

# BJSA D&R

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#### Shell's net carbon intensity

Also, in this content we may refer to Shell's "net carbon intensity" (NCI), which includes Shell's carbon emissions from the production of our energy products, our suppliers' carbon emissions in supplying energy for that production and our customers' carbon emissions associated with their use of the energy products we sell. Shell's NCI also includes the emissions associated with the production and use of energy products produced by others which Shell purchases for resale. Shell only controls its own emissions. The use of the terms Shell's "net carbon intensity" or NCI is for convenience only and not intended to suggest these emissions are those of Shell plc or its subsidiaries.

#### Shell's net-zero emissions target

Shell's operating plan and outlook are forecasted for a three-year period and ten-year period, respectively, and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next three and ten years. Accordingly, the outlook reflects our Scope 2 and NCI targets over the next ten years. However, Shell's operating plan and outlooks cannot reflect our 2050 net-zero emissions target, as this target is outside our planning period. Such future operating plans and outlooks could include changes to our portfolio, efficiency improvements and the use of carbon capture and storage and carbon credits. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans and outlooks to reflect this movement. However, if society is not net zero in 2050, as of today, there would be significant risk that Shell may not meet this target.

#### Forward-Looking non-GAAP measures

This content may contain certain forward-looking non-GAAP measures such as adjusted earnings and divestments. We are unable to provide a reconciliation of these forward-looking non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile those non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of Shell, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc's consolidated financial statements.

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**Green Ship Recycling** is an **environmentally responsible process** that ensures end-of-life ships are dismantled safely while maximizing resource recovery. It minimizes waste, prevents pollution, and supports a sustainable maritime industry.

#### **GREEN DECOMMISSIONING**

The process of shutting something down, taking it apart, and disposing of its elements in a safe and environmentally friendly way.

**Minimizing Environmental Impact**: Sustainable decommissioning solutions aim to minimize the environmental impact, including complex operations such as well plugging, subsea infrastructure removal, and hull and topside dismantling.



## BJSA D&R challenges and learnings



### **Waste Management: Disposal of Removed Lines**

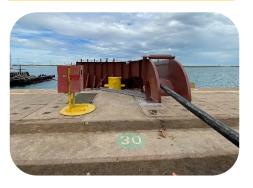
1) Offshore





















Risers and umbilical
98,1 %\* Recycling Achieved

Mooring lines/chains
100 % Recycling Achieved

<sup>\*</sup> NORM detected in 1 riser. (Treated and disposed following plan)

### **Learnings: Environmental Management in Decommissioning**

- Environmental history of the asset and decommissioning:
  - Ensure environmental data and surveys are properly stored during the life of assets.
  - Execute environmental surveys, assessments from the early phases of decommissioning project.
- Stakeholder engagement
  - Conduct early engagements with environmental regulatory bodies.
- Contracting strategy
  - Ensure environmental requirements are covered.
  - Ensure integration between technical disciplines and environmental team (contractors/subcontractors).

# Subsea Flushing - Operation

• BJSA Flushing Operation was designed to be performed in two phases:

Initial Flushing



- Initial flushing cycles used offspec water
- Fresh sea water was introduced and 15ppm oil was quickly achieved

Second Flushing



Clean Water after Initial Flushing

Possible oil release from flexible carcass

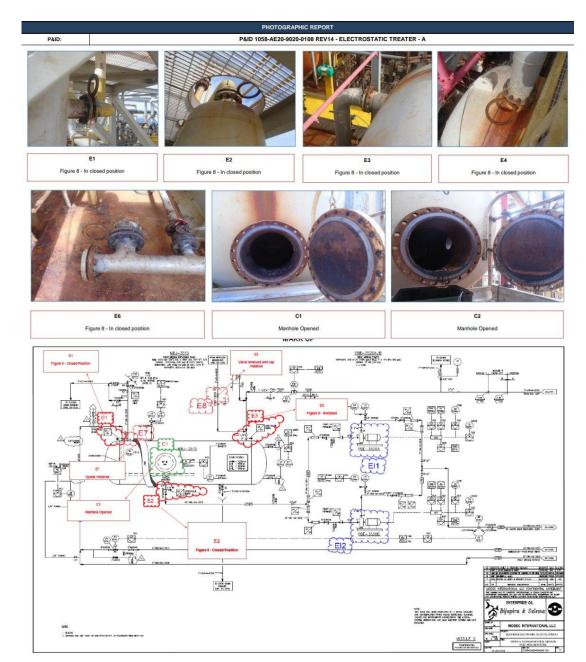
Clean water after Second Flushing

- Free oil was collected during this operation
- Umbilical chemical lines flushed
- Final fresh seawater circulation sampled for 15ppm oil in water

## **Decommissioning / Cleaning - topside systems**

### Isolation, cleaning, and decommissioning of topside systems

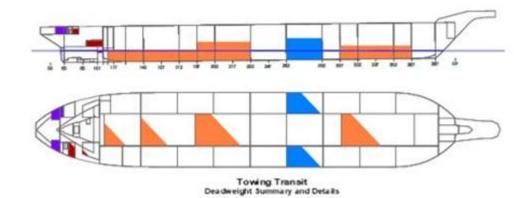
- Detailed P&ID Review
- Management of Change (MOC)
- Scope Detailing
- Offshore Execution
- Handover Databook
- Maintenance scopes reassessment



### **Tanks Repair / Cleaning**

- Life Extension until December 2024
  - Structural areas identified to repair
- Engineering studies based on loading conditions limitation (shear force and bending moment)
  - Scenarios: in location and during tow
  - Risk-Based Approach (RBA)
  - Total Strength Analysis (TSA)
  - Spectral Fatigue Analysis (SFA)
    - → Almost 400t of steel saved crop and renew (over 90%)
- Scope Execution
  - 37 tanks inspected
  - 22 tanks repaired
  - 9 COT cleaned 1700 drums of sludge
  - Average POB: 30 for 28 months

#### Towing Transit Condition Summary



A.1.1 Tank 05P Void

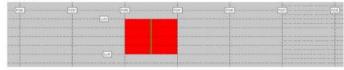


Figure A.1 - Failures Plot - Longitudinal Bulkhead

Note: Plate panels exceeding criteria are highlighted red. The green curves depict the required panel breaker to be installed.

Stiffeners scantling	No. of pieces	Weight (mT)
FB150x15 Mild	4	0.06

**Engineering Studies** 



**Tanks inspection** 

