ALWYN / DUNBAR

DESCRIPTION

TotalEnergies E&P UK Limited owns 100% equity of their Northern North Sea hub centred on the Alwyn Area which consists of the Alwyn North platforms (NAA and NAB linked by a bridge), the Dunbar platform and a series of subsea fields tied back to these installations.

The main processing facilities for the integrated production complex are located on the Alwyn NAB platform. There are only limited processing facilities on the Dunbar Platform, which include a production separator and multiphase pumps. Dunbar production is transferred to Alwyn NAB for processing.

Under the current expectations of long-term oil and gas prices and indications given by investors, the infrastructure is expected to be operational until the late 2020s.

Provisions for Third Party Access

Alwyn North may facilitate some 3rd party production. The Dunbar simplified process, including the multiphase export line to Alwyn North, is expected to remain at its capacity for the medium term. Therefore, utilisation of the existing infrastructure by Northern North Sea fields limits the provision for third party access due to capacity, weight and space constraints.

SERVICES WE PROVIDE

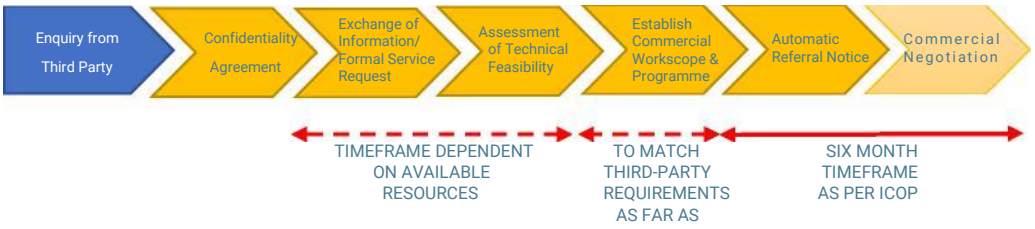
We offer the following service levels to third-party tie-ins:

- Make available capacity to Tie-in parties;
- Accept hydrocarbons that comply with delivery specifications;
- Process hydrocarbons to required criteria;
- Meter / measure / allocate hydrocarbons to specified standards;
- Deliver dry gas into the FUKA system;
- Deliver stabilised crude to the Ninian Pipeline System via the Ninian Central Platform
- Operate / monitor fields on behalf of Tie-in parties;
- Provide technical input as required;
- Provide other 'routine' services;
- Provide other 'non-routine' services on an OPEX-plus basis.

To date, no third party arrangements have been entered into for use of the Alwyn Area platform facilities. Nevertheless, any approach would be treated on a case-by-case basis when determining the appropriate commercial terms, taking into account issues such as the required level of capital expenditure, product specification, capacity requirements, etc.

HOW WE WORK

Alwyn/Dunbar is committed to the **Commercial Code of Practice** and the **Oil and Gas UK Infrastructure Code of Practice.** We aim to respond in a timely manner to all service enquiries. The typical process for negotiations is as follows:



The process typically starts with a formal written enquiry from the Operator (or substitute commercial operator) of the field development group requiring access to the infrastructure containing relevant field information and an outline of requirements in accordance with the process described in the **Code of Practice on Access to Upstream Oil and Gas Infrastructure on the UK Continental Shelf**.

STANDARD TERMS AND CONDITIONS

Any offer will vary due to the nature of services required. Typically these may include, but are not limited to:

- Hydrocarbon quality (specific processing requirements and/or impact on product value);
- Opportunity cost (where backing out of equity hydrocarbons is required to provide ullage or to compensate where capacity has been sterilised);
- Modification cost (where additional capital expenditure is required to process the hydrocarbons).

Bookings & Send or Pay

In order to provide a firm service, a capacity booking is required. Typically the Tie-in party will have provided a life of field profile for inclusion in the commercial agreement. For each hydrocarbon contract year (commences 1st October), the Tie-in party will then confirm their capacity requirement 12 months in advance. There may be some flexibility to modify the life of field profile within this process.

Such bookings have balancing terms for:

- Tie-in party Send or Pay obligation (or "minimum bill");
- TotalEnergies obligation to redeliver hydrocarbons properly tendered.

These terms are normally negotiated at the same time so as to arrive at an equitable position for both parties.

Force Majeure relief from Send or Pay generally applies to both parties.

Allocation, Attribution & Measurement

The allocation process models inputs and outputs on a mass component basis to provide a physical allocation of products (gas and liquid) and discharges to each field.

