

PROPOSED OUTLINE FOR THE UPSTREAM OIL AND GAS PROTOCOL

About this Draft

This will be a short introduction explaining that the Upstream Oil and Gas (UOG) protocol is designed as an appendix to TCR's *General Reporting Protocol* (GRP), and is intended to be used as a supplement to the GRP for Members from the upstream oil and gas sector. To facilitate its use in conjunction with the GRP, the UOG protocol largely follows the same organization as the GRP. Each section of the UOG protocol provides additional clarifications or reporting requirements for Members beyond those provided in the corresponding section of the GRP. If further clarifications or reporting requirements are not needed for a particular GRP section, the UOG protocol simply refers the Member back to the corresponding GRP section.

Abbreviations and Acronyms

Will be expanded from the corresponding GRP section to include abbreviations and acronyms relevant to this industry sector.

PART I: INTRODUCTION

This section will provide a description of the types of organizations that are required to use the UOG protocol in conjunction with the GRP to meet TCR's reporting requirements. It will also define the specific emissions sources addressed in the UOG protocol, by defining the boundary between E&P and other O&G activities such as refining and transportation. The UOG protocol is an appendix of the GRP, and as such it defines the additional reporting requirements and options for Members reporting to TCR. It also provides clarification of some of the GRP concepts and requirements and how they should be applied to the unique situations and circumstances arising in this sector. The UOG protocol should be used in conjunction with the GRP.

This section will also explain that the oil transportation sector (pipelines, trucks and crude oil tankers) will, pending Steering Committee approval, added to the protocol, as well as straddle plants in the natural gas transportation sector.

PART II: DETERMINING WHAT YOU SHOULD REPORT

Chapter 1: Introduction

Refer to GRP

1.1 GHG Accounting and Reporting Principles

Refer to GRP

1.2 Origin of The Registry's GRP

Refer to GRP

1.3 Reporting Requirements

Refer to GRP

1.4 Annual Emissions Reporting

Refer to GRP

Chapter 2: Geographic Boundaries

Refer to GRP

2.1 Required Geographic Boundaries

Refer to GRP but also should address the issue of assigning emissions from offshore sources, and should explain how such assignments should be made (e.g., based on onshore regulatory jurisdiction)? It should also address Oil and gas basins and that they can cross State and (in at least one case) International borders.

2.2 *Optional Reporting: Worldwide Emissions*

Refer to GRP

Chapter 3: Gases to Be Reported

Refer to GRP

3.1 Required Reporting of All Six Internationally-Recognized Greenhouse Gases

Refer to GRP

3.2 *Optional Reporting: Additional Greenhouse Gases*

Refer to GRP

Chapter 4: Organizational Boundaries

Refer to GRP with added text covering and overview of org boundary issues for oil & gas (we addressed this in the original Task 1 report).

4.1 Two Approaches to Organizational Boundaries: Control and Equity Share

Refer to GRP with added text covering control & equity share arrangements common in O&G (again – this was addressed in Task 1 original report).

4.2 Option 1: Reporting Based on Both Equity Share and Control

Refer to GRP with added text covering O&G situations

4.3 Option 2: Reporting Using the Control Consolidation

Refer to GRP with added text covering O&G situations

4.4 Corporate Reporting: Parent Companies & Subsidiaries

Refer to GRP

4.5 Government Agency Reporting

Refer to GRP

4.6 Leased Facilities/Vehicles and Landlord/Tenant Arrangements

This section should clarify that, in cases where the mineral rights are leased rather than owned by the O&G producer, responsibility for reporting the emissions associated with venting, leakage and flaring of the gas lies with the leaseholder, not the owner. This section should also mention that some oil and gas operators do not own the mineral rights (owned by another company or foreign government) and how these situations are covered from a TCR reporting perspective.

