

Allocation & Gas Management

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ST Fergus Terminals



SAGE Scottish Area Gas Evacuation - Owners

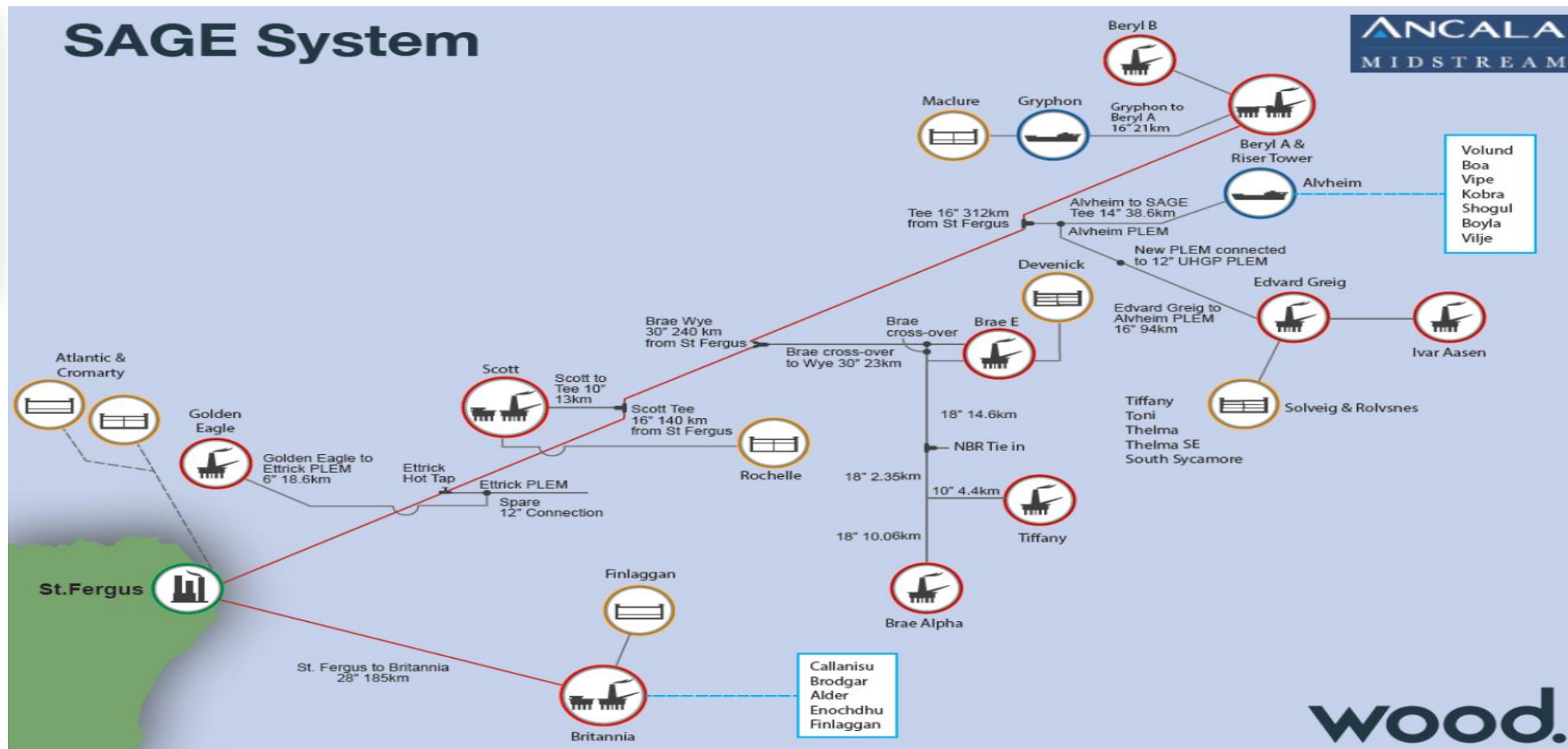
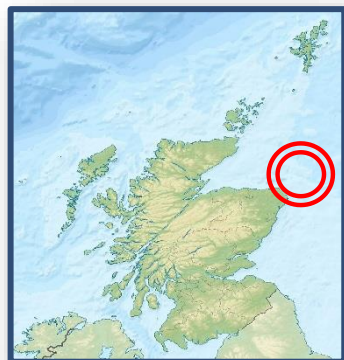
Brae Group

NEO	5.2500%
Spirit Energy Resources Limited	6.6667%
TAQA Bratani Limited	34.7500%
TAQA Bratani LNS Limited	3.3333%

Beryl Group

Harbour Limited	19.722225%
SAGE North Sea Limited	30.277775%

The SAGE system has multiple entrants exporting gas for delivery of Sales Gas and NGL at the terminal



Wet gas design capacities:	
SAGE Pipeline	1150 mmscfd
Britannia Pipeline	840 mmscfd

SAGE Gas Throughput 2023



Million Cubic Metres
of wet gas through
SAGE Terminal



Million Cubic Metres
of sales gas



Barrels of NGLs



12.5% of UK's gas production
7.0% of UK's gas demand



Enough for
4.2 Million homes

The SAGE system has multiple entrants exporting gas for delivery of Sales Gas and NGL at the terminal

- Two active pipelines:
 - SAGE Pipeline (PL 778)
 - Britannia Pipeline (PL 1270)
- 30" SAGE Pipeline transports gas from multiple fields to St Fergus – 325km long from Beryl A
- Wide catchment area extending from Central North Sea into Northern North Sea and Norwegian Continental Shelf
- 28" Britannia Pipeline is 185km long
- Located at St Fergus, North-East Scotland
- SAGE is 1 of 4 terminals in the St Fergus complex which together supplies up to 35% of the UK's gas production
- Upper Tier COMAH site
- Critical National Infrastructure (CNI) site
- 1st gas was achieved 7th August 1992
- Average of 95 Personnel On Site (POS)
- Gas is received, treated and processed on behalf of the shippers:
 - Gas and liquids are separated
 - Calorific value controlled
 - Gas treated to remove H₂S and CO₂
 - Gas is delivered to National Grid and then transported to the UK domestic gas network
 - NGLs are delivered to SEGAL and FPS

