



**DIRECTORATE GENERAL OF HYDROCARBONS**

(Ministry of Petroleum & Natural Gas, Government of India)

# Guidance Document for online submission of PSC processes as per DGH notifications dated 25.04.2020 and 12.07.2021

(Version 2.0)



## Table of Contents

|  |           |
|--|-----------|
| <b>1. General Guidelines .....</b>   | <b>4</b>  |
| <b>2. Online Factsheet .....</b>   | <b>6</b>  |
| <b>3. Category A.....</b>  | <b>7</b>  |
| 3.1. Bank Guarantee and Legal Opinion and renewal and revised Bank Guarantee .....           | 8         |
| 3.2. Inventory Report .....  | 8         |
| 3.3. Submission of Insurance & Indemnity .....   | 8         |
| 3.4. Quarterly Reports .....   | 8         |
| A) Quarterly Progress Reports .....  | 8         |
| B) Value of Production and Pricing Statement .....   | 9         |
| C) Cost & Profit Petroleum Calculation .....   | 9         |
| 3.5. Appointment of Auditor .....  | 10        |
| 3.6. Well Location Review/ Change/ Deepening .....   | 11        |
| 3.7. Measurement of Petroleum .....  | 12        |
| A) Measurement of Petroleum .....  | 12        |
| B) Calibration of Flowmeters, witness custody transfer operations .....                      | 12        |
| 3.8. Notice for entering next Phase or Relinquishment.....                                   | 13        |
| A) Notice for entering next Phase.....   | 13        |
| B) Relinquishment.....   | 13        |
| 3.9. Format-C: Commercial Discovery (Declaration of Commerciality) .....                     | 14        |
| <b>4. Category B .....</b>   | <b>15</b> |
| 4.1. Work Programme & Budget-BE and RE .....   | 16        |
| 4.2. Appraisal Programme or its revision .....   | 18        |
| 4.3. Field Development Plan or its revision .....  | 19        |
| <b>5. Category C .....</b>   | <b>21</b> |
| 5.1. Extension of Exploration Phase.....   | 21        |
| 5.2. Liquidated Damages on account of Cost of Unfinished Work Programme .....                | 21        |
| 5.3. Assignment/Transfer of Participating Interest.....                                      | 21        |
| 5.4. Site Restoration Plan/Abandonment Plan.....   | 21        |
| 5.5. Extension of Production Sharing Contract .....  | 22        |
| 5.6. End of Year Statement (audited), Annual Audited Accounts and accounting procedure ..... | 22        |
| <b>ANNEXURES.....</b>  | <b>23</b> |
| <b>Annexure I: FDP Processing Flow .....</b>   | <b>24</b> |
| <b>Annexure II: FDP Checklist .....</b>  | <b>25</b> |
| <b>Annexure III.....</b>   | <b>34</b> |

## Document Version Summary

**Document Title:** Guidance Document for online submission of PSC processes as per DGH notifications dated 25.04.2020 and 12.07.2021.

**Document Scope:** This document is prepared to guide the E&P Contractors for submission of PSC processes as per DGH notification dated 25.04.2020 and 17.07.2021.

### Version/Revision History:

| Version | Date        | Revision Remarks |
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## Acronyms and Abbreviation

| #   | Abbreviation | Description                                 |
|-----|--------------|---|
| 1.  | BE           | Budget Estimate                             |
| 2.  | BG           | Bank Guarantee                              |
| 3.  | COSA         | Crude Oil Sales Agreement                   |
| 4.  | DGH          | Directorate General of Hydrocarbons         |
| 5.  | DST          | Drill Stem Test                             |
| 6.  | E&P          | Exploration and Production                  |
| 7.  | FDP          | Field Development Plan                      |
| 8.  | FY           | Financial Year                              |
| 9.  | G&G          | Geology & Geophysics                        |
| 10. | GCV          | Gross Calorific Value                       |
| 11. | GoI          | Government of India                         |
| 12. | GSA          | Gas Sales Agreement                         |
| 13. | ICAI         | Institute of Chartered Accountants of India |
| 14. | MC           | Management Committee                        |
| 15. | MOP          | Measurement of Petroleum                    |
| 16. | MoPNG        | Ministry of Petroleum and Natural Gas       |
| 17. | MWP          | Minimum Work Programme                      |
| 18. | NCV          | Net Calorific Value                         |
| 19. | OCR          | Operating Committee Resolution              |
| 20. | PP           | Profit Petroleum                            |
| 21. | PPAC         | Petroleum Planning & Analysis Cell          |
| 22. | PRMS         | Petroleum Resource Management System        |
| 23. | PSC          | Production Sharing Contracts                |
| 24. | PVT          | Pressure-Volume-Temperature                 |
| 25. | RE           | Revised Estimate                            |
| 26. | RFDP         | Revised Field Development Plan              |
| 27. | SCAL         | Special Core Analysis                       |
| 28. | WCR          | Well Completion Report                      |
| 29. | WP&B         | Work Programme and Budget                   |

## 1. General Guidelines

1. The objective of this document is to assist E&P contractor in submitting information required as per the online forms prepared for Category A, B and C PSC Processes.
2. Following is the description of Category A, B and C PSC processes
  - **Category A** - Processes where documents shall be accepted on self-certification basis and no approval is required.
  - **Category B** - Processes where approval will be deemed on expiry of 30 days of submission of documents under self-certification.
  - **Category C** - Processes where approval shall be required under the Act/Rules or Contracts.
3. For Category A, B and C process, E&P contractors are advised to consider the following points while submitting the process online-
  - a) E&P contractor needs to submit information/data as per the forms available online.
  - b) Optional information/data not submitted by the E&P contractor will be considered as 'Not Applicable' (NA).
  - c) Self-declaration should be provided by the E&P contractor while submitting the form in online mode as per DGH notification dated 25.04.2020 and 12.07.2021.
  - d) All self-certified documents should be as per provisions of PSC and should be duly supported with all relevant documents duly attested by the authorized signatory/signatories of the E&P contractor.
  - e) All self-certified documents in any of the above category shall be subject to review by MoPNG/DGH at any time for alignment with the relevant provisions of PSC, policies/guidelines issued by Government/DGH, Good International Petroleum Industry Practices (GIPIP) and other statutory requirements.
4. The process approval timeline excludes the time taken by the E&P Contractor to respond to the queries raised by the DGH/MC/Government.
5. In support of their submissions, E&P Contractors may provide any additional information/data if not covered in the form through "upload additional document" option.
6. Online form should not be considered as an exhaustive list for evaluation. DGH/MoPNG/MC may raise queries, notify deviation considering all relevant aspects of the case while evaluating the same.

