



Oil & Gas
Authority

UKCS Stewardship Survey

Technology Section Guidance Notes

October 2019, Rev 2

CONTENTS

1. KEY POINTS TO NOTE	3
2. NEW FOR 2019	4
3. GENERAL GUIDANCE	5
3.1 Technology Spend - Breakdown Costs.....	5
3.2 Technology Plan	7
3.3 Technology Deployment.....	11

1. KEY POINTS TO NOTE

The OGA has a role across the technology spectrum and over the last two years the Technology Plans Stewardship Expectation has delivered on the need for technology planning. The updated Expectation now focuses on the deployment of existing technologies where it generates MER benefits.

The Technology section asks the operator to provide information in 3 areas:

- **Technology Spend** (Operator Level)
- **Technology Plan** (Operator Level)
- **Technology Deployment** (Field Level)

Technology Spend

This is broken into 3 spend categories in the survey:

- UK Spend on Technology Research and Development
- UK Technology Transfer
- UK Total Technology Spend – Breakdown by Category

Technology Plan

The Technology Plan expectations are set out in the Asset Stewardship Expectations and are available on the OGA's website. The link to the expectations is also included in the Technology Plan section of the UKCS Asset Stewardship Survey.

A Technology Plan should indicate to the OGA that an operator has a strategy for the appropriate development and/or deployment of existing, new and emerging technologies to their optimum effect for the benefit of its assets and in support of its MER UK obligations.

A Technology Plan should help to identify potential technology gaps, providing an operator and the OGA with visibility of technology needs that, if addressed, would support the MER UK objectives. Therefore, a Technology Plan is also intended for the OGA to assist an operator to identify technology solutions across its asset base and determine how best to deploy such technologies also collaborating with other companies.

Technology Deployment

By requesting data on Technology Deployment on each field, the OGA will increase the consistency of data collected across the UKCS. This will create a better understanding of the types and pace at which technologies are being deployed in addition to the detail provided in the Technology Plan.

2. NEW FOR 2019

The following changes are being implemented in the Technology section of the survey.

1. **Change to the Technology section – we will also ask for information on a field level now. This will not replace the Technology Plan**
2. The single document upload limit will be removed for the Technology Plan section to enable multiple documents to be submitted if necessary.
3. On the 'UK Technology Spend - Breakdown by Category' page “Well Maintenance and Intervention” and “Reservoir Management” categories will be combined into a single category called “Reservoir and Well Management”
4. Sections have additional guidance and explanatory notes.

3. GENERAL GUIDANCE

3.1 Technology Spend - Breakdown Costs

Please provide actuals for the last 3 years and budget or forecasts for the next 3 years of your company's total spend on technology R&D in support of your UKCS business.

Entries should be whole numbers with no spaces, commas no decimal points, e.g. £5m = 5000000

UK Spend on Technology Research and Development

- Spend should include R&D activities undertaken by your UK business, corporate charges, as well as R&D activities outsources to third-parties, memberships and contributions to joint industry projects.

UK Spend on Technology Transfer

- Please provide information on additional spend related to the testing, qualification, and deployment of advanced technologies, whether or not developed by your company, and in support of your UKCS business.
- This spend category should include all costs (capex and opex) to undertake technology pilots, qualification work design and implementation of advanced technologies, including activities outsources to third-parties, and in collaboration with other companies.

UK Total Technology Spend – Breakdown by Category

- Seismic and Exploration
 - For example; to include technology related to Seismic acquisition, Geology, Seismic processing and imaging, Subsurface modelling and interpretation, etc.
- Well Drilling and Completions
 - For example; to include technology related to Drilling equipment, Well design and planning, Well equipment, Drilling, Casing and cementing operations, High-angle and ERD wells, Multilaterals MWD, LWD and Geosteering, Well coring, logging and testing, Artificial lift, Reservoir stimulation etc.
- Well Maintenance and Intervention
 - For example; to include technology related to Well logging and inspection, Access and intervention equipment, Liquid loading and water production mitigations, Waxing, hydrates and scaling solutions, Sand and solids management, Integrity repairs, Perforating, etc.
- Reservoir Management
 - For example; to include technology related to Reservoir modelling, Improved and enhanced recovery, Production monitoring and optimisation, Reservoir and well surveillance, etc

- Subsea Systems
 - For example; to include technology related to Pipelines, Risers, Jumpers and Connection Systems, Manifolds, Umbilicals, Control systems and automation, Flow assurance, metering and monitoring, Subsea processing, boosting and storage, Subsea power generation, local chemical and hydraulic storage, Installation and construction methodologies (including lift and shift), Subsea inspection and intervention systems (excluding wells), etc.

