Infrastructure Code of Practice

The non-statutory Code of Practice on Access to Upstream Oil and Gas Infrastructure on the UK Continental Shelf (also known as the “Infrastructure Code of Practice”) was developed by Oil & Gas UK in consultation with a wide range of parties including the relevant regulator – currently the Oil and Gas Authority (OGA) but previously Government Departments DTI, BERR and DECC.

It became effective in August 2004 and superseded the earlier Offshore Infrastructure Code of Practice dating from 1996. It was revised in 2012 and 2017 to reflect changes to legislation and to make general improvements.

Third Party Access to Operated Infrastructure

The Infrastructure Code of Practice sets out principles and procedures to guide all those involved in negotiating third-party access to oil and gas infrastructure on the UK Continental Shelf (UKCS).

The Infrastructure Code

Its purpose is to facilitate the utilisation of infrastructure for the development of remaining UKCS reserves through timely agreements for access on fair and reasonable terms, where risks taken are reflected by rewards.

Principles of the Infrastructure Code

Overarching Principles:

- Parties uphold infrastructure safety and integrity and protect the environment
- Parties follow the Commercial Code of Practice

Specific Principles:

- Parties provide meaningful information to each other prior to and during commercial negotiations
- Parties support negotiated access in a timely manner
- Parties undertake to ultimately settle disputes with an automatic referral to the Secretary of State
- Parties resolve conflicts of interest
- Infrastructure owners provide transparent and non-discriminatory access
- Infrastructure owners provide tariffs and terms for unbundled services, where requested and practicable
- Parties seek to agree fair and reasonable tariffs and terms, where risks taken are reflected by rewards
- Parties publish key, agreed commercial provisions

Provision of Information

Each participant is required to make relevant data available to enable prospective users to obtain an informed view of infrastructure options in their areas of interest. In particular, prospective users should have ready access to current operational and ullage data sufficient to enable the prospective user to undertake basic economic screening of alternative offtake options.

UK Continental Shelf Oil and Gas Industry License-Holder Commercial Code of Practice

Mission

- Promote co-operative value generation

Best Practice Process

- Establish and agree a timetable to completion
- Adopt flexible methods and fit-for-purpose solutions
- Maximise the use of standard form agreements
- Comply with codes of conduct
- Conduct post-activity audit and analysis

Senior Management Commitment

- Front-end involvement and continuous monitoring of progress
- Ensure appropriate resources are available
- Empower staff consistent with value of the project
- Ensure appropriate use of tactics
- Adopt a non-blocking approach

- **Please note these capacities are subject to change. Any application would be subject to a detailed process of investigation and discussion to ensure operability. Infrastructure owners would be prepared to investigate the potential on the basis that enquirer fund the necessary resource, engineering studies and any subsequent modifications to the infrastructure.**

Annex E Data

Alba

Capacity Information for Alba Northern Platform Installation

5 year Oil Ullage

2018	2019	2020	2021	2022	Key
					< 5 %
					5 – 25%
					> 25%

Alba has significant additional capacity for additional oil; however, investment would be required in additional sand washing and produced water processing capacity.

5 year Gas Ullage

2018	2019	2020	2021	2022	Key
					< 5 %
					5 – 25%
					> 25%

Entry specification

Minimum conditions for entry are 20 barg, 10C. Composition and water cut specification must be determined on a case by case basis but Alba facilities are designed to treat heavy crude with low H_2S/CO_2 content.

Exit specification

Liquids – Any liquids processed on the Alba facilities will be commingled with Alba crude and exported by tanker to downstream refiners. The impact on combined crude specification and marketability must be addressed on a case by case basis.

Gas – Any gas processed on the Alba facilities will be used as fuel gas. Excess gas can be exported to Britannia but would be required to meet contract specification. Limited H_2S scavenger treatment can be provided on the Alba topside. The primary specification for export gas is <8 ppm H_2S but a full assessment would be required on a case by case basis to configure gas conditioning equipment on Alba to be able to achieve this specification.

Outline details of primary specification processing facilities

Alba consists of three parallel primary separation trains, with a common degasser and coalescer unit. This achieves crude of around 1% BSW that is exported to the FSU for storage until offloading. Process simplification completed in 2010 has resulted in the mothballing of two degasser coalescer trains and the heating medium system.

Produced water from the main separators has three stages of treatment before disposal to sea. Initial treatment is achieved through hydrocyclone packages (one per separator). The polishing vessel and compact flotation units provide final clean up before disposal to sea. Additional water handling capability would be required if large quantities of produced water are to be processed. A produced water reinjection trial was completed on the Alba field which demonstrated its feasibility.

Alba operates full voidage replacement with seawater injection.

Outline details of gas treatment facilities

Gas separated from the main production separators is treated to remove liquids prior to compression in two parallel compressors. Fuel gas is taken from this point and supplies the John Brown and Solar turbine. Excess gas can be exported to the Britannia platform. To meet Britannia's specification, export gas would be injected with H_2S scavenger and would require a dehydration module to be reinstated.

Gas from the degassers is flared.

System Capacities

System	Units	Capacity	Current Ullage
Oil	Bpd	42,000	50%
Gas Export	MMscfd	15	100%
Gas Compression	MMscfd	2X22	68%
Water Injection	Bpd	400,000	22%
Produced Water	Bpd	350,000	28%
Power Generation	MW	42	50%
Gas Lift	MMscfd	Nil	N/A

Annex E Data

Captain

Capacity Information for Captain facilities.

5 year Oil Ullage

2018	2019	2020	2021	2022	Key
					< 5 %
					5 – 25%
					> 25%

Captain oil ullage is constrained by produced water handling and injection capacity.