- 7.** For each process the Operator/E&P contractor shall maintain & comply all the obligations prescribed under relevant Article/Section/Appendix/etc. of the PSC/ Gol Policies and Notifications etc.
- 8.** OCR in compliance to Joint operating agreement/PSC to be submitted in case more than one party is having participating interest in the PSC. In case OCR is not available at the time of submission, E&P contractor needs to provide justification for the same for which option is available in the online form and this non-submission of OCR (if required under PSC) is a default deviation from the Contractor side.
- 9.** Post submission of the process as per the form, an acknowledge receipt/ticket will be generated for the E&P contractor.
- 10.** In case of any deviation or difference of opinion, matter will be taken up suitably with DGH/MC/MoPNG.
- 11.** The processes which are not listed under "Self-certification" can be submitted in "Normal Submission" in PSC-Management System.
- 12.** If any clarification is required regarding submission of Category A, B, C processes, E&P contractor is advised to raise their query/queries through self-certification helpdesk Helpdesk link - <https://online.dghindia.org/SelfCertification/Helpdesk>

## 2. Online Factsheet

An online factsheet has been developed for each block in the PSC Management system. As soon as data is available with the E&P contractor, the same is to be updated in the factsheet. Prior to submission of any process, the Contractor should mandatorily update the factsheet.

Factsheet comprises of following sections for capturing of data/information of block/field:

- A.** Block general details
- B.** E&P activities
- C.** Exploration phase extension details
- D.** Block discovery and FDP/RFDP details
- E.** Reserve details (MC approved)
- F.** Bank guarantee details
- G.** Drilled well data
- H.** Well status
- I.** Audited account/report submitted
- J.** Environmental impact assessment report
- K.** Joint Operating Agreement (JOA)
- L.** Production details
- M.** Commercial information (COSA/GSA)
- N.** MC meeting details

The following PSC processes will be captured in the Factsheet:

1. Change of MC Members
2. Environment Impact Assessment report 1 & 2
3. Details of Discovery Notification
4. Details of PCI
5. Joint Operating Agreement
6. Submission of COSA/GSA

### 3. Category A

#### General Guidelines for Category-A

*"Processes where documents shall be accepted on self-certification basis and no approval is required"*

1. DGH letter will be issued to the Contractor for the submissions made under following five processes:
  - Appointment of Auditor
  - Well Location Review/ Change/ Deepening-Exploration
  - Measurement of Petroleum
  - Notice for entering next Phase or Relinquishment
  - Format-C: Commercial Discovery (Declaration of Commerciality)
  
2. Operator (Secretary of MC) on behalf of the Contractor may raise a Management Committee Meeting (MCM) request post submission of the aforementioned five processes. Operators need to raise an online request for MCM at least 28 days prior to such meeting.



### **3.1. Bank Guarantee and Legal Opinion and renewal and revised Bank Guarantee**

- a. The BG format prescribed in the PSC under the relevant Article/Section/Appendix/etc. should be duly filled and submit along with the requisite document(s) and legal opinion.
- b. Amount of Bank Guarantee should commensurate with the obligation as per PSC/Gol Policies.
- c. In case of submission of renewal/revised Bank Guarantee, it should be submitted within the timeline stipulated in PSC/Policies.

### **3.2. Inventory Report**

- a. The report is to be submitted within 30 days of completion of each financial year.
- b. As per the relevant PSC article, Operator on behalf of contractor to notify DGH, date on which inventory verification will be carried out in presence of the 3rd party auditor. In accordance with PSC, the Government shall have the right to be present when such inventory verification exercise is being carried out.

### **3.3. Submission of Insurance & Indemnity**

- a. The contractor shall maintain & obtain insurance coverage & provide indemnity to Central & State Exchequers in accordance with relevant Article/Section/Appendix/etc. of the PSC.

### **3.4. Quarterly Reports**

#### **A) Quarterly Progress Reports**

- a. Quarterly progress reports should be submitted within 15 days from the end of quarter in online standardized form.
- b. Quarterly report should be in line with the approved WP&B for the concerned year.
- c. Justification for variance between planned & actual activities and expenditure are to be provided.

**B) Value of Production and Pricing Statement**

- a. The contractor shall maintain & comply with all the obligations prescribed as per relevant Article/Section/Appendix/etc. of the PSC.
- b. In case of gas sale and pricing statement (Form 6B), factoring of GCV to NCV to be stated.
- c. Reference/source for gas price and crude oil price is to be provided.
- d. In case of gas price, prevalent PPAC price or rate agreed with the customer on Arm's Length basis as per PSC is to be provided.
- e. Information regarding two different prices for same customer is to be included/maintained (if applicable).

**C) Cost & Profit Petroleum Calculation**

- a. Quarterly statement to be provided as per relevant PSC article and section 5,6,7,8,9 etc. of Appendix C of the PSC.

### 3.5. Appointment of Auditor

- a. Total fees payable is to be mentioned excluding GST and statutory levies.
- b. Auditor should specifically report inter-alia about: -
  - Conflict of interest prior to conduct of audit assignment.
  - Related party transaction as per AS-18 and compliance of section 3.1.4 of the accounting procedure by the operator.
  - Issues of Internal control, fixed assets and fraud as per applicable CARO.
  - Quantitative details of oil, gas, and condensate as per Schedule III of the Companies Act 2015.
  - Non-Compliance of PSC provisions in respect of procurement of material & services.
  - Costs to be disallowed as per PSC provisions.
- c. As part of audit report, the audit should validate: -
  - Computation and remittance of License fee, Royalty on oil & gas and Govt. share of Profit Petroleum (PP), along with IM/PTRR and notional tax calculation, if applicable.
  - Invoice wise Sales/Revenue schedule and its valuation as per PSC provisions & Government of India (GoI) notifications, if applicable. Further to be ensured that, amount charged in any form from the customer should be duly accounted in the books of accounts, & accordingly PP to be paid, if any.
  - Revenue taking into consideration should be in pursuant to Accounting Standard and Guidance Notes issued by ICAI.
  - The Auditor is to provide a certificate that they have satisfied themselves regarding procurements having been made competitively and as per the PSC provisions.
- d. The contractor should ensure that the same Auditor should not be appointed for more than three consecutive years.
- e. If Appointment of Auditor is not found in line with PSC/DGH provision, then the submitted audited account may not be considered for the adoption.

