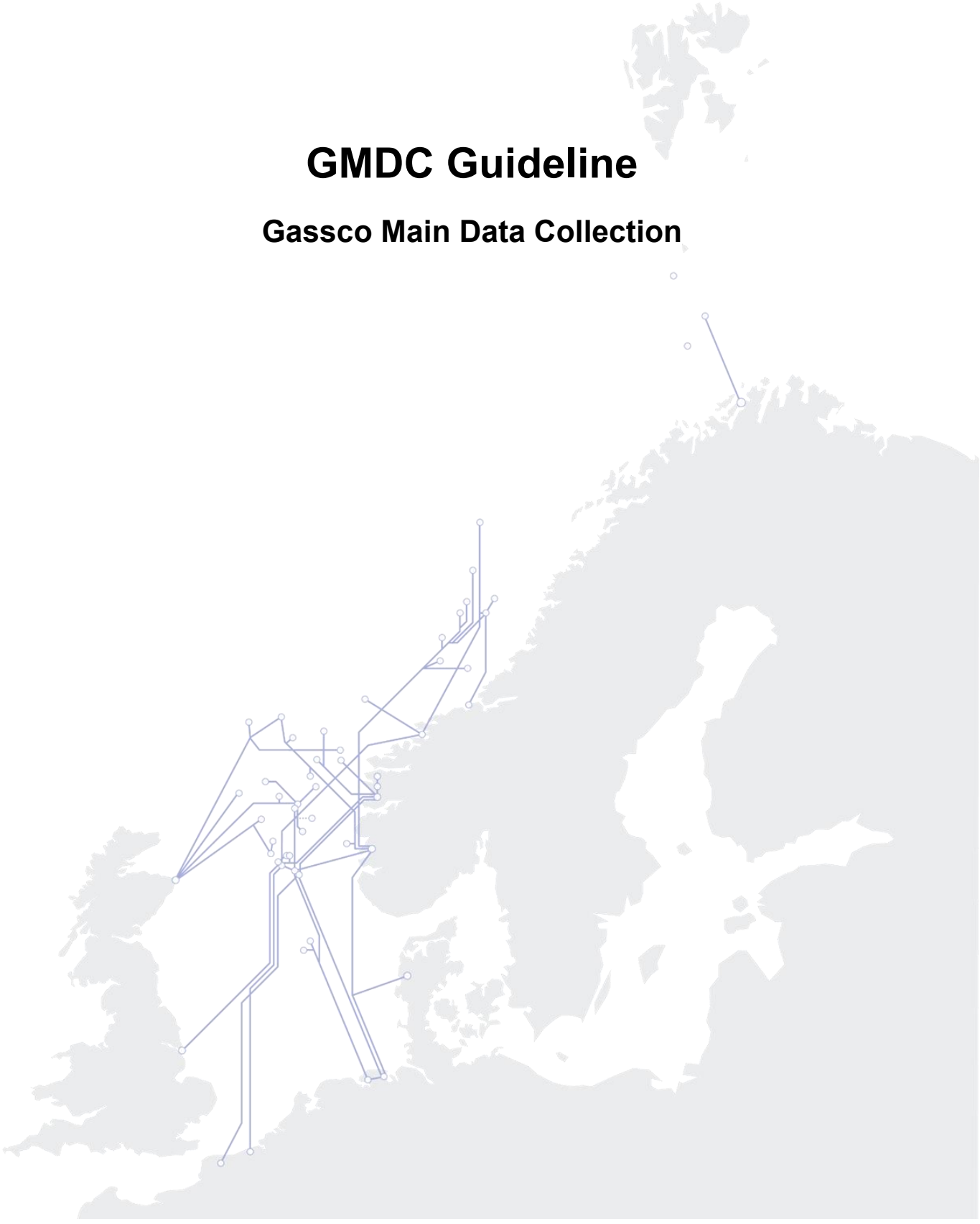
GASSCO

GMDC Guideline

Gassco Main Data Collection



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1. Introduction

1.1 Purpose of the Gassco Main Data Collection (GMDC)

The Gassco Main Data Collection (GMDC) is an annual data collection process coordinated by Gassco towards field operators on the Norwegian Continental Shelf.