- Installations and Topsides
 - For example; to include technology related to Onshore terminals, Manned offshore platforms, Unmanned offshore platforms, FPSOs and FSOs, Production and Offloading Buoys, Fluid separation, treatment and compression, Power and utilities, Fluid injection and reinjection, Metering and monitoring, Control systems and automation, Construction and installation, etc.

- Facilities Management
 - For example; to include technology related to Integrity monitoring and inspections, Integrity repairs, Equipment monitoring and reliability, Maintenance and operations, etc.

- Well Plug and Abandonment
 - For example; to include technology related to Data management, Well inspection and cement condition, Intervention equipment, Casing section removal, Barriers, placement and verification, Conductor removal, Site inspection and monitoring, etc.

- Facilities Decommissioning
 - For example; to include technology related to Late life management and equipment readiness, Survey and planning, Data management, Cleaning and isolation, Preparation and removal, Waste management and recycling, Site inspection and monitoring, etc. but excluding wells P&A

3.2 Technology Plan

For the purposes of this Guide, references to:

- 'Operator' means the operator (under a licence) of a UKCS exploration and/or production asset;
- 'Technology' includes technologies covering the whole asset lifecycle comprising the exploration, production, late-life, cessation of production and decommissioning phases.

Required Content

Operators are responsible for preparing and submitting the Technology Plan to the OGA. Where an operator operates multiple assets in the UKCS, the operator is expected to submit a single Technology Plan covering the operated assets in the UKCS (business unit level consolidated plan).

The Technology Plan should specify:

1. the key technology needs for each operated asset or a group of assets;
2. how the operator proposes to address the technology needs it has identified;
3. the proposed timeline for development and deployment of existing, new and emerging technologies;
4. any potential or recognised technology gaps.

Asset Needs – Technology

Operators should identify the technology needs associated with each of its operated assets or group of assets. Such information should be clearly set out in summary tables or sub-sections of the document, and follow, where possible, the suggested classification in category 2 in the table below:

Asset/s Need/s – Category 1	Asset/s Need/s – Category 2
Exploration and Subsurface	New Prospects
	Derisk Discoveries
	Near-Field Exploration
Development Complexity	H2S
	Compartmentalised
	Flow assurance
	HPHT
	Heavy Oil
	Thin Column
	Tight
Capex Efficiency	High Water Production
	Wells
	Tie-Back
	Standalone Facilities
Asset Management	Production Optimisation
	Integrity
	Safety and Uptime
	Opex Efficiency
	Increase Recovery/Life Extension
Decommissioning	Well P&A
	Facilities Decommissioning
	Programme Efficiencies

Table 1: Operators' Assets Needs

Addressing the Identified Technology needs

Operators should describe the consolidated need/s, associated with each of its operated assets or group of assets and identify potential technologies it proposes to use or develop to address those needs. Such information may be set out in table similar to Table 2, however operators may use an alternative reporting format if it includes the requested information. If an operator is not aware of a specific technology opportunity available or under development to address a particular stated challenge, details should be provided, for example in the column titled “Potential Technology Gap” or at some appropriate point in the Technology Plan.

The number of needs identified will vary per operator and therefore the number of rows in the table should be amended accordingly. Operators should include additional information on the technologies being considered to support the entries as applicable.

A proposed timeline that the technology is expected to be available for development and/or deployment should also be included.