### **3.6. Well Location Review/ Change/ Deepening**

- a.** E&P contractor should submit the proposal prior to commencement of drilling of the well.
- b.** Well location Review for development wells applicable to those locations quantified but not specified during FDP approval.
- c.** Location change / Deepening for development locations already approved under FDP.
- d.** E&P contractor will be provided with the option of well location review or change or deepening.
  - i) If well location change option is chosen, then operator is required to provide details of original location.
  - ii) If well deepening option is chosen, then operator is required to provide details of original depth.
- e.** Option to add more than one well has been provided in the online format.

### 3.7. Measurement of Petroleum

#### A) Measurement of Petroleum

- a. After approval of FDP and implementation of the FDP, the E&P contractor needs to submit the procedure for measurement of petroleum (MOP) proposal in the online standardized format.
- b. DGH representative may be called for verification of the facilities installed by the operator as per MOP.
- c. Operator is required to resubmit the Measurement of Petroleum process, in case of any modification or upgradation in metering facilities.
- d. For small fields, E&P contractor may take storage tank dip measurement once in 6 hours. In any time of examination of the proposal, DGH can notify the E&P contractor to provide justification for taking storage tank dip measurement once in 6 hours.
- e. If COSA/GSA is revised/modified, then updated COSA/GSA to be submitted in online factsheet of the block.

#### B) Calibration of Flowmeters, witness custody transfer operations

***(This process will be submitted under "Measurement of Petroleum")***

- a. As per Management Committee approved frequency, Operator shall schedule Testing and calibration activity.
- b. The contractor shall timely notify the government (DGH) of its intention to conduct measuring operations or any agreed alteration for such operations. Government shall at its sole risk and expense have right to be present and supervise either directly or through authorized representative in such operations.
- c. Operator shall notify the DGH at least one-week in advance for measurement of petroleum activity along with the details with respect to duration of measurement activity, detail of field and instruments for measurement of petroleum.
- d. Post notification, DGH may send government representative for witnessing. DGH will notify the contractor in advance with the representative's information.
- e. The points of measurement, calibration along with the minutes of meeting should be documented as per the form. These documents are to be duly signed by the operator, calibrator, third party validator, buyer and DGH representative (if present).
- f. Operator to upload signed witness certificate along with other supporting documents.

### **3.8. Notice for entering next Phase or Relinquishment**

#### **A) Notice for entering next Phase**

- a.** At the expiry of any Exploration Phase of the Exploration Period, E&P contractor shall have the option, exercisable by giving a notice to the Government through online process, in the prescribed format of self-certification, at least thirty (30) days prior to the expiry of the relevant phase to proceed to the next Exploration Phase on presentation of requisite guarantees provided under PSC.
- b.** Status of Minimum Work Programme to be provided by the operator.

#### **B) Relinquishment**

- a.** At the expiry of any Exploration Phase of the Exploration Period, E&P contractor shall have the option, exercisable by giving a notice to the Government through online process, in the prescribed form of self-certification, at least thirty (30) days prior to the expiry of the relevant phase to relinquish the entire Contract Area except for any Discovery Area and any Development Area.
- b.** Contractor may relinquish any part of the Contract area under the relevant provision (s) of PSC.
- c.** Contractor is required to provide map and coordinates of the area that is being relinquished.
- d.** Relinquishment of all or part of the Contract Area shall not be construed as absolving the Contractor of any liability undertaken or incurred by the Contractor in respect of the Contract Area during the period between the Effective Date and the date of such relinquishment.

### **3.9. Format-C: Commercial Discovery (Declaration of Commerciality)**

- a. G&G data and maps / models are essential to support the submission.
- b. All relevant reports such as WCRs, FERs and other G&G / Petrophysics studies need to be made available.
- c. Methodology of estimation of in-place and input data is to be furnished.
- d. Reservoir Engineering Reports: Reports and Data on Well Test/DST, Routine and special PVT studies, Routine and special core analysis and any other laboratory study for fluid and core to be submitted.
- e. Reports on Reservoir Modeling and Simulation/Material Balance Study and Copy of Reservoir and Simulation models to be submitted. Reserves and Resources classification framework should be as per **PRMS-2018**. Oil & Gas profiles and work carried out for Economic Limit Test (ELT) should also be made available.
- f. Guidelines for suitable Reservoir Engineering study to be carried out for generation of Oil & Gas profiles based on the size and location of the discovery are available at **Annexure III**.

## 4. Category B

### General Guidelines for Category-B

*"Processes where approval will be deemed on expiry of 30 days of submission of documents under self-certification"*

1. 30 days timeline will start after receiving of complete documents from Contractor.
2. 30 days time will not include time taken by Contractor for responding to the query(ies) or any pendency at Contractor's end.
3. For Category-B processes, DGH views will be provided to the contractor post review by DGH.
  - a) In case of agreement on DGH views, process will put up to the Management Committee (MC).
  - b) In case of disagreement on DGH views, reasons to be provided by Contractor. Reasons provided will be examined by DGH and thereafter, it will be put up to the Management Committee (MC).