According to the Petroleum Regulations, Chapter 9 § 66A, Gassco has the authority to receive necessary information from field operators in order to ensure integrated operation and further development of the upstream gas pipeline network and associated facilities. Under this regulation, field operators are obliged to inform Gassco as soon as it is identified that a need for gas transportation or processing capacity may arise, including outside the regular annual planning cycles.

The purpose of GMDC is to provide Gassco with a consistent, forward-looking and quality-assured dataset that forms the basis for planning, analysis and decision-making related to the operation and development of the Norwegian gas transport and processing system.

GMDC is specifically designed to support Gassco's special operator responsibilities. Data reported through GMDC is used as key input to:

- Field development architect evaluations
- Assessment of capacity needs in the booking round process
- Process and shipment planning at Kårstø, Kollsnes and Nyhamna
- Development of Transport plan
- Other analyses related to system robustness, gas quality handling and future infrastructure needs.

The GMDC process is coordinated in time with the Norwegian Offshore Directorate's (NOD's) reporting for the Revised National Budget (RNB). The reporting deadlines for the current year can be found on the websites of Gassco or NOD. Some data reported to the Directorate shall also be reported to Gassco. Details on format and validation rules for common data can be found in NOD's General Guidelines for RNB.

All fields and discoveries on the Norwegian Continental Shelf that have natural gas and may require gas transportation or processing capacity are required to report data to Gassco through GMDC.

This guideline explains the context, principles and priorities of GMDC reporting. GMDC data shall be reported by the field operators through the Collabor8 solution provided by Offshore Norge. Detailed data definitions, allowed values and validation rules are provided as an attachment provided in Appendices.

2. Scope and responsibilities

2.1 Scope of GMDC reporting

The Gassco Main Data Collection (GMDC) covers all fields and discoveries on the Norwegian Continental Shelf that contain natural gas and may require gas transportation and/or processing capacity.

GMDC reporting applies to both producing assets and assets in earlier phases of maturity, including fields and discoveries where gas export is not yet decided, but where future transport or processing needs may arise. This includes assets with reported volumes in resource classes RC0-3, RC4, RC5, RC7 and/or RC8[1]. Projects classified in higher resource classes, such as discoveries reported in RC7, are inherently less

[1] RC8 is only reported to Gassco if the field or discovery also has reported volumes in lower resource classes.

mature than projects in lower resource classes. Therefore, the level of detail, accuracy, and documentation required in the reported data is lower for higher resource classes.

GMDC typically represents the first structured interface between new gas resources and Gassco. Early reporting through GMDC supports timely dialogue, improved system planning and early identification of potential constraints or development needs in the gas transport and processing infrastructure.

The scope of GMDC includes, but is not limited to:

- Annual production and delivery forecast
- Expected maximum daily deliveries (EMDD)
- Gas volumes and composition
- Volumes and composition for condensate to Kårstø
- Key assumptions related to development concepts, start-up timing and export solutions.

2.2 Responsibilities of the field operators

The field operators are responsible for reporting data to GMDC that represents their best available estimates at the time of reporting. The data shall be based on current knowledge, approved plans where applicable, and realistic assumptions, and shall reflect both expected values and associated uncertainty.

Early-phase projects and concepts shall be reported to the extent necessary to provide Gassco with an understanding of potential future transport and processing needs.

2.3 Responsibilities of Gassco and communication outside the GMDC process

Gassco is responsible for coordinating the GMDC process and for performing quality checks, consistency reviews and consolidation of the data reported by the field operators.

Data reported through GMDC is used by Gassco as input to analyses and planning related to operation and development of the gas transport and processing system. GMDC reporting does not constitute approval of development concepts or project decisions.

