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UK 2021
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EFFICIENCY DAY
FRIDAY 3RD DECEMBER

Three E's of At-Source Waste Management

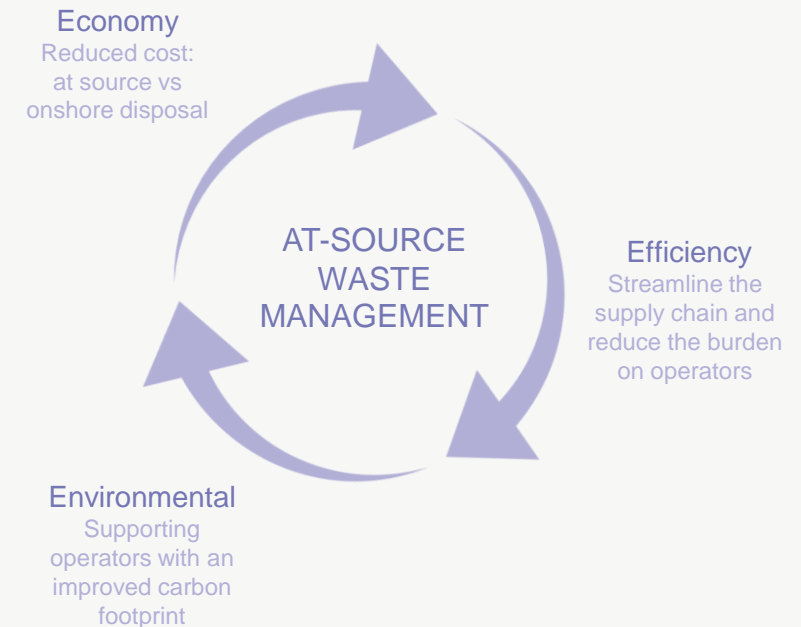
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Mechanical Separation & Fluid Treatment
Production & Decommissioning

Do operators and contractors need to go with the flow when it comes to managing wastewater offshore?

There are signals that dealing with waste fluids at source is growing as a favoured option over the more conventional ship-to-shore practices, whether this be drilling, decommissioning or production related.

This means the principles of economy, efficiency and environmental considerations – the three Es – are going mainstream.



Skip & Ship of hazardous waste material raise questions over cost and efficiency, but a further operational imperative – environmental performance – is now influencing decisions on such activities to an ever greater extent.

- Serving to raise the profile of technologies that confine waste management processes to the site itself.
- Strategic initiatives such as the North Sea Transition Deal between the UK Government and industry, published in March 2021, have further incentivised the deployment of solutions that deliver, in a very practical way, on the sustainability agenda.
- It means the value-adding principles for waste management now have three key reference points – the three Es: economy, efficiency and, ever more prominently, the environment.



Mechanical separation - what do we mean?

- _ At-source solution for separating water, oil and solids (decanter & disc stack centrifuges – 2-phase & 3-phase).
- _ Mechanical separation is already a common feature on many offshore assets as a means of cleaning fuels and oils for operational re-use, delivering efficiency gains for operators.
- _ On-site fluid separation products and services are being deployed specifically to manage waste, reflecting their ability to deal with everything from oily water and slops to completion or bilge fluids.





Three E's of at-source waste management Experience in Mechanical Separation - Case Study



Client

Cleaning Contractor

Location

UK, North Sea

Services

Mechanical Separation,
Decanter, Centrifuges



The Challenge

Providing an alternative, cleaner solution to skip and ship for on board tank cleaning prior to decommissioning with limited deck space and potentially a high volume of fluid.

Our Solution

A fully installed decanter and disk stack centrifuge system with a dedicated onsite team. Treating the waste at source and allowing the flushing process to run continuously sped up the entire process whilst reducing pressure on the deck crew, deck space, crane operations and shipping.

Powerful Results

Approximately **8,000m³** of waste fluids and solids were treated, successfully discharging around **79%** of this at source.

Powerful Benefits

- Reduced environmental risk and carbon footprint
- **79%** of waste liquid discharged at source with oil-in-waters below the legislative discharge consent of **30ppm**
- Delivered **7 days** ahead of schedule
- Reduced shipping, road haulage and disposal costs
- Reduced stress on POB and site resources

“The inclusion of the OSSO equipment and their proactive, experienced personnel aligned with the positive management of our team significantly reduced cost and time required to decant to totes and ship back onshore for disposal, allowing the CoP plan and sail away dates to be met. Notwithstanding the overall volume of waste treated being approximately 50% higher than the original scope, the project was delivered ahead of schedule and under budget.”

General Manager

8,000m³

Approximately **8,000m³** of waste fluids and solids were treated

79%

79% of waste liquid discharged at source with oil-in-waters

30ppm

below the legislative discharge consent of **30ppm**

7 days

Delivered **7 days** ahead of schedule



Execution of cleaning the tanks on the FPSO project, exemplified how at-source solutions have the potential to impact the closely interlinked themes of economy and efficiency.