#### **4.1. Work Programme & Budget-BE and RE**

- a.** Work Programme and Budget to be submitted 90 days prior to the ending of Financial year.
- b.** The form has been divided into five major heads- Budget Summary, Programme Quantity, Exploration & appraisal, Development and Production.
- c.** According to the activities planned in next financial year (in case of BE)/current financial year (in case of RE), operator can submit the activities description and estimated budget in the five major heads mentioned above.
- d.** Budgeted/Actual Costs under the head-Exploration costs should be within Appendix-H of the PSC, wherever applicable. Operator needs to provide reason, justification and supporting document for variance w.r.t Appendix-H wherever applicable.
- e.** In case of submission of Development and Production WP&B (BE), E&P contractor to provide reason for variance w.r.t approved FDP/RFDP (if applicable).
- f.** In case of WP&B (RE), operator needs to provide reason for variance w.r.t approved BE.
- g.** In case the budget line items (activities) planned by the operator are not included in the list then operator will have the option of adding more activities.
- h.** If drilling activities are planned, a separate form is provided in exploration, appraisal and development WP&B form to describe technical details of the drilling activities.
- i.** In case of BE, Contractor will have the option to fill up limited well details or full well details. In case of limited well details submission, Contractor will have to tick undertaking that full details will be provided either in RE submission or through offline mode before commencement of drilling.
- j.** Development and Production Work Programme and Budget to be submitted field wise /DA wise. In online form, system will collate all the activities and calculate the total estimated budget for the whole block.
- k.** Annual reserves table in PRMS format for each field in the block need to be provided for consideration of MC.
- l.** In case Production Projection is provided-An estimate of potential production to be provided which will be achieved through the implementation of the said WP&B for each of the 3 years following the year to which the current WP&B is provided in line with provisions of PSC. If major changes in yearly estimate for potential production are required, these shall be based on evidence necessitating such changes and OC shall highlight /inform the same with details.
- m.** In case Programme quantity is provided following points to be considered-

- Operator to provide reason for variance w.r.t approved FDP.
  - In case of WP&B (RE), operator needs to provide reason for variance w.r.t approved BE. Production target for year cannot be changed for RE.
  - In case of WP&B (RE), Production Performance against the targets of current year in terms of percentage achievement to be provided.
- n.** Amount of BG (if Applicable) as per PSC to be indicated by the operator at the time of submission of WP&B.
- o.** Post MC review/approval of WP&B, requisite Bank guarantee (if any), to be submitted as per the form under category A Process (Submission of Bank Guarantee).

## 4.2. Appraisal Programme or its revision

- a. Appraisal Programme to be submitted within 120 days post submission of Potential commercial interest (PCI) in the factsheet.
- b. In case the budget line items (activities) planned by the contractor are not included in the list then contractor will have the option of adding more activities.
- c. If drilling of the well(s) is planned, a separate form within this process is provided to describe the drilling activities.
- d. Post approval of the above Appraisal Programme during a Financial Year (FY), the year-wise Appraisal Work Programme and Budget should be included/provided in the Exploration Work Programme and Budget (WP&B) as a separate line item in the following manner:
  - For the 1<sup>st</sup> year, in case exploratory WP&B -BE & RE has already been submitted, then appraisal budget (WP&B-RE) of such year will be included in the revised RE for current FY.
  - In case WP&B-BE & RE is yet to be submitted, then appraisal budget to be included/provided in the WP&B-BE & RE suitably.
  - For subsequent FY, appraisal budget to be included in exploratory WP&B-BE (Please refer 4.1).

### 4.3. Field Development Plan or its revision:

- Please refer FDP/RFDP Processing Flow "**Annexure I**" to understand the FDP/RFDP processing flow in detail.
- Pre-FDP/RFDP meeting should be scheduled at least 15 days prior to the FDP submission. Please refer FDP Checklist at "**Annexure II**" which is prerequisite for the Pre-FDP/RFDP meeting.
- FDP/RFDP completeness will be examined by DGH prior to processing of FDP/RFDP. In case of incompleteness, FDP/RFDP will be sent back to the contractor with comments to resubmit the FDP/RFDP with complete documentation/information/data.
- FDP/RFDP processing/approval timelines will start once complete data/information/documents are received in DGH.

The following may be noted while submitting FDP/RFDP online through PSC-MS:

- a. Contractor shall submit FDP/RFDP within the timelines stipulated in PSC and/or Policies.
- b. In case of integrated FDP/RFDP, for each field all information of G&G, Reservoir, Drilling, Production, HSE and Contract Finance will be provided. "Add Field" option is available in the online form to add details of any additional field(s).
- c. For Revised FDP justification for revising the FDP/RFDP should be provided.
- d. All G&G data, maps/models and other relevant reports post DoC submission need to be provided.
- e. Reservoir Engineering Reports: Reports and Data on Well Test/DST, Routine and special PVT studies, Routine and special core analysis and any other laboratory study for fluid and core to be submitted.
- f. Reports on Reservoir Modeling and Simulation/Material Balance Study and Copy of Reservoir and Simulation models to be submitted. Reserves and Resources classification framework should be as per PRMS-2018. Oil & Gas profiles should also be made available.
- g. Guidelines for suitable Reservoir Engineering study to be carried out for generation of Oil & Gas profiles based on the size and location of the discovery are available at **Annexure III**.
- h. A separate form is provided to describe the drilling activities.
- i. As per PSC, revised FDP should be submitted only in case of material deviation from the approved FDP. However, to establish material deviation, E&P contractor

should submit justification of the proposed material deviation from last approved FDP to DGH for its examination. Post submission of justification, a meeting will be scheduled between E&P contractor and DGH to deliberate on the requirement of submission of revised FDP. The outcome of meeting will be submitted to the Management Committee for its review and approval.

- j.** The objective of convening meeting prior to submission of revised FDP is to reduce the no. of submissions of revised FDP.
- k.** Contractor shall comply with relevant PSC article prior to signing the joint development agreement and submission of development plan.
- l.** Please refer FDP Checklist "**Annexure II**" to understand the prerequisite for the FDP submission.

*\* Applicable to all FDPs/RFDPs other than Exploration in ML*

## 5. Category C

*"Processes where approval shall be required under the Act/Rules or Contracts"*

### 5.1. Extension of Exploration Phase

- a. Form should be duly filled and submitted at least 30 days prior to the expiry of relevant phase.
- b. Technical or other good reason to be provided for extension with relevant supporting documents.
- c. Status of MWP completion and work to be carried out should be provided.