The GMDC process does not replace direct dialogue between field operators and Gassco. Changes or new information that arise outside the annual GMDC reporting, such as new gas discoveries, major changes in development concepts or timing, or early indicators of future capacity needs, shall be communicated to Gassco through relevant channels as appropriate.

3. Key characteristics of the GMDC dataset

The GMDC dataset consists of a comprehensive set of variables describing future gas and condensate volumes, capacity, timing, composition and underlying assumptions. Rich gas and dry gas on the Norwegian Continental Shelf and condensate to Kårstø are included.

Detailed variable definitions and validation rules are provided in the associated Appendices.

This chapter summarises the main characteristics of the dataset to support a common understanding of what the GMDC data represents and how it is structured.

3.1 Gas volumes and gas production profiles

A substantial part of the GMDC dataset describes expected future gas volumes and production profiles and how these are expected to develop over time. This forms the basis for system-level planning and assessments.

We expect that changes in the reported volume profiles compared to previous reporting are clearly explained, as both the level and timing of volumes are critical for system-level assessment.

Expected Maximum Daily Delivery (EMDD)
Expected Maximum Daily Delivery (EMDD) is the most important capacity-defining variable in the GMDC dataset and a key input to several Gassco processes.

EMDD represents the expected maximum volume of gas that can be delivered over a sustained period (~30 days) under normal operating conditions. It shall reflect realistic limitations related to reservoir performance, wells, processing capacity and export solutions.

Short-term peaks or exceptional operating conditions shall not be reflected. Correct interpretation of EMDD therefore depends on clear and transparent description of the assumptions and limiting factors that define the reported value.

The full and formal definition of EMDD is provided in Gassco's Booking manual.

Annual forecasts and long-term profiles
Annual gas profile forecasts describe how volumes are expected to develop throughout the field's lifetime. These volumes are reported to the Norwegian Offshore Directorate in accordance with their reporting requirements.

The reported annual volumes and associated uncertainty spans are an important input to GMDC and are used by Gassco to understand the robustness of the reported volume outlook and potential system implications over time. Definitions, methodologies and reporting requirements for annual volumes and uncertainty are governed by the Norwegian Offshore Directorate's guidelines.

3.2 Gas quality, composition and uncertainty

The GMDC dataset includes variables describing gas and condensate quality and composition, as well as associated uncertainty.

These variables are used to assess processing requirements, system robustness and sensitivity to changes in quality. Consistent and realistic reporting of composition and related uncertainty is therefore important, particularly in early phases.

Where uncertainty is significant, transparent description of the basis for the estimates and expected ranges is often more valuable than overly precise numerical values.

3.3 Development assumptions and explanatory information

In addition to numerical volumes and profiles, GMDC includes assumptions and explanatory information related to field development and future changes.

This typically includes information on development concepts, export solutions, start-up timing and explanatory comments that provide context for the reported values.

Such information is essential for interpreting EMDD, annual profiles and changes over time. By including clear explanations of what has changed, and why, Gassco gets a higher level of understanding of the data, and additional requests for clarifications are avoided.

3.4 Additional reporting

In addition to the standard GMDC reporting, Gassco may request additional information for selected fields or discoveries where further detail is required to support system planning, assessments or analyses. Such additional information shall be delivered as part of the GMDC process.

The scope, content and format of any additional reporting will be clarified through direct dialogue between Gassco and the relevant field operator(s). Additional reporting is only required in selected cases where Gassco needs supplementary information.

4. Use of GMDC data in Gassco processes

GMDC data is used by Gassco as a key input to several planning and assessment processes related to the operation and further development of the gas transport and processing system.

While the same GMDC dataset is used across several processes, different types of data are emphasised depending on the purpose of the assessment. The sections below describe the main processes where GMDC data is used, and the types of data that are particularly relevant in each context.