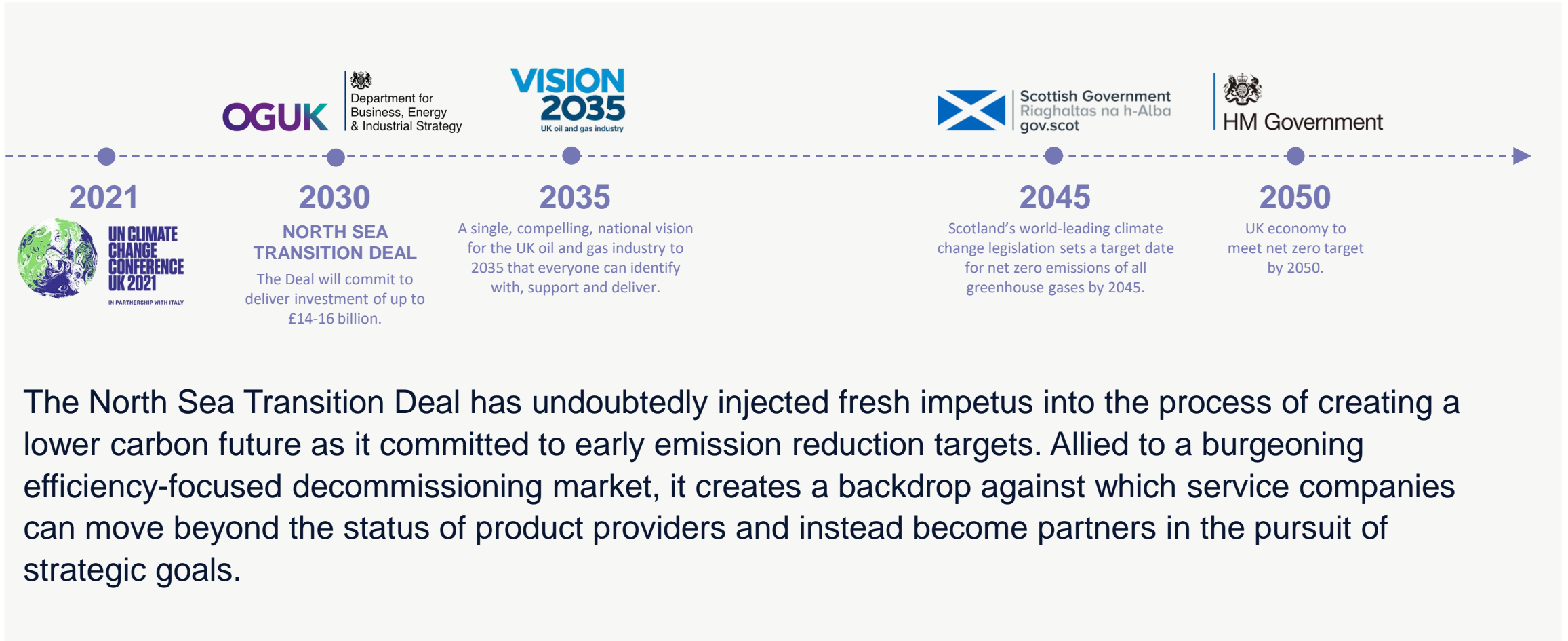
- By our calculations, transporting 8,000m³ of materials ashore for disposal would not only have entailed the use of 2,285 skips with a 3.5m³ volume capability but also required approximately 16 vessel sailings and 950 truck movements onshore. Mechanical separation dramatically reduces such logistical commitments, also easing deck space pressures during operation.
- It further serves to address any personnel on board capacity issues and produces a safety risk mitigation outcome: in this particular case, we estimate that at least 11,000 crane lifts would have been required for the skip option, which would have necessitated the deployment of a full deck crew.

EXAMPLE

Operational requirements	Onshore disposal (~8000m ³)
No. of skips (assuming 3.5m ³ vol)	2285
No. crane lifts per skip (assuming 5 per skip)	11,425
No. of supply vessel trips required (assuming 150 x 3.5 m ³ skips)	~16
No. of truck trips (loadout/backload)	~953

BENEFITS

- Reduce crane lifts / avg. 5 lifts per skip
- Reduce shipping / 150 skips per supply vessel
- Reduce headcount
- Deck space
- Collaborative working partnerships



The North Sea Transition Deal has undoubtedly injected fresh impetus into the process of creating a lower carbon future as it committed to early emission reduction targets. Allied to a burgeoning efficiency-focused decommissioning market, it creates a backdrop against which service companies can move beyond the status of product providers and instead become partners in the pursuit of strategic goals.

Treating fluid waste streams at source is just one of a myriad of ways we can collectively work to minimise the environmental impact of offshore activity, while still pursuing commercial objectives; the three Es neatly summarise the extent to which it can make a tangible contribution.

Economy
Reduced cost:
at source vs
onshore disposal

AT-SOURCE
WASTE
MANAGEMENT

Efficiency
Streamline the
supply chain and
reduce the burden
on operators

Environmental
Supporting
operators with an
improved carbon
footprint



Osso is a global provider of fluid purification and heat transfer solutions focused on improving the impact projects have on the surrounding environment.

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