### 5.2. Liquidated Damages on account of Cost of Unfinished Work Programme

- a. Contractor shall pay the cost of unfinished work programme/LD to the Government within sixty days (60 days) following the end of exploration phase or early termination of the contract.
- b. Payment should be made preferably through Bharat Kosh:  
<https://bharatkosh.gov.in/>

### 5.3. Assignment/Transfer of Participating Interest

- a. E&P Contractor shall comply with relevant PSC article prior to assignment/transfer of PI.

### 5.4. Site Restoration Plan/Abandonment Plan

- a. SRF'1999 Guidelines and SRG'2018 Guidelines should be complied while preparing the plan in prescribed format.
- b. According to the type of block- Offshore/Onshore, OISD/DGMS approval letter is to be submitted.
- c. Link to update SRF details on SRF Management System:  
<https://apps.dghindia.net/srf/account/login/>

## **5.5. Extension of Production Sharing Contract**

- a.** Proposal should be submitted according to the relevant policy approved by Government of India. Please find below reference of policies-
  - Pre NELP-Exploration: - GOI Policy dated 7th April 2017
  - Pre NELP discovered field: - GOI policy dated 28th March 2016

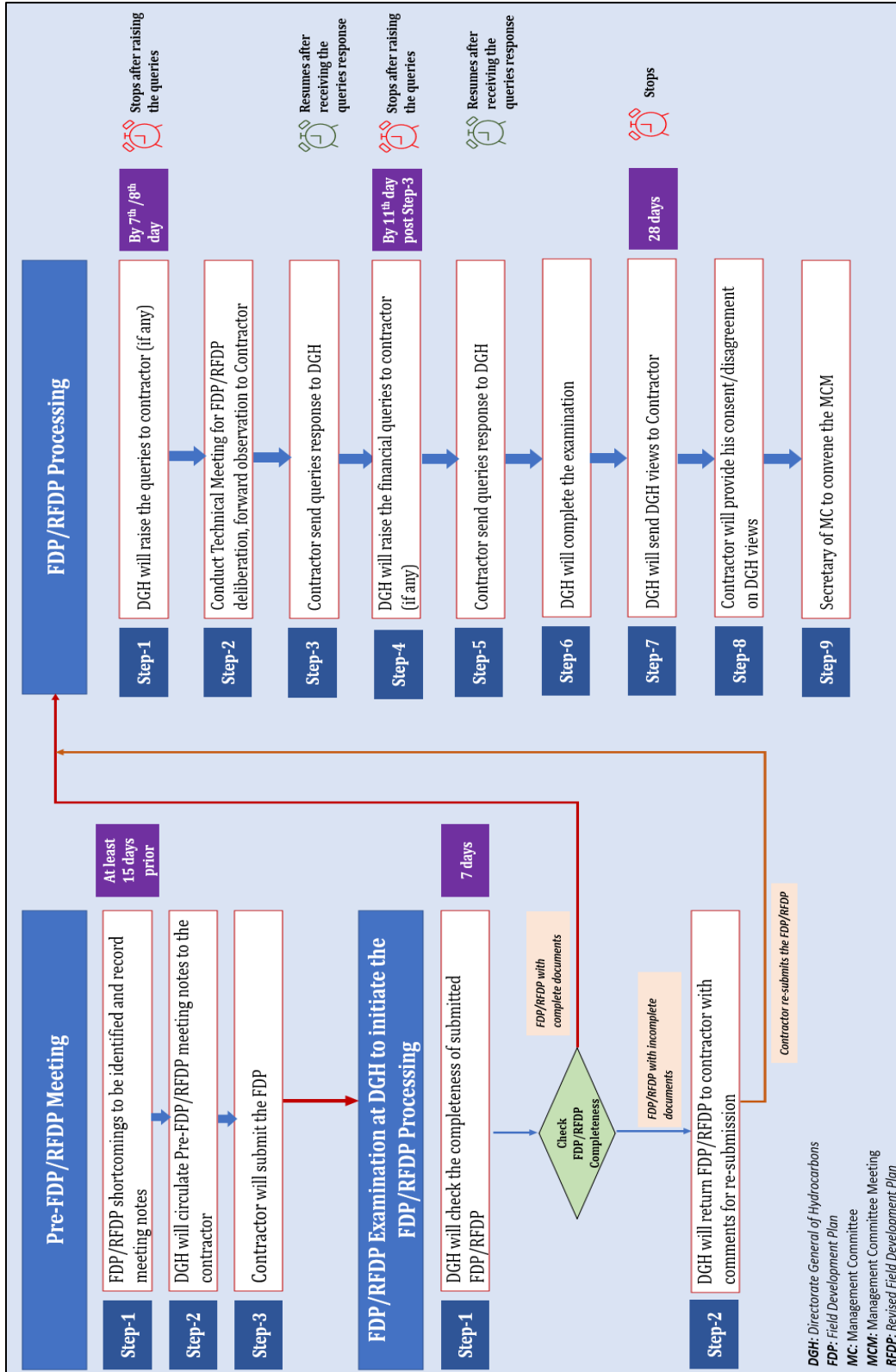
## **5.6. End of Year Statement (audited), Annual Audited Accounts and accounting procedure**

- a.** Annual statement as per DGH prescribed format duly audited in accordance with the relevant PSC article and section of appendix C of the PSC.
- b.** To be provided as per relevant PSC article and section 5,6,7,8,9 etc. of appendix C of the PSC.

# ANNEXURES



## Annexure I: FDP/RFDP Processing Flow



## Annexure II: FDP/RFDP Checklist

Please find the below FDP/RFDP Checklist to ensure the FDP/RFDP completeness before FDP/RFDP submission in the PSC Management System.

This is an exhaustive checklist although if any other data/information is required by DGH on a case-to-case basis that will be asked to process the FDP/RFDP.