4.7 Examples of Control versus Equity Share Reporting

We suggest that one or two new examples of the kinds of layered ownership and leasing patterns that can occur in the O&G sector be added in this section, in order to clarify how these complex arrangements should be treated. As one possible example, suppose that Member A of a consortium has been assigned operational control, and Member B of the consortium is planning to report its equity share of the emissions from the consortium. Suppose further that Member A is using a combination of (1) its own equipment, (2) equipment leased by Member B to Member A, (3) equipment contributed directly to the consortium by Member B without a lease and with Member B retaining 100 percent ownership rights, and (4) equipment leased by another company to work the field. In such a situation, should Member B report its equity share of the consortium's total emissions, regardless of the ownership and leasing patterns for the individual equipment used by the consortium? Or do separate rules apply to each emitting asset depending on the asset's relationship to Member B?

Furthermore, how might the reporting rules and options change if, instead of Member A controlling the consortium's operations, a separate operating company jointly owned by the consortium members were set up to work the oil field? It should be emphasized that the answers to these questions are not clear; we would look to the TWG and TCR for guidance.

Chapter 5: Operational Boundaries

Refer to GRP

5.1 Required Emission Reporting

Depending on how the issue of reporting contractor emissions is resolved by the TWG, this section *may* need to address the required reporting of either (1) all contractor emissions or (2) drilling contractor emissions.

5.2 Direct Emissions: Scope 1

Refer to GRP

5.3 Indirect Emissions: Scope 2

Refer to GRP

5.4 Reporting Emissions from Biomass Combustion

Refer to GRP

5.5 Scope 3 Emissions

Depending on how the issue of reporting contractor emissions is resolved by the TWG, this section *may* need to address the required reporting of either (1) all

contractor emissions or (2) drilling contractor emissions. If so, TCR’s rationale for requiring the reporting of these emissions should be included in the discussion.

In addition, we recommend that this section provide a list of examples of Scope 3 emissions tailored to this industry sector.

Chapter 6: Facility-Level Reporting

Refer to GRP

6.1 Required Facility-Level Reporting

Refer to GRP

6.2 Defining Facility Boundaries

This section may need to define new facility boundaries for E&P operations. It appeared that, in Santa Fe, the TWG was moving towards consensus on defining the facility as being at the oil or gas field level. However, we will need to request a final decision from the TWG on how to define the facility boundary. This section should also define the specific emission sources to be included within the defined facility boundary, as well as the sources to be excluded and treated as separate facilities in their own right.

6.3 Optional Aggregation of Emissions from Certain Types of Facilities

Currently in this section of the GRP, Members are provided the option of aggregating oil and gas wells to the state or province level. If the TWG decides instead to specify a common facility definition for this sector (e.g., based on fields or basins), then it may no longer be necessary to provide the aggregation option to Members, and the TWG may want us to clarify that the aggregation option has been rescinded. Alternatively, it might be preferable to update the GRP itself by removing “oil and gas wells” from the list of facilities for which aggregation is allowed.

6.4 Categorizing Mobile Source Emissions

This section should further clarify the distinction, made in the GRP, between mobile ground-based sources that operate inside vs. outside facility boundaries. To do this, the section will need to refer back to the sector facility definition provided in Section 6.3.

6.5 *Optional Reporting*: Unit Level Data

Refer to GRP

6.6 Aggregation of Data to Entity Level

Refer to GRP

Chapter 7: Establishing and Updating the Base Year

Refer to GRP

7.1 Required Base Year

Refer to GRP

7.2 Updating Your Base Year Emissions

Depending on how the issue of reporting contractor emissions is resolved by the TWG, this section *may* need to clarify that, for this industry sector, base year adjustments are *not* triggered by the insourcing of previously outsourced activities (since these outsourced activities will be included in the base year report if the TWG decides that the reporting of contractor emissions should be mandatory).

7.3 *Optional Reporting*: Updating Intervening Years

Refer to GRP

Chapter 8: Transitional Reporting (*Optional*)

Refer to GRP

8.1 Reporting Transitional Data

Refer to GRP

8.2 Minimum Reporting Requirements for Transitional Reporting

Depending on how the issue of reporting contractor emissions is resolved by the TWG, it may be necessary to clarify that the reporting of Scope 3 contractor emissions is optional for transitional reporting.

