



Oil & Gas
Authority

Stewardship Expectations

SE-06 Production Optimisation
Implementation Guide

1. Objectives

The objectives of this Stewardship Expectation are to ensure that an operator is aware of the good production optimisation practice deemed to maximise economic recovery of fields operated on behalf of its co-venturers. This Stewardship Expectation describes the fundamental elements expected in a systematic approach to ensuring production is both protected and grown.

2. Indicators to assess delivery

Delivery of this Stewardship Expectation is demonstrated through inclusion of the following elements in any production optimisation approach:

Process and systems

2.1 Reservoir, wells and plant technical limits

Technical limit processes should be in place for reservoir, wells and plant to:

- 2.1.1 Understand the recovery technical limit and current predicted recovery, and then evaluate and select future recovery options (new wells, improved oil recovery, enhanced oil recovery, etc) to maximise economic recovery
- 2.1.2 Identify the associated technology and/or production strategies required to maximise economic recovery
- 2.1.3 Identify activities to raise Structural Maximum Production Potential (SMPP) across all production chokes, thus maximising economic recovery

2.2 Reservoir management plans

A reservoir management plan including:

- 2.2.1 A reservoir description, including an up-to-date, detailed, integrated subsurface description of the reservoir that incorporates available data and technology into a field-wide interpretation supported by observed historical reservoir performance
- 2.2.2 A model (static and dynamic) describing the distribution and characterisation of hydrocarbons in place and reserves

- 2.2.3 A field depletion plan defining how the primary drive mechanisms will deplete the hydrocarbon resources and how, when, or if these mechanisms should be supplemented with additional recovery. As information is gained from field performance (refer to 2.3 Reservoir, well and facilities surveillance programmes), the OGA expects the depletion plan to be updated at an appropriate frequency to include changes needed to better reflect how to optimise the depletion plan
- 2.2.4 Utilisation of the the latest subsurface data (including seismic) in support of 2.2.1, 2.2.2 and 2.2.3 above should be utilised unless it can be demonstrated that it is not relevant in particular cases

2.3 Reservoir, well and facilities surveillance programmes

2.3.1 Reservoir surveillance

A reservoir surveillance programme, incorporating practices relevant as follows:

- a. Voidage monitoring, analysis and optimisation for relevant water flood reservoirs
- b. Reservoir pressure monitoring and analysis
- c. Produced water analysis
- d. Production logging

2.3.2 Well surveillance

A well surveillance programme, incorporating practices relevant as follows:

- a. An understanding of well surveillance equipment type and status
- b. Evidence of well surveillance data collection (including pressures, temperatures and flow rates)
- c. Well testing protocol
 - Method (e.g. test separator, by difference)
 - Frequency
 - Flow rates
- d. Well reviews and opportunities
 - A structured review at an appropriate defined frequency of existing field well stock, examining well status and optimisation opportunities (e.g. workover, artificial lift optimisation)

2.3.3 Facilities surveillance

A facilities surveillance programme, incorporating practices relevant as follows:

- a. Equipment type and equipment status (e.g. flowline intelligent pigging)

- Data collection (e.g. pressures, temperatures, flow rates)
- b. Turnarounds (TARs)
 - Committed schedule for all TAR activities
 - Defined resource level
 - Robust progress tracking/reporting (e.g. hours burned, work scopes complete)
- c. Maintenance (scheduled planned maintenance routines)

2.4 Production threats and opportunities assessment, including a process for identifying production critical equipment and maintenance requirements

- 2.4.1 A process for identifying threats and opportunities to field production accompanied by evidence of an action plan and associated accountable individuals and investment
- 2.4.2 A mechanism identifying, maintaining and monitoring critical production equipment and its availability

2.5 Integrated planning, including turnaround scheduling

- 2.5.1 An integrated planning process which demonstrates:
 - a. A multiyear, multimonth, month, multiday plan schedule with increasing detail
 - b. Gate approval process with clear accountabilities ensuring preparation and rigour, complete with an established plan 'break in' process (for handling emergent unplanned events)
- 2.5.2 Planned infrastructure outages:
 - a. Collaboration with other operators to align outages with those of other interconnected infrastructure to minimise production losses
 - b. Alignment of opportunistic maintenance activities with outages
 - c. Conducting a gap analysis compared to the Oil & Gas UK TAR Best Practices guidance

2.6 A choke model based production loss management system identifying planned/unplanned losses, economic and uneconomic production potential

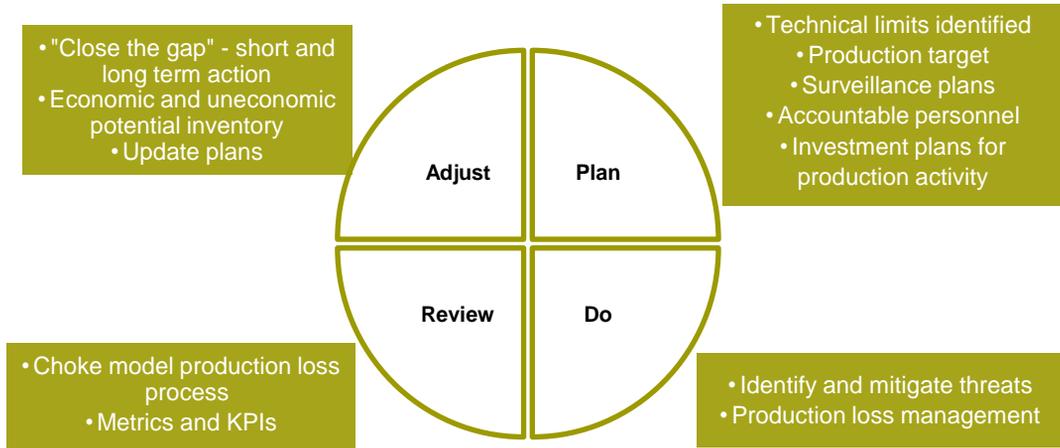
- 2.6.1 A field choke model
- 2.6.2 Production losses in each choke identified against potential
- 2.6.3 Loss management opportunities identified (based on root cause analysis), with economic assessment
- 2.6.4 Economic and uneconomic production potential opportunities identified, with economic assessment and action plan
- 2.6.5 Linkage to operating programme and budget, demonstrating investment plans.

Reference should be made to the Society of Petroleum Engineers (SPE) Guidance on Production Loss Management.

Continuous improvement

2.7 A method of identifying, recording and monitoring the completion of actions and action plans arising from the production optimisation approach

2.8 Demonstration of production optimisation action linkage to business plan and budget cycle



People

2.9 The operator’s organisation demonstrates accountable individuals, both onshore and offshore, with roles and responsibilities for delivering production optimisation

2.10 Demonstration of integrated onshore and offshore engagement and collaboration within the operator’s production optimisation process. Offshore organisational input to the ‘plan, do, review, adjust’ process is important to successful optimisation



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