North Sea Transition Authority

Integrated Field Management

Stewardship Expectation 6

July 2019

1. Expectation

The OGA expects that operators are able to demonstrate an integrated approach to the operation of assets to achieve optimum levels of performance and facilitate the recovery of the maximum value of economically recoverable petroleum.

1.1 This includes in the following areas:

A: Reservoir and subsurface management
B: Asset and infrastructure management
C: Integrated field management plans

1.2 This Expectation is designed to provide an integrated (but by no means exhaustive) set of fundamental elements expected to be demonstrated in each of the above areas in a systematic approach to ensuring production is both protected and grown.

2. Reason for the Expectation

2.1 Pace in activity is required to maximise economic recovery and field value due to a critical dependency on ageing and under-utilised infrastructure. This will involve applying principles of good stewardship across this infrastructure system, from hydrocarbon reservoir to export.

2.2 This Expectation supports the MER UK Strategy[1], in particular the Central Obligation (paragraphs 7, 15 and 16) and paragraphs 18, 20, 27 and 28.

3. Delivering the Expectation

3.1 In each of the three key areas referred to in section 1.1, the OGA expects the fundamental elements set out in sections A, B and C below to be demonstrated (see Figure 1).

3.2 This expectation is designed to align with the annual business planning cycle, therefore these elements should be reviewed within that cycle.

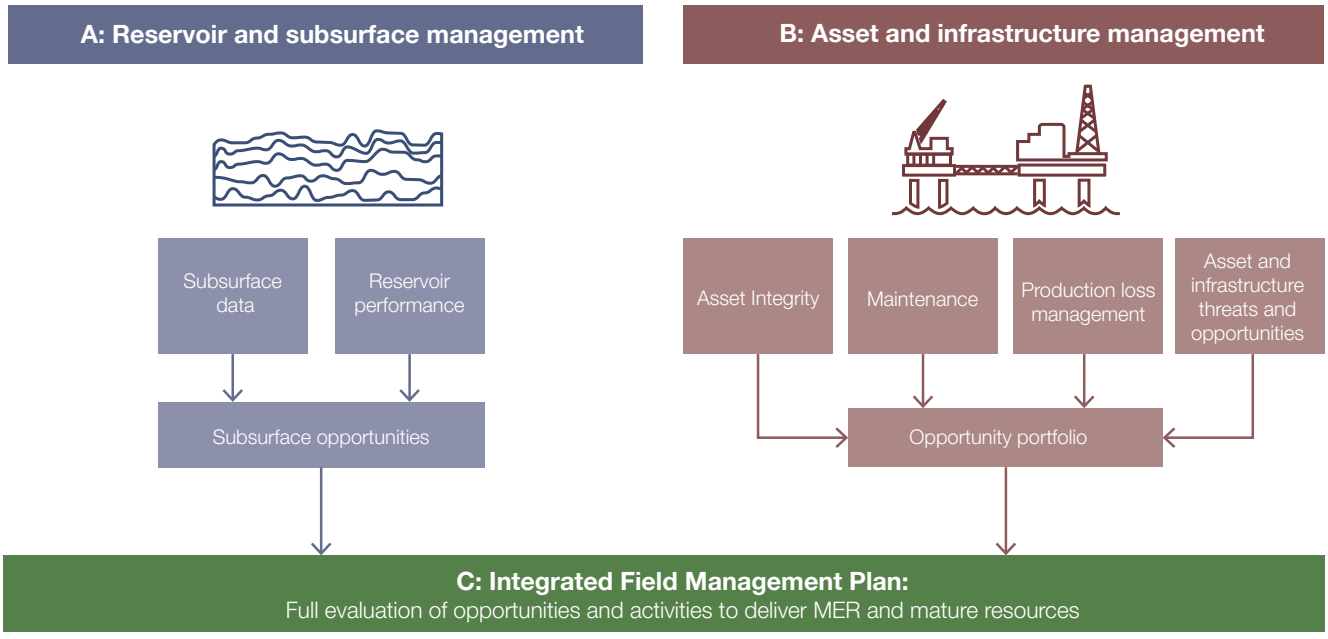

Figure 1: Components of integrated field management

A: Reservoir and subsurface management

Subsurface data

A.1 Incorporation of the most recent subsurface data including seismic, reservoir surveillance and well surveillance data;

A.2 Hold regular, structured reviews of reservoir and well performance and identify any optimisation opportunities (e.g. workovers, artificial lift optimisation, sidetracks, stimulations, reperforations);

A.3 Identify and assess the value of further data acquisition;

A.4 Effectively curate all subsurface information and sample types throughout the whole lifecycle of the field to ensure information and samples acquired in early stages can be brought to bear within all field lifecycle stages and across all relevant disciplines;

A.5 Demonstrate well testing and allocation processes consistent with OGA metering/measurement guidelines[2].