8.3 Public Disclosure of Transitional Data

Refer to GRP

Chapter 9: Historical Reporting (*Optional*)

Refer to GRP

9.1 Reporting Historical Data

Refer to GRP

9.2 Minimum Reporting Requirements for Historical Data

Depending on how the issue of reporting contractor emissions is resolved by the TWG, it may be necessary to clarify that the reporting of Scope 3 contractor emissions is optional for historical data reporting.

9.3 Importing Historical Data

Refer to GRP

9.4 Public Disclosure of Historical Data

Refer to GRP

PART III: QUANTIFYING YOUR EMISSIONS

Chapter 10: Introduction to Quantifying Your Emissions

Refer to GRP

Chapter 11: Simplified Estimation Methods

Depending on how the issue of reporting contractor emissions is resolved by the TWG, this section *may* need to expand the 5% threshold for the use of simplified methods to represent 5% of the total of Scope 1, Scope 2, and Scope 3 contractor emissions. In addition, it may be necessary to exempt Scope 3 emissions, along with flaring emissions and emissions from small combustion devices, from the 5% threshold when the data needed to apply GRP-approved methods are not available.

Chapter 12: Direct Emissions from Stationary Combustion

Refer to GRP with notes mentioning the types of combustion devices associated with E&P and that have been covered in the Task 1 and 2 reports. We will also need to reference the new chapters (23 and 24) covering unique combustion devices not covered adequately in the GRP – flaring, hydrogen units, coker upgraders. We should also mention here that additional chapters for fugitive and process emissions are included (22-24).

Table 1.- Cross Reference of Oil and Gas Source Categories

Source Category	
Well testing (flaring)	Chapter 23
Exploratory drilling engines	GRP
Well testing and completion activities (non-venting)	GRP
Well testing and Completion venting	Chapter 22
Drill mud degassing	Chapter 22
Drill rig engines	GRP
Workover rig engines	GRP
Miscellaneous I.C engines	GRP
Glycol dehydrators	Chapter 22
Flares/incinerators	Chapter 23
Heavy-duty trucks	GRP
Medium-duty trucks	GRP
Light-duty trucks	GRP
Light-duty automobiles	GRP
Offshore Support and Seismic Vessels (OSV)	GRP
Helicopters (Offshore)	GRP
Artificial lift engines (pumpjacks)	GRP
Oil well tanks	Chapter 21
Oil well truck loading	Chapter 22
Pneumatic devices	Chapter 21
Oil well fugitives	Chapter 21
Chemical injection pumps	Chapter 21
Vapor recovery unit (VRU) engines	GRP
Heaters	GRP
Boilers	GRP

Source Category	
Cogen Units (EOR)	GRP
Miscellaneous Engines	GRP
Imported electricity	GRP
Process heat/steam imports	GRP
Salt-water disposal (SWD) engines	GRP
Gas actuated pumps	Chapter 21
Landfarms	Unclear if any GHG emissions with this one
Central power plant turbines (offshore)	GRP
Central power plant IC Engines (offshore)	GRP
Converted Diesel ship engines (offshore)	GRP
Tankers in Floating Production, Storage, and Offloading Systems – FPSO (Offshore)	Chapter 22
Coke gasification unit	Chapter 24
Hydrogen production unit	Chapter 24
Primary upgrading coke unit	Chapter 24
Gas well condensate tanks	Chapter 21
Gas well, NGL plant truck loading	Chapter 22
Gas well fugitives	Chapter 21
Compressor start-ups and shutdowns	Chapter 21
Amine units	Chapter 22
Well blowdowns	Chapter 22
Compressor blowdowns	Chapter 22
Lateral/wellhead compressor engines	GRP
CBM pump engines	GRP
Gas well and plant truck loading	Chapter 22
Gas pipeline fugitives	Chapter 21
Water treatment facilities (evaporative ponds)	Chapter 21
Gas processing plant fugitives	Chapter 21
Acid gas removal systems	Chapter 22
Boilers/Steam generators	GRP
Gas turbines	GRP
Vessel blowdowns	Chapter 22
Pipeline blowdowns	Chapter 22
Haulers and dumptrucks	GRP
Bulldozers	GRP
Scrapers	GRP
Blasthole Drills	Chapter 22? (term is unclear)
Explosive loading trucks	GRP
Front end loaders	GRP
Hydraulic excavators	GRP
Mobile cranes, forklifts, maintenance and supply trucks, road graders, etc.	GRP