### a) PSC Checklist:

| S.No. | Parameter(s)/Information to be provided   | Remarks |
|-------|---|---------|
| 1     | Appropriate approval taken as per PSC provision/policy, If the reservoir extending beyond contract area   |         |
| 2     | Field Name  |         |
| 3     | Proposed Development Area   |         |
| 4     | Exploration Period Details  |         |
| 5     | Exploration period Extension details  |         |
| 6     | Appraisal Period Details  |         |
| 7     | Appraisal Period Extension details  |         |
| 8     | Discovery Type  |         |
| 9     | DOC Submission Date   |         |
| 10    | DOC Review Date   |         |
| 11    | DOC MCR if DOC submission date is on or before 28th February 2020 otherwise please upload self-certified DOC if DOC is submitted after 28th February 2020. (This is as per the MoPNG office memorandum dated 28th February 2020 for self-certification processes) |         |
| 12    | Justification if there are any major changes in FDP from reviewed DoC   |         |
| 13    | FDP submission Date as per PSC  |         |
| 14    | Extension Availed for FDP submission  |         |
| 15    | LD payment details with PSC/Policy provision under which extension granted  |         |

**b) G&G Checklist:**

| S.No. | Parameter(s)/Information to be provided  | Prescribed Format | Remarks |
|-------|--|-------------------|---------|
| 1     | Is the Declaration of Commerciality (DoC) submitted to DGH   |                   |         |
| 2     | Carried out any appraisal activity after review of DoC   |                   |         |
| 3     | Is there any change in input data sets, adopted methodology and volumetric assessment post review of DoC   |                   |         |
| 4     | Information regarding wells in the contract area (block) with well name, surface latitude, surface longitude, subsurface latitude, subsurface longitude, drilled depth(meter), status (oil, gas, oil+gas or abandoned) | Excel             |         |
| 5     | Scaled base map showing all drilled wells, operational area with pipelines and production facilities   |                   |         |
| 6     | Seismic 2D and/or 3D data with quantum, nature, vintage and coverage polygon coordinates   | Excel             |         |
| 7     | Scaled seismic coverage map (2D and/or 3D) vis-à-vis operational and proposed development area   |                   |         |
| 8     | Nature of seismic/ well datasets used in the FDP like amplitude, attributes, inversion, velocity, time-depth relationship  | Excel             |         |
| 9     | Wells used in the FDP and also those new proposed  | Excel             |         |
| 10    | Total number of reservoirs envisaged and specify the ones considered for the FDP   | Excel             |         |
| 11    | Scaled representative well log section showing the reservoir zones, suitably annotated with legend - one well per sheet  |                   |         |
| 12    | Scaled base map showing maximum limit of reservoir extent for all reservoirs suitably annotated and legibly superimposed   |                   |         |
| 13    | Well-wise and reservoir zone-wise petrophysical summation table showing zone details, petrophysical parameters and hydrocarbon pore thickness  | Excel             |         |
| 14    | Reservoirs with average depth(meter), nature of fluid, fluid limit, average porosity, water saturation, oil inplace and gas inplace  | Excel             |         |
| 15    | Scaled top structure map, superimposed with gross thickness and drilled/ proposed wells, all suitably annotated with legend - one reservoir per sheet  |                   |         |
| 16    | Scaled top structure map, superimposed with net pay and drilled/ proposed wells, all suitably annotated with legend - one reservoir per sheet  |                   |         |

| S.No. | Parameter(s)/Information to be provided  | Prescribed Format                                       | Remarks |
|-------|--|---|---------|
| 17    | <p>Approach used for volumetric estimation has been provided including below parameters:</p> <ul style="list-style-type: none"> <li>• Approach used</li> <li>• Estimation approach</li> <li>• Has the uncertainty analysis been carried out while estimating the inplace in case of Map based or 3D geo cellular?</li> <li>• List out the parameters considered for uncertainty analysis</li> <li>• Has the sensitivity analysis of uncertainty parameters been carried out?</li> <li>• Reasons provided if uncertainty analysis or/and sensitivity analysis have not been carried out?</li> </ul> |   |         |
| 18    | Well Completion Report   |   |         |
| 19    | Formation Evaluation Report  |   |         |
| 20    | Well Deviation Survey Data for Inclined Wells  |   |         |
| 21    | Well-Wise Raw Logs (Both Basic and Advanced)   | PDF, LAS and DLIS                                       |         |
| 22    | Reports of Advanced Logs   |   |         |
| 23    | Well-Wise and Reservoir Zone wise Formation Tester Reports   | PDF and Excel   |         |
| 24    | Well-Wise Processed Logs   | PDF and LAS   |         |
| 25    | Well Test Report   |   |         |
| 26    | Well Wise General Data Like Well Course, Drilled Depth, Kelly Bush, Formation/Marker Top Depth In Meter  | Excel   |         |
| 27    | 2d Seismic Data  | SEG-Y   |         |
| 28    | 3d Seismic Cube in Pstm/Psdm (Time and Depth)  | SEG-Y   |         |
| 29    | All Seismic Horizons Interpreted   | ASCII   |         |
| 30    | All faults/ discontinuities interpreted  | Petrel-compliant  |         |
| 31    | All seismic attribute maps   | ASCII   |         |
| 32    | Velocity model   | SEG-Y and ASCII   |         |
| 33    | Seismic inversion cube (if used)   | SEG-Y   |         |
| 34    | Seismic inversion cross-plots (if used)  | PDF and Excel   |         |
| 35    | AVO/AVA analysis (if used)   |   |         |
| 36    | <p>For map-based volumetric approach, placed an index note on the approach.<br/>Submitted reservoir-wise maps like top structure, gross thickness, net thickness, porosity, water saturation, correlations panels and net pay.<br/>Justify if any such map is skipped.</p>   | All maps in ASCII format and note/ justification in PDF |         |

| S.No. | Parameter(s)/Information to be provided   | Prescribed Format  | Remarks |
|-------|---|--|---------|
| 37    | <p>For model-based volumetric approach, placed an index note on the approach.</p> <p>Submitted geo-cellular model complete with input data of seismic, wells and reference polygons, along with all internal calculations/ workflows and volumetric cases completely preserved.</p> <p>Justify if any modeling step is skipped.</p> | <p>Submit model in Petrel or Petrel-compatible format and note/ justification in PDF</p> |         |
| 38    | <p>Brief note on geology of the area describing tectonics, depositional environment, stratigraphy, reservoir development and petroleum system with particular reference to Indian and/or global analogy</p>   |  |         |
| 39    | <p>Reports of core studies/ special core analysis, petrographic/ sedimentological/ bio-stratigraphic studies or the like if any</p>   |  |         |