Due to the impracticability of each field exactly matching its hydrocarbon production to dry gas and / or stabilised crude oil quantities, a system of operational substitution applies. The difference between gas and stabilised crude oil quantities delivered and quantities produced (allocated) is termed substitution. The Tie-in party concerned must supply such metering and analysis data so that that party's field can be allocated its share of gas and liquid products as accurately as possible. If a third party's quantities can only be determined via subsea completion data, then appropriate procedures will require to be discussed with the Operator.

During periods of restriction, production from Alwyn Area fields (i.e. TotalEnergies equity production) will have priority and priority for any third party fields will be based on a last-in, first-out principle.

The TotalEnergies flow measurement standard is applied to all inputs and outputs. Orifice plate systems are generally specified, but ultrasonic (or other) meters will be considered where it can be demonstrated that an equivalent performance can be achieved.

Additional quality measurements required may include composition from on-line gas chromatograph, water measurement and H2S measurement.

Tariffs and Operating Costs

Any offer may be on the basis of a tariff, an operating cost share mechanism, or a combination of the two. Operating expenditure (OPEX) is normally charged based on a pro-rata throughput share of the plant OPEX. This varies over time as a function of total throughput.

A tariff may be applied to reflect an appropriate risk-reward balance for the services to be provided. This will be dependent upon the level of service, hydrocarbon quality, opportunity costs and modification requirements amongst others.

Tariffs are typically indexed annually, based on a standard index published by the UK Office for National Statistics.

Tie-ins & Additional Equipment

The third party will be expected to pay for costs associated with the design, procurement and execution of the tie-in. An appropriate liabilities and indemnities regime will also be required in which the third party will indemnify TotalEnergies for all losses (except in the event of wilful misconduct by TotalEnergies).

Where equipment is exclusive to a particular user, then OPEX for such equipment will be at their sole cost.

TotalEnergies would normally perform engineering and modifications work for such equipment on behalf of new users. Ownership of the offshore tie-in or additional equipment would be transferred to TotalEnergies E&P UK Limited on completion of the works.

Shutdowns and Maintenance

During planned shutdown and modification periods the platform may require withdrawal of partial or full services.

TotalEnergies makes every effort to reduce such periods and to liaise with downstream parties and field operators to co-ordinate timing of the shutdowns.

Standard maintenance periods are up to 14 days during a 2 year rolling period during the summer months, with a period for modifications of up to 28 days subject to 12 months' notice.

Maintenance periods qualify for relief against any "send or pay" liabilities

Liability Regime

The general liabilities typically applied are:

Tie-in and Construction

- Liability regime during completion of tie-in work will require the tie-in party to fully indemnify TotalEnergies E&P UK (except in the event of wilful misconduct by TotalEnergies E&P UK Limited).

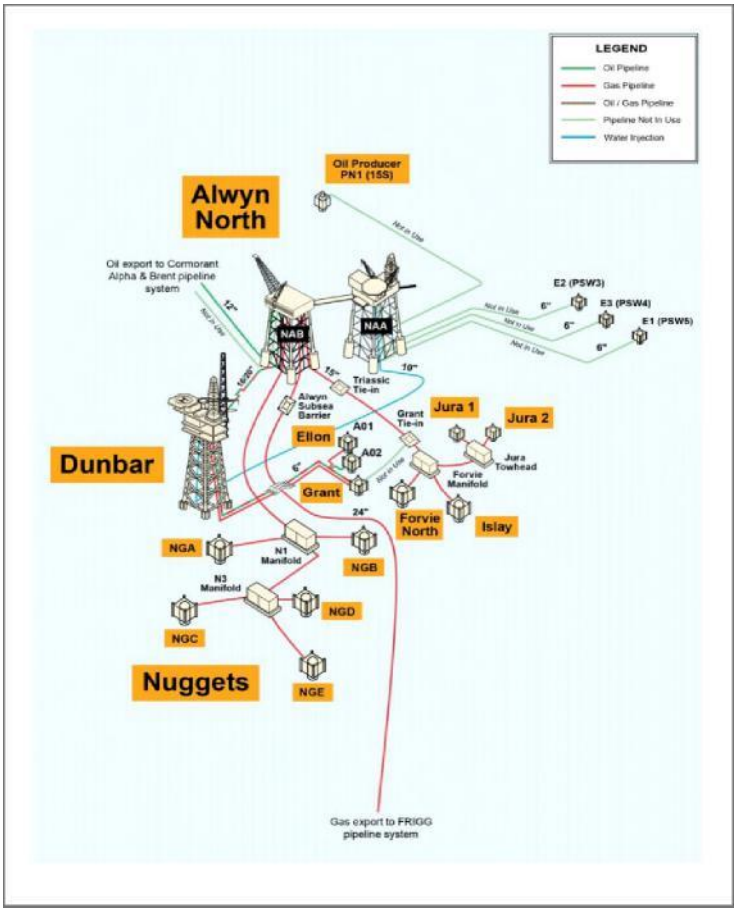
Operating Services

- No claims against the other party in respect of property loss or consequential loss relating to performance under an agreement with the exception of wilful misconduct (up to a cap).
- Each party indemnifies and holds harmless the other party in respect of injury or death of employees in connection with any agreement.