UKCS Stewardship Survey Technology Section Guidance Notes

Consolidated Need Proposal (by UK business unit or asset group)	Plan to use existing Technology		Technology Under Development		Technology to be Potentially Developed		No plans to develop Technology (x)	Potential Technology Gap (x)
	Y/N - Timeline	Technology description	Y/N - Timeline	Technology description	Y/N - Timeline	Technology description		
e.g. Asset A and its consolidated need	Y 2018	Technology X or Y to address the following need/s etc...						
e.g. Asset B and its consolidated need			Y 2019	Technology X or Y to address the following need/s etc... Target deployment 20XX. Working with vendors.				
Etc...								

Table 2: UK Business Unit Proposal for Addressing the Identified Technology Needs

Additional Information

It would be beneficial if an operator could provide details of

- any technology projects, JIPs, pilots or trials that they are involved in;
- information on any potential areas where the introduction of any future transformational technology would be of significant benefit;
- identification of any particular technologies that are not commonly used in the UKCS;
- identification of any first-time use, trial or piloting.

This information could be provided by modifying any existing Technology Plan tables or by providing it as stand-alone information.

Timeline for Completion of the Technology Plan

The Technology Plan should be submitted in accordance with the UKCS Asset Stewardship Survey timeline.

Delivery of Expectation

The following indicators will be used by the OGA when assessing compliance with the Technology Plan Expectations:

1. a Technology Plan has been submitted to the OGA as part of the Annual UKCS Stewardship Survey;
2. the operator has listed the key technology needs faced by each asset, or group of assets, and identified the key challenges for such each asset, or group of assets;
3. the operator has described how it proposes to address the technology needs and identified its timeline for doing so;
4. contact details have been provided for single point of contact for each Technology Plan submitted (see Responsible Person).

Responsible Person

The OGA requires a single point of contact if the OGA requires to follow-up on any aspect of an operator's Technology Plan or to engage with regarding technology subjects. Operators should nominate a Responsible Person in the UK as the single point of contact for each Technology Plan submitted. The Responsible Person may be the same individual as the Single Point of Accountability (SPA) for the Stewardship Survey. The following information should be provided:

- Name of Responsible Person
- Job Title
- Email address

3.3 Technology Deployment

For technologies deployed during the current survey year, there is a requirement to input technologies at a field level within the appropriate lifecycle domain. An operators technology plan should provide a useful source of information::

- Seismic and Exploration (to include operators with only licences or to capture technologies that are deployed over a greater areas than field level, this information can be input at Operator level)
- Well Drilling and completions
- Subsea systems
- Installations and Topsides
- Reservoir and well management
- Facilities management
- Well P&A
- Facilities decommissioning

Within each lifecycle domain you will be able to 'Add a technology' or 'Import a technology'

Add a technology

When adding a Technology, you will be required to enter the following data:

- Technology name
 - This can be the name of the technology, including the brand. Please be consistent in naming conventions.
- Technology Description
 - A brief note on what the technology does and what is it for.
- Technology Category
 - Select the closest available category, or 'Other'. Note that each lifecycle domain has unique categories
- Maturity Stage
 - Existing Technology – an established technology, but not previously deployed on the particular field
 - Early commercialisation – a technology with few field deployments which maybe new to the industry or to this application
 - Late Development / Pilot – a technology that has been deployed on a limited scale
 - Early Deployment – a technology or part technology solution deployed as proof of concept.
- Deployment Status:
 - Completed – technology deployment/implemented during the survey year
 - In Progress – technology deployment underway during survey year
 - Planned– technology deployment scheduled during the survey yet but still to commence
 - Unknown – technology deployment status unclear during survey year
- Development Plan
 - Select the closet option, or 'Other'
- Benefit
 - This is a multiple selection. Please select all the benefits that the technology has for this field.

Import a technology

Once a technology has been added to a field and the section has been submitted, you can copy this Technology to another with the 'Import a technology' button.

UKCS Stewardship Survey Technology Section Guidance Notes

If the technology has been imported from another section, the Name, Description and Category cannot be edited.

Please note that updates to the source technology will not be reflected if the technology has been imported. You must remove and re-import if the source technology (name, description, category) has changed.