**c) Reservoir Checklist:**

| S.No. | Parameter(s)/Information to be provided  | Remarks |
|-------|--|---------|
| 1     | <p>Conventional Well test/DST/EWT details</p> <p>(Well Name, Well No., Well Location, Date of well test., Duration of well test, Drilled depth of the well, No. of hydrocarbon interesting zones with geological age/formation, Zone and perforated interval tested, FTHP, STHP, BHP, Choke size, Oil rate, Water cut, Gas rate, Separator Pressure, Separator Temperature, Presence of H<sub>2</sub>S or CO<sub>2</sub>, Presence of Inert gas, Presence of sand indication, Attach well fluid analysis report, Well Test Report, Any additional information related to Conventional Well Test/MDT/DST/EWT)</p> |         |
| 2     | <p>Routine PVT Studies</p> <p>(Attach PVT study which should include the following- Reservoir fluid composition, Physical recombination (if separator samples), Constant Volume Depletion, Constant Composition Expansion (CCE), Differential Liberation (DL), Viscosity, Separator tests)</p>   |         |
| 3     | <p>Special PVT Studies</p> <p>(Attach PVT study which should include the following- Phase Diagram, EOS (multi-component fluid characterization for compositional fluid), Slim-tube test, Swelling test etc.)</p>   |         |
| 4     | <p>Routine Core Analysis</p> <p>(Attach core analysis report which should include the following- XRD, Bulk porosity, Effective porosity, Permeability, Water saturation, Oil Saturation, etc.)</p>   |         |
| 5     | <p>Special Core Analysis</p> <p>(Attach report which should include the following- Relative Permeability- Oil-Water, Gas-Water and Gas-Oil relative permeability data using fresh representative cores (Plugs should be selected to represent the reservoir rock types), Drainage Capillary Pressure (Plugs should be selected to represent the reservoir rock types))</p>   |         |
| 6     | <p>Any other special lab studies carried out</p>   |         |
| 7     | <p>Simulation Studies details</p> <p>(Commonly used Industry standard software namely, Petrel/ Petrel RE, Eclipse, CMG, VIP, MBal, FORGAS, OFM, Kappa, PanSystem, Prosper, PipeSim etc. are recommended for Reservoir Engineering &amp; Petroleum Engineering Studies)</p>   |         |
| 8     | <p>Production Profile details</p>  |         |
| 9     | <p>Methodology adopted for preparation of the production profile</p>   |         |

| S.No. | Parameter(s)/Information to be provided   | Remarks |
|-------|---|---------|
| 10    | Action plan for maximisation of recovery<br><br>(Evaluate all the different techniques/ technologies/ processes, under the umbrella of Improved Oil Recovery (IOR) and Enhanced Oil Recovery (EOR) (similarly for gas reservoirs), with the overarching objective of having a structured plan to be implemented over field life (either from start or in mid-course) which intends to extract maximum possible hydrocarbons from the target reservoirs. ) |         |
| 11    | Proforma for submission of information on Oil/Gas Inplace and Reserves/Resources  |         |
| 12    | Techno-economic analysis (In support of Reserves/Resources)   |         |

**General Remarks**

- 1)The Operator should maintain consistent units for oil and gas volumes, flowrates and pressures throughout the RFDP document.
- 2)The most important numbers (for example, in the executive summary or conclusion part), the volumes and flowrates should be mentioned in Barrels and pressure in psi as per international standards and conversion rate should be clearly mentioned. (No need to convert entire document in barrels).
- 3)Production profiles should be submitted in tabular as well as graphical formats.
- 4)Well-wise Production profiles should have time, flowrates, cumulative production all in the same table
- 5)Field wise production profiles should have all data mentioned in Point 4 above and number of wells along with time at which they are expected to come online.

**d) Drilling Checklist:**

| S.No. | Parameter(s)/Information to be provided   | Remarks |
|-------|---|---------|
| 1     | Number of wells: (proposed to be drilled as new or re-entry)  |         |
| 2     | Variance w.r.t. number of wells (if any) from previously submitted at the time of DOC   |         |
| 3     | In case of RFDP-Variance w.r.t. number of wells (if any) from previous approved FDP   |         |
| 4     | Measures envisaged to overcome the challenges faced in previously drilled/offset wells (if Applicable)  |         |
| 5     | Confirmation on adherence of statutory guidelines (Oil Industry Safety Directorate, Directorate General of Mines Safety, etc.) and creation of site restoration fund  |         |
| 6     | WCR(s) complete in all respect of the previously drilled well(s) to be submitted  |         |
| 7     | Drilling data to be submitted separately for each new well proposed<br><br>(Proposed Well Summary (Well Name, Type, Category, KOP, Length of Horizontal Section, Type & Capacity of Rig, Tentative Depth, Water Depth, Completion, Planned Drilling days, Timeline), Well deviation plan, Schematic for the proposed well, Tentative Casing Policy, Tentative Cementing Policy, Tentative Mud Policy) |         |
| 8     | Drilling data to be submitted separately for each re-entry well proposed<br><br>(Proposed Well Summary (Well Name, Type, Category, KOP, Length of Horizontal Section, Actual Depth, Water Depth), Casing Policy, Present status of the existing well from drilling point of view, Details of job to be carried out in this Re-entry/Sidetrack Well )  |         |