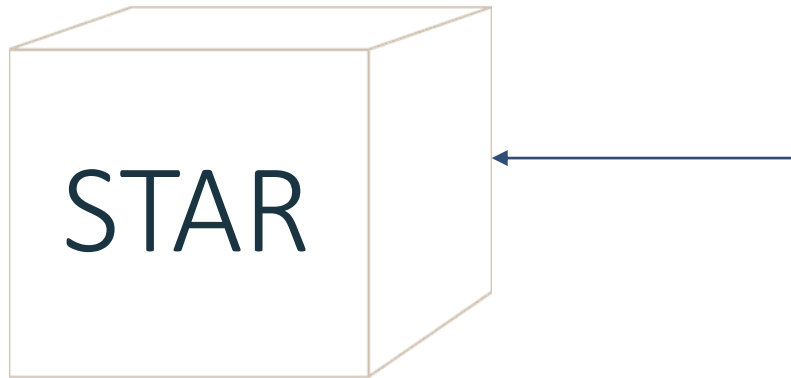
2021

SMART (SAGE Measurement and Allocation Reporting tool)

Replaced by

STAR (SAGE Terminal Allocation and Reporting)

Could we use STAR to perform commercial admin tasks not normally associated with an Allocation system?



- Mismeasurement database
- Tariff calculations and Invoicing
- Tariff rate updates
- Dispensations and Deviations
- Annual Statements
- Emissions verification and allocation
- Platform notices

Any mismeasurement in the SAGE system needs to be recorded, reported, authorized and independently audited

Legacy system

- Separate system from the Allocation system
- Access database
- Reliant of VBA and SQL coding
- Required Citrix software
- Manually intensive process
- Auditor required to attend office to gain access to system
- Required separate resource for back up documents
- Mismeasurement report was a paper document

STAR

- STAR configured to automatically record changes to Allocation data and mismeasurement process initiated
- STAR assigns a mismeasurement number, creates a report and issues emails to Supervisor and Independent Auditor
- Any backup data can be saved directly into STAR
- Mismeasurement processes controlled in STAR screens
- Independent Auditor has access to STAR remotely
- Paperless system

Shippers invoiced monthly in accordance with their TPAs (Transportation Agreements)

Legacy process

- Invoices calculated on separate spreadsheets
- Mix of provisional and final data
- Allocation data copied and pasted into spreadsheets
- Spreadsheets converted into PDFs and send manually
- Spreadsheet required to be retained for Audit purposes
- Any adjustments to invoices created a large amount of manual intervention

STAR

- TPA T&C's added to STAR configuration (pricing, excess, SOP etc.)
- Invoices automatically triggered as relevant allocation data becomes available
- Invoices sent directly from STAR to Shippers
- All data saved and stored in the Cloud
- Revenue now calculated daily and available on PBI dashboard
- Adjustments automatically picked up and applied by the system
- System to system invoicing available
- Errors detected and eliminated from legacy spreadsheets
- All spreadsheets eliminated

A dispensation is required when a temporary defect occurs on any piece of measurement equipment, that will result in an Entry Point Metering System being unable to achieve the required uncertainty and / or the operation of the equipment does not align with the requirements and/or standards

Legacy process

- Requests for dispensations not on a fixed format
- Approval process not properly defined
- Approvals not processed in a timely manner
- Extensions and closures not properly recorded
- Database was in an excel spreadsheet – lacked visibility
- Lack of uptake from Shippers

STAR

- Fixed format for dispensation requests (excel spreadsheet)
- Dispensation requests sent directly to STAR
- Approval process controlled by STAR
- Documents sent directly from STAR
- Extensions and closures controlled by requester
- Dispensation database available in PBI dashboard
- Excellent update from Shippers

The Terminal Representative is required to generate an annual statement containing operational data for the forthcoming gas year

Legacy Process

- No fixed format for submitting required data
- Poor compliance in providing required data
- No fixed format for annual statements
- Spreadsheet used to collate and interrogate data
- Statements sent as excel files converted to PDF

STAR

- Fixed format for providing data
- Request for information automatically sent by STAR to shippers
- STAR monitors responses and provides updates
- Once all information is received, STAR validates data and issues statements
- STAR is set up to automatically add new entrants to process
- 100% automated

Annual emission from the Terminal are reported to SEPA (Scottish Environmental Protecting Agency)

Legacy Process

- Complex spreadsheet linked to Pi
- Contained circular references
- Run on an annual basis
- Pi data did not include mismeasurements
- Difficult format for Auditor

STAR

- Emissions data loaded daily with allocation data
- Data includes any mismeasurements
- Emissions calculated daily
- Audit log format agreed with the Auditor
- Emissions allocation to Owners and Shippers now possible

During any planned or unplanned outage at the SAGE terminal or downstream from SAGE it may be required to curtail platform exports

Legacy Process

- Procedure not properly defined
- Instructions given over the phone
- Poor recording and lack of evidence
- Hard to track performance and metrics

STAR

- Simple process added to STAR
- Notifications sent from STAR in fixed format
- Updates simple to enter and send
- STAR records all curtailments, duration and documentation
- Easy to monitor performance, KPIs

By selecting the correct Allocation system non-Allocation related functions can be added to the system streamlining commercial operation processes

Costs and time saved with better performance and data handling