5 year Gas Ullage

2018	2019	2020	2021	2022	Key
					< 5 %
					5 – 25%
					> 25%

Entry specification

Minimum conditions for entry are 20 barg, 5C. Composition and water cut specification must be determined on a case by case basis but the Captain facilities are designed to treat heavy crude with low H_2S/CO_2 content.

Exit specification

Liquids – Any liquids processed on the Captain facilities will be commingled with Captain crude and exported by tanker to downstream refiners. The impact of commingling on the crude specification and marketability must be assessed on a case by case basis.

Gas – Any gas processed on the Captain facilities will initially be exported to the Frigg pipeline and will be required to meet the existing contract specification. The primary specification is <3ppm H_2S but a full assessment will be required on a case by case basis. Processed gas must also be suitable for use in the Captain power turbines and fired gas heaters.

Gas export will cease later in field life and this may allow a relaxation of the specification, however, gas must remain suitable for use in the Captain power turbines and fired gas heaters.

Outline details of primary specification processing facilities

The Captain installation comprises 3 facilities. A Wellhead Protector Platform (WPP) is connected to a Bridge Linked Platform (BLP) which supports primary separation, gas export and produced water handling facilities. Secondary separation to achieve export specification is conducted on the Floating Production Storage and Offloading (FPSO) facility that is linked to the BLP/WPP complex by subsea pipelines and a power distribution cable. All available well slots are used for production or injection services.

Subsea fluids are tied back to the BLP via two production risers and one test riser. Risers are also installed on the BLP for gas export, subsea services and polymer import from the WPP. There are no pre-installed spare risers.

Primary separation on the Captain facilities is achieved in two parallel free water knock out drums located on the BLP. Oil at approximately 60% BS&W is exported to the FPSO where this is further processed in two stages of separation and a coalescer to meet export specification. The oil is heated prior to the final stage of separation to break emulsions and achieve vapour pressure specification. Stabilised crude is cooled and stored in the FPSO prior to offloading.

Gas from the BLP separators is treated (see below) and used for fuel gas or export. A small amount of gas is spiked in the export crude stream to supplement FPSO fuel gas. Gas separated on the FPSO is used primarily for fuel gas in fired heaters.

Produced water from the BLP separators is routed to the water collection vessel which also receives water returned from the FPSO. This vessel feeds the water injection and power water systems. The main water injection pumps are 2*50% units. Power water is required to drive Hydraulic Submersible Pumps (HSPs) in subsea wells and is provided by a separate pumping system.

There is no discharge of produced water on Captain. There are no seawater injection facilities on Captain.

Outline details of gas treatment facilities

Gas leaving the BLP separators is treated to break foam and remove liquids prior to compression in two parallel export compressors. The gas is then dehydrated in a Triethylene Glycol (TEG) contactor and supplied as fuel gas for the platform's Solar generators via a gas let-down skid. Excess gas is exported to the Frigg system via pipeline. H_2S scavenger is injected to achieve export specification. A fuel gas compressor is available to supply fuel gas from upstream of export compression should the export compressors be unavailable.

Gas leaving each of the separators on the FPSO is treated to remove liquids and commingled before being used as fuel in fired heaters which provide heat to the oil process train.

Minimal liquids are produced by any of the gas processing systems on the Captain facilities.

Captain will become fuel gas deficient in the medium term and will import make-up gas from the Frigg pipeline via the gas let-down skid.

System Capacities

System	Units	Capacity	Current Ullage
Oil	Bpd	79,000	0% (1)
Gas Export	MMscfd	17	80% (2)
Fuel Gas	MMscfd	8.5	
Water Injection	Bpd	350,000	0%
Power Water	Bpd	128,000	0%
Power Generation	MW	40	10%
Gas Lift	MMscfd	Nil	N/A

1. Oil ullage constrained by produced water handling and injection capacity.
2. Fuel gas and export systems interlinked via gas let-down skid. Ullage relates to combined capacity.

Annex E Data

Erskine

Capacity Information for Erskine Installation

5 year Oil Ullage

2018	2019	2020	2021	2022	Key
					< 5 %
					5 – 25%
					> 25%

5 year Gas Ullage

2018	2019	2020	2021	2022	Key
					< 5 %
					5 – 25%
					> 25%

Entry specification

The entry specification to the Erskine normally unmanned installation (NUI) would be wholly dependent upon the entry specification of the Erskine Process Module (EPM) located on the Lomond platform since there are no processing facilities on the Erskine platform. The EPM is operated by the Lomond Operator.

Exit specification

Since the Erskine platform does not have any processing facilities, the exiting process conditions are currently multiphase through a 16 inch export pipeline to the EPM located on the Lomond platform. Again the exit specifications would be dependent upon the entry requirements of the EPM controlled by the Lomond operator.

Outline details of primary specification processing facilities

There are no processing facilities on Erskine

Outline details of gas treatment facilities

There are no gas treatment facilities on Erskine

Oil export capacity

Oil export capacity is dependent upon the import capacity of the EPM located and controlled by the Lomond operator. The multiphase product is piped to the EPM through the 16 inch pipeline by means of controlled flowing well head pressure. No pumping facilities exist.

Gas compression capacity

There are no gas compression facilities on Erskine. All gas compression is carried out on the EPM controlled by the Lomond operator

Gas lift capacity

There are no gas lift facilities on Erskine

Produced water handling capacity

There is no produced water handling facilities on Erskine. All produced water is piped to the EPM in the multiphase pipeline to be processed by the Lomond operator.

H_2S removal capacity

There are no H_2S removal facilities on Erskine.

Water injection capacity

There are no water injection facilities on the Erskine platform.