**e) HSE Checklist:**

| S.No. | Parameter(s)/Information to be provided   | Remarks |
|-------|---|---------|
| 1     | Environment clearance from MoEFCC   |         |
| 2     | Effluents emission details (Solid/liquid/gaseous)   |         |
| 3     | Corrosion mitigation for all surface & subsurface equipment and pipelines   |         |
| 4     | Handling, processing and disposal of Drilling Fluid & Drill Cuttings  |         |
| 5     | Handling, processing and disposal of Produced Water   |         |
| 6     | Flare system  |         |
| 7     | Safety controls including fire mitigation measures and personal protective equipment                                |         |
| 8     | Blow out prevention (BOP) installation details  |         |
| 9     | Disaster management plan  |         |
| 10    | Safety Drills plan  |         |
| 11    | Environment audit   |         |
| 12    | Safety certifications   |         |
| 13    | Oil spill containment measures  |         |
| 14    | Gas blow out control measures   |         |
| 15    | H2S leakage prevention & Control  |         |
| 16    | Firefighting measures   |         |
| 17    | Medical facility availability and it's details  |         |
| 18    | Site Evacuation Procedures  |         |
| 19    | Emergency Transport details - air/road/water  |         |
| 20    | Offshore personnel safety training sea survival/ helicopter underwater escape training)                             |         |
| 21    | Onshore logistics safety through speed management, spark buster/flame arrestor, road safety training for the driver |         |

**f) CF Checklist:**

| S.No. | Parameter(s)/Information to be provided   | Remarks |
|-------|---|---------|
| 1     | Year wise Profile (Production, Sales, unavoidable losses, Internal consumption etc. separately) for Crude Oil, Condensate (in bbls & MTs) and Natural Gas (in MMSCM & MMBTU)  |         |
| 2     | Whether cost in relation to Exploration, Appraisal and Development (Capital Cost) is provided with yearly bifurcations  |         |
| 3     | Capital cost allocation done in Development Area, for common facilities, wherever applicable, is to be provided with details of assumptions made for the same   |         |
| 4     | Please confirm that the facilities or capital equipment are not shared with other Blocks/Contract Areas. If shared, please confirm if the provided cost is the allocated cost to the concerned contract area only. Also, provide the detailed working of the appropriate allocation/distribution done between the contract areas. |         |
| 5     | In case installed facilities for processing/transportation of third parties are to be used, the detailed cost should be provided along with basis of assumptions.   |         |
| 6     | Please confirm if the delivery point is inside the contract area.   |         |
| 7     | Total Production Cost (Opex) year-wise including Statutory levies/Insurance   |         |
| 8     | Abandonment Cost as per SRFS1999 and SRG2018/2021 and amended thereof   |         |
| 9     | Price of all the products as per the PSC/Gol notifications and circulars and assumptions considered   |         |
| 10    | Discounting factors to determine NPV (if Any)   |         |
| 11    | Inflation factor (if Any)   |         |
| 12    | Sensitivity Analysis  |         |
| 13    | Any relevant financial assumption taken   |         |

## Annexure III

| Sr. No. | Description   | 2P/OIIP/STOIP (MMbbl) /GIIP (Bscm) Field/ Reservoir   | 2P Reserves MMBbl (O+ OEG) | Required/ Preferred  |
|---------|---|---|----------------------------|--|
| 1.      | <p>a. Decline Curve Analysis (DCA): Well wise reserves estimate of existing wells &amp; total reservoir based on past sustained performance and extending the DCA parameters on new development wells in 2P STOIP area.</p> <p><b>(Not applicable in case of 1<sup>st</sup> time/Initial development)</b></p> <p>b. Material Balance Studies (using well model preferred) and FORGAS &amp; P/Z vs. Gp (for gas reservoirs) is to be performed in conjunction with DCA.</p> <p>The above studies need to be supported by Bubble Maps. <b>Maximum three new development wells per reservoir/hydro-dynamically connected reservoirs in the field can be considered based on these studies provided there is an improvement in Exploitation Index &amp; Recovery Factor; otherwise Sr. No. 3 is to be followed.</b></p> | <p><b>Oil: &lt;80</b><br/><b>Gas: &lt;5</b></p>       |                            | <p>Required/<br/>(Sr. No. 2&amp;3 Preferred but not Binding)</p> <p>(1a. is not applicable for Initial Development Case)</p> |
| 2.      | <p>2D Geological Maps based 3D-3Phase Reservoir Model, History Matched (in new reservoir there will be no history) 3D-3Phase Numerical Simulation Study &amp; Forecast for reservoir/ hydrodynamically connected reservoirs.</p>  | <p><b>Oil: 80 to 120</b><br/><b>Gas: 5 to 7.5</b></p> |                            | <p>Required /<br/>(Sr. No. 3 Preferred but not Binding)</p>  |
| 3.      | <p>Full Field Geo-Cellular Model (FFGM), Full Field Reservoir Model (FFRM), History Matched (in new reservoir there will be no history) 3D-3Phase Numerical Simulation Study &amp; Forecast for reservoir/ hydro-dynamically connected reservoirs.</p> <p>The above statements assumes that:</p> <ul style="list-style-type: none"> <li>• FFRM scale-up is valid and preserves the pore volume, internal architecture, and the effects of heterogeneity.</li> <li>• Aquifer influx and gas cap size are modeled correctly.</li> <li>• PVT properties are characterized and represented correctly.</li> <li>• SCAL data is used to enhance and validate model predictions, where applicable.</li> <li>• There are no errors in reported production history.</li> </ul>   | <p><b>Oil : &gt;120</b><br/><b>Gas :&gt;7.5</b></p>   |                            | <p>Required</p>  |

| Sr. No. | Description   | 2P/OIIP/STOIP (MMbbl) /GIIP (Bscm) Field/ Reservoir | 2P Reserves MMBbl (O+ OEG) | Required/ Preferred |
|---------|---|---|----------------------------|---------------------|
| 4.      | For offshore semi-deep, deep & ultradeep-water fields, new and redevelopment of the reservoir will be strictly based: Full Field Geo-Cellular Model (FFGM), Full Field Reservoir Model (FFRM), History Matched (in new reservoir there will be no history) 3D-3Phase Numerical Simulation Study & Forecast for reservoir/ hydro-dynamically connected reservoirs. | --  | --                         | Required            |

**Note:**

- i. Industry standard softwares commonly used namely, Petrel/ Petrel RE, Eclipse, CMG, VIP, MBal, FORGAS, OFM, Kappa, PanSystem, Prosper, PipeSim etc. are recommended for Reservoir Engineering & Petroleum Engineering Studies.
- ii. All input data relating to above studies including for FFGM and FFRM, History Matched & Forecast models should be made available to DGH.
- iii. All Reservoir Engineering Works performed for respective field are required to be submitted to DGH.