a high degree of accuracy the cause-effect relationship between different strategies and KPIs of interest. The project is set to produce a robust AI tool, fast-tracked for initial trials in Q2/2025.

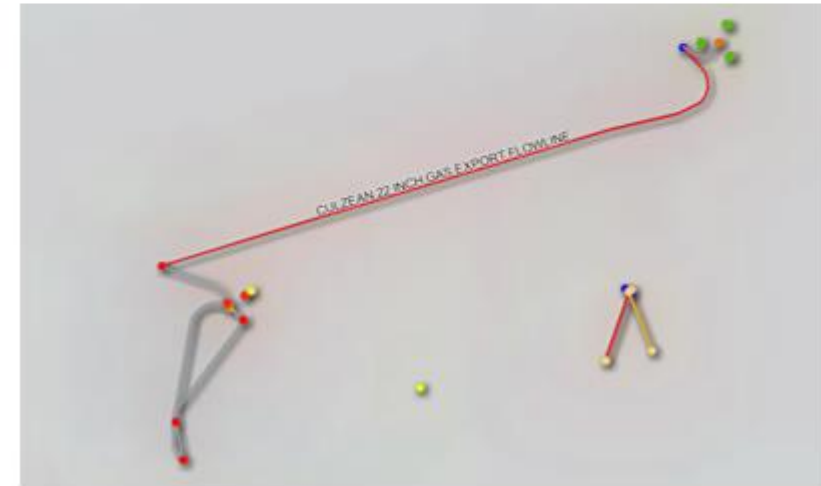
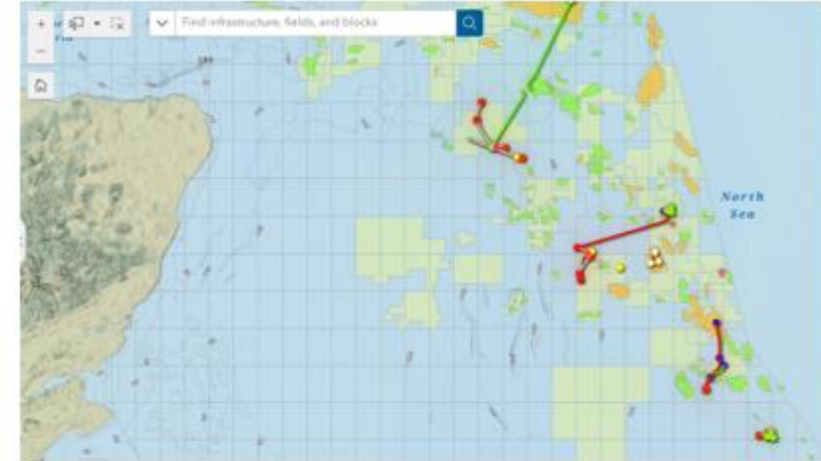
Jim Cargill, CEO of PlanSea said: "The AI demonstrator is aimed at addressing both standalone and collaborative campaign optimisation of current and future decommissioning. Additionally, as in marine logistics, we offer a digitalised process for users whilst at the same time enhancing visibility of operational activity."

Prof. James Njuguna, NSC Director of Research & Innovation, added: "Our centre is uniquely positioned to address the subsea industry's most pressing challenges. Our in-depth knowledge of marine operations offers a great opportunity to collaborate with PlanSea to provide operators with substantial savings and reduce emissions. I am confident that this collaborative project will harness our research expertise and PlanSea's cutting-edge industrial knowledge to deliver a pioneering solution for the energy transition."



Subsea Decommissioning Optimisation

- Complete schedule generated after simulation(s) - standalone and collaborative
- Ability to further evaluate both this and any other plans/proposals/alternatives
- Projected emissions and costs to be output
- Fleet composition can be optimised
- Tooling use can be simulated + 'soft' evaluation of new technology
- Allows for dynamic events – weather, breakdowns, vessel availability windows...
- Prioritisation of tasks
- Resource parameters inbuilt - capacity onboard including dive crew limitations
- Etc.....



PlanSea – Planned Next Steps

- Initial deployment of software with supportive operators - UKCS & overseas
- SaaS delivery & ongoing consultancy service as required
- Build on PlanSea subsea decom optimisation demonstrator – open to sector collaboration



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February 2025