4.1 Field development architect evaluations

Field development architect evaluations are used to assess how field developments or new export solutions may interact with the existing gas transport and processing system.

Gassco's mandate for further development of the upstream gas pipeline network is defined by the Regulations to the Petroleum Act, Chapter 9, §66A. Within this mandate, Gassco performs architect evaluations for development projects that require a gas infrastructure solution, normally prior to concept selection.

In this context, GMDC data is used to assess:

- Alternative export solutions and tie-in options
- Timing of start-up
- Sensitivity to uncertainty in volumes and profiles

The purpose of these evaluations is to support early identification of system implications and enable informed dialogue between Gassco and the field operators. The evaluations provide observations related to relevant gas infrastructure solutions, but do not constitute an assessment of project feasibility or commercial viability.

4.2 Booking Round

The GMDC data will be used by Gassco in annual booking rounds where shippers can reserve transport, processing and quality services on medium-term and long-term contracts. Subsequently, the booking parameters are also used in daily booking processes.

All shippers with Duly Substantiated Reasonable Need (DSRN) as described in the regulations to the Petroleum Act, section 59, have right of access to transport, processing and quality services in the Gassco operated transport systems. Details on how this access is regulated can be found in the Booking Manual.

Prior to the annual booking round Gassco determines Qualified Need for reserving capacity for each shipper with DSRN. The calculations take into account, among other evaluations, the following input from the GMDC process:

- Expected Maximum Daily Delivery (EMDD)
- Dry gas and rich gas compositions
- Condensate Expected Maximum Daily Delivery
- Assumptions

GMDC represents the field operators' reported view of expected future volumes, profiles and assumptions, and forms the basis for Gassco's preparations for the booking rounds. Following the GMDC reporting, and as part of the Booking round preparations, shippers are given the opportunity to provide comments to the field profiles based on their Qualified Need.

Gassco will evaluate input received from the shippers and, where relevant, use this when requesting clarifications or updated information from the field operators. This does not change the role of GMDC as the primary reporting from the field operators.

4.3 Process and Shipment Planning

Process- and shipment planning includes establishing production forecasts and planning shipment activities at the gas processing plants Kårstø, Kollsnes and Nyhamna. The purpose is to supply future NGL prognosis to the shippers and to evaluate expected future utilisation of the plant's constraints over time.

In this context, the following GMDC data, related to rich gas and condensate fields, is particularly relevant:

- Field
- Assumptions
- Annual production forecasts
- Composition

4.4 Transport plan

The annual Transport plan has a long-term perspective (15 years), and is used to assess future needs for gas transport and processing capacity in the gas system. Rich gas and dry gas on the Norwegian Continental Shelf and condensate to Kårstø is included in the Transport plan analyses.

For the Transport plan, particular emphasis is placed on:

- Annual production forecasts
- Expected Maximum Daily Delivery (EMDD)
- Composition and quality parameters
- Uncertainty
- Assumptions

GMDC data is used to identify trends, evaluate the robustness of the existing infrastructure and assess potential needs for additional capacity or services, modifications or operational measures over time.

5. GMDC reporting process - overview

This chapter provides a brief overview of how the GMDC reporting process is carried out. The purpose is to describe the main steps and interactions in the process, rather than to provide detailed reporting instructions.

5.1 Annual GMDC reporting cycle

GMDC is conducted as an annual process following the time schedule of the Revised National Budget (RNB) reporting process, which is managed by the Norwegian Offshore Directorate (NOD).

The main reporting phase takes place in the autumn, with the operators' deadline in October.

5.2 Reporting channel (Collabor8 RNB)

GMDC data shall be reported in Collabor8 RNB.

Collabor8 RNB is a digital reporting portal developed and provided by Offshore Norge for data exchange and communication between industry and authorities in the RNB and GMDC processes. This guideline does not provide instructions on how to use the solution.

5.3 Roles and interactions

The GMDC reporting process is based on interactions between the field operators and Gassco.