Reservoir performance

A.6 Integrated understanding of reservoir performance and ultimate recovery potential based on an up-to-date and detailed subsurface description of the reservoir that includes key uncertainties and incorporates all available data;

A.7 Distribution and characterisation of the hydrocarbons in place using appropriate static modelling tools;

A.8 Understanding and forecasting of dynamic reservoir behaviour using dynamic modelling and/or other appropriate analytical tools;

A.9 Assess and identify improved oil recovery (IOR)/enhanced oil recovery (EOR) activity or technology[3] with potential to maximise economic recovery[1].

Subsurface opportunities

A.10 Identification and ongoing review of a portfolio of further opportunities, including infill wells and well activities to deliver the recovery potential and resource maturation.

B: Asset and infrastructure management

Asset integrity

B.1 Demonstrate understanding of the asset's integrity framework over the entire field life, including capacity for extension of field life, reviewed on a regular basis;

B.2 Evaluation and critical appraisal of asset integrity;

B.3 Review and assessment of potential obsolescence over field life;

B.4 Facilities investment review (to include maintenance, see B.5 to B.8 below) to support and optimise production from the asset.

Maintenance

B.5 Facilities surveillance and ongoing maintenance programme for all areas of the infrastructure, including topsides, subsea and wells with equipment type and status reviewed on an annual basis;

B.6 A mechanism for identifying, maintaining and monitoring critical production equipment;

B.7 Implementation of scheduled planned maintenance routines;

B.8 Regular assessment of well stock for identification of workover candidates[4].

Production loss management

B.9 A system in place that identifies and classifies losses against the 4-choke model, understands the root causes and conducts an economic assessment of re-instatement;

B.10 Classify production losses in accordance with any relevant OGA production efficiency guidance.

Asset and infrastructure threats and opportunities

B.11 Maintain a production threats and opportunities register, accompanied by evidence of an action plan for each, reviewed and actioned on a regular basis;

B.12 Review and assess facilities constraints and opportunities for debottlenecking (e.g. asset life, name-plate capacities) impacting recovery and resource maturation.

C: Integrated field management plan

Integrated review and screening of opportunities

C.1 Undertake an integrated review of subsurface and asset management opportunities on a regular basis to support a forward strategy and business plan aligned with Maximum Economic Recovery of the UK (MER UK);

C.2 Understand the ultimate recovery potential from the field resulting from the (operator's) portfolio of field development opportunities;

C.3 Identification of wider opportunities as outlined in Stewardship Expectation SE1 (Joint Venture Hub Strategy Development[5]), that could extend field life and unlock reserves within existing fields;

C.4 Integrated opportunity review screening assessment against resource constraints including economic assessment and technical constraints (i.e. personnel on board) leading to identified activities for progression into planning.

Integrated planning

C.5 Use of an integrated planning process with committed schedules, defined resource levels and robust tracking and reporting, including the activities identified in C.1 to C.4;

C.6 Schedules should contain an approval process and clear accountabilities, including processes for handling emergent unplanned events;

C.7 Integrated planning of turnarounds (TARs[6])to ensure all activities are completed within a defined timeframe;

C.8 Collaboration with other operators to align outages and minimise production losses.

Integrated information management

C.9 Integrated field management requires integrated *information* management, across disciplines (geoscience, engineering, commercial – onshore and offshore) and across stages in the field's development. Information should be available to all stakeholders in all stages of the development lifecycle.

Business plan to capture opportunities in support of MER UK

C.10 A demonstrated link between identified activities and opportunities to achieve MER UK (identified in C.1 to C.4) and the annual business planning cycle, leading to resource maturation.

4. Demonstrating delivery

4.1 The OGA currently engages with licensees and operators on a number of levels and in a number of ways, and information obtained from those engagements will help inform the OGA of the extent to which a licensee or operator may be delivering this Expectation. These include, for example:

Annual Stewardship Survey

4.1.1 The OGA's Annual UKCS Stewardship Survey collects a range of data from licensees and operators for each production licence in the UKCS. The OGA may request additional information or reports. The OGA generally uses its powers under section 34 of the Energy Act 2016 to obtain such survey data and additional information.

Performance Benchmarking

4.1.2 The OGA may produce benchmarking data on a variety of metrics derived from the Stewardship Survey data and other information provided to it. These data will generally be presented to industry in aggregated form and used in Tier Reviews with companies to improve performance.

Tier Reviews

4.1.3 The OGA will request an operator's participation in Tier Reviews in accordance with the OGA's Stewardship Review Guidance[7]. That guidance provides further detail on the Tier Review structure, prioritisation, planning, execution and follow-up. The OGA will set the agenda for the Tier Review to focus on issues it considers present the greatest stewardship impact, and based on data received in the Annual UKCS Stewardship Survey, benchmarking and delivery against this Expectation.

5. References

1 The Maximising Economic Recovery Strategy for the UK

2 OGA Metering Guidelines (https://www.ogauthority.co.uk/exploration-production/production/petroleum-measurement/)

3 SE8: Technology Deployment

4 SE4: Well Activity Performance

5 SE1: Joint Venture Hub Strategy

6 OGUK Guidance for The Efficient Execution of Planned Maintenance Shutdowns, 2015

7 OGA Stewardship Review Guidance

8 Vision 2035

9 UK Oil and Gas Reserves and Resources at end 2017

10 Recovery Factor Benchmarking Report

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