These example standard Terms and Conditions may vary and shall not constitute an offer or a legally binding arrangement between TotalEnergies and the enquirer nor obligate either party in any manner. Any discussions upon such Terms and Conditions shall be on a 'subject-to-contract' basis unless and until a legally binding agreement is executed.

TECHNICAL SPECIFICATIONS

Basic Infrastructure



The Alwyn Area consists of the Alwyn North platforms, the Dunbar platform and a series of subsea fields tied back to these installations.

Alwyn North consists of two platforms, North Alwyn A (NAA) and North Alwyn B (NAB), which are joined by a bridge. NAA contains the drilling and accommodation facilities, while NAB contains processing facilities for both Alwyn and Dunbar.

After processing, gas is exported into the Frigg UK Association pipeline (FUKA) and onwards to the St Fergus terminal. Oil is exported into the Ninian Pipeline System via the Ninian Central Platform and onwards to the Sullom Voe Oil Terminal.

Processing Facilities

Alwyn has processing facilities for oil, gas and water separation together with facilities for gas and water injection and power generation.. These are able to accept third party business. Depending on third party effluent characteristics and production flowrate, tie-in locations could be studied on Alwyn, Dunbar or their associated subsea networks in order to process and export those effluents.

There are limited processing facilities on the Dunbar Platform. There is a production separator for Ellon and Grant fluids but all other production is pumped directly via multiphase pumps to the Alwyn North Platform for processing prior to export. Any future 3rd party tie-ins at Dunbar would require significant brownfield work.

In order for either the Alwyn or Dunbar platforms to process third party fluids, an acceptable specification would have to be developed following a detailed analysis of fluid composition in relation to processing capabilities.

Inlet hydrocarbon quality ranges will be considered on a case by case basis, in order that Alwyn platform facilities' processing capabilities can be assessed with regard to redelivery of gas and stabilised crude.

Fluid Facilities

Standard Platform Terms

Any party interested in using the existing plant should take the following basic parameters into account:

- Alwyn platform has a limited capability to handle H2S;
- Alwyn platform has no specific CO2 handling equipment and is constrained by the gas export CO2 specification;
- Low pressure system operating at 20-25 barg;
- High pressure system operating at 45 barg;
- Low, low pressure operating system (with minimal capacity) at 11 barg.

For non-processed transportation over the Alwyn Area platforms, the product stream must meet the oil and gas export specifications highlighted below.

Oil Export Specification

For oil export to Sullom Voe Oil Terminal via the Brent System, the True Vapour Pressure (TVP) should not exceed 115 psia at 100°F and the bottom sediment and water content should not exceed 5% by volume.

Gas Export Specification

For gas export to the St Fergus Gas Terminal, the following specification applies:

H2S	3.0 ppm Vol (maximum)
Total Sulphur	15.0 ppm Vol (maximum) expressed as H2S
Mercaptans	Undetectable as measured in accordance with IP 272/71
CO2	3.8% mol (maximum)
O2	7.5ppm Vol (maximum)
H2O	24 kg/MSCM (maximum)

ULLAGE PROFILES

Plant Capacities

Facilities Description	Capacity	2021	2022	2023	2024	2025	2026	2027	2028	2029
Oil export	80,000 bbl/d	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Gas Compression	17x106sm3/d	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Gas Export *	17x106sm3/d	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Gas Lift	0.8x106sm3/d	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Produced Water Handling	40,000 bbl/d	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Dehydration	17x106sm3/d	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
H2S Removal	Nil	🔴	🔴	🔴	🔴	🔴	🔴	🔴	🔴	🔴
Water Injection	60,000 bbl/d	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Power Generation	62MW	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢

Ullage as % of system capacity	
< 5 %	🔴
5% to 25%	🟡
>25%	🟢

CURRENT MAJOR PROJECT ACTIVITIES

Main Ongoing Projects are:

- Alwyn and Dunbar Well Programmes: development wells; interventions; reperforations & activation.
- Topside modifications
  - Well hook-ups.
- Subsea activities
  - DSV work;
  - ROV work;
  - Pigging operations.

CONTACT US

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