- Field operators are responsible for reporting GMDC data based on their best available estimates.
- Gassco coordinates the process, performs quality checks and requests clarifications where needed.

The GMDC process does not replace direct dialogue between the field operators and Gassco. Significant changes or early indications of future capacity needs shall be communicated outside the annual GMDC cycle.

5.4 Reporting, review and feedback

After the initial submission, Gassco performs quality checks and consistency reviews of the reported GMDC data. Where needed, Gassco provides feedback and requests clarification and/or adjusted data.

This interaction is normally performed in several rounds during the main reporting period, including repeated submission and feedback cycles, until the reported data is sufficiently clear, consistent and understood for further use in Gassco's planning and assessment processes.

6. Appendices and references

Detailed reporting requirements and structured content are provided in associated appendices, attachments and supporting material.

6.1 Appendix overview

The Collabor8 RNB solution includes two main elements to be reported to Gassco:

- Gassco data
- Gassco assumptions

These elements are described in detail in Appendix A: Data list and Appendix B: Gassco Assumptions, which constitute the authoritative reference for GMDC reporting requirements.

Gassco data – main elements include:

- Yearly EMDD
- Monthly EMDD for reporting year -1 and the following three gas years
- Gas composition and quality, including Hg, O_2 and water content
- Uncertainty spans for H_2S and CO_2
- Condensate data, including annual forecast, EMDD and composition
- First gas for discoveries

Gassco assumptions include:

- Future project development for discoveries
- Pressure assumptions
- Annual production
- EMDD information
- Gas composition basis
- Uncertainty assumptions
- Gas quality and trace elements
- Field production unavailability due to planned events
- Gas injections during infrastructure shutdowns
- Security of supply

A set of validation rules is applied to the reported GMDC data. These rules are described in detail in Appendix C: Validation rules.

Appendix D: Months to include in monthly EMDD reporting specifies the months for which reporting of monthly EMDD is required.

1.1.1. Appendix A – Data list

The purpose of this appendix is to ensure a common and consistent understanding of the Gassco data. The level of detail and certainty in the reported data is expected to vary between resource classes, but the definitions provided here form a common reference for interpretation across all reporting objects.

The descriptions and definitions in this appendix shall be used as the authoritative basis for reporting and interpretation of Gassco data.

1.1.2. Appendix B – Gassco Assumptions

This appendix provides an overview of the assumptions and explanatory information requested by Gassco as part of the GMDC reporting.

The Gassco assumptions complement the numerical data reported in Appendix A and are intended to provide context for interpretation of volumes, production profiles, EMDD and reported changes over time. The assumptions are used as input to several Gassco analyses and evaluations and are particularly important for understanding maturity, limitations and future development of fields and discoveries.

The descriptions in this appendix shall be used as the authoritative basis for reporting and interpretation of Gassco assumptions.

1.1.3. Appendix C – Validation rules

This appendix provides an overview of the validation rules applied to Gassco data in the GMDC reporting through the Collabor8 RNB solution. The validation rules are used to ensure data completeness, internal consistency and basic data quality at the time of submission.

The purpose of the validation rules is to support consistent reporting and to identify potential inconsistencies or missing information at an early stage. Validation rules are not intended to replace professional judgement or field-specific considerations, and compliance with a validation rule does not in itself imply that the reported data is complete or suitable for downstream analyses.

The validation rules are categorised as:

- Error: Must be fulfilled in order to submit the data
- Warning: Trigger a warning message and require an explanatory comment, but do not prevent submission

The validation rules described in this appendix constitute the authoritative reference for validation of Gassco data in GMDC.

1.1.4. Appendix D – Monthly EMDD reporting

This appendix specifies the months for which reporting of monthly EMDD is required.

6.2 External references

GMDC reporting is coordinated with reporting to the Revised National Budget (RNB) managed by the Norwegian Offshore Directorate. Relevant external guidelines and requirements, such as RNB reporting guidelines, applies where relevant.