12.1 Measurement Using Continuous Emissions Monitoring System Data

Refer to GRP

12.2 Calculating Emissions from Stationary Combustion Using Fuel Use Data

Refer to GRP

12.3 Allocating Emissions from Combined Heat and Power (Optional)

Refer to GRP

12.4 Example: Direct Emissions from Stationary Combustion

Refer to GRP

Chapter 13: Direct Emissions from Mobile Combustion

Refer to GRP

13.1 Calculating Carbon Dioxide Emissions from Mobile Combustion

Refer to GRP

13.2 Calculating Methane and Nitrous Oxide Emissions from Mobile Combustion

Refer to GRP

13.3 Example: Direct Emissions from Mobile Combustion

Refer to GRP

Chapter 14: Indirect Emissions from Electricity Use

Refer to GRP

14.1 Calculating Indirect Emissions from Electricity Use

Refer to GRP

14.2 Example: Indirect Emissions from Electricity Use

Chapter 15: Indirect Emissions from Imported Steam, District Heating, Cooling, and Electricity from a Combined Heat and Power Plant

15.1 Calculating Indirect Emissions from Heat and Power Produced at a CHP Facility

Refer to GRP with a note that this will also apply to CHP facilities operated by one entity and transferred to another for steam flood and cyclic steam wells

15.2 Calculating Indirect Emissions from Imported Steam or District Heating from a Conventional Boiler Plant

Refer to GRP with a note that this will also apply to steam generators operated by one entity and transferred to another for steam flood and cyclic steam wells

15.3 Calculating Indirect Emissions from District Cooling

Refer to GRP

15.4 Example: Indirect Emissions from District Heating

Refer to GRP

Chapter 16: Direct Fugitive Emissions from the Use of Refrigeration and Air Conditioning Equipment

Refer to GRP

16.1 Calculating Direct Fugitive Emissions from Refrigeration Systems

Refer to GRP

16.2 Example: Direct Fugitive Emissions from Refrigeration Systems

Refer to GRP

PART IV: REPORTING YOUR EMISSIONS

Chapter 17: Completing Your Annual Emissions Report

Refer to GRP

17.1 Additional Reporting Requirements

Refer to GRP

17.2 *Optional Data*

A fuller discussion of efficiency metrics will occur here. The original Task 1 report concluded the following and received no objections:

In conclusion, the most common efficiency metric that is currently reported is GHG emissions on a unit of production basis. A number of companies are also starting to provide regional information to compare this particular metric. This metric will have some uses when compared with comparable fields in the same region or producing basin. Within the same basin, there is usually uniformity in important parameters such as oil vs. gas, oil quality, and depth. When a sufficient number of companies are reporting on this basis within a producing region, it would be useful to then compare these on a field age basis. Older fields within a basin would typically be expected to be more energy and emissions intensive on a unit of production basis due to declining oil/gas volumes, secondary recovery operations, or increased compression needs.

Chapter 18: Reporting Your Data Using CRIS

Refer to GRP

18.1 CRIS Overview

Refer to GRP

18.2 Help with CRIS

Refer to GRP

Chapter 19: Third-Party Verification

Refer to GRP

19.1 Background: The Purpose of The Registry’s Verification Process

Refer to GRP

19.2 Activities To Be Completed by the Member in Preparation for Verification

Depending on whether the TWG feels the standard COI rules in the GVP need to be expanded to address the complex ownership and operating patterns characterizing the O&G sector, this section may need to address separate or expanded COI rules specific to the O&G sector. For example, if a verifier is hired to verify the emissions of the operating company for a consortium, are the verifier’s relationships with other consortium members relevant to the determination of case-specific COI? If so, the procedure for determining COI in such cases would need to be explained, either here or in a separate verification document.

19.3 Batch Verification Option

Refer to GRP

19.4 Verification Concepts

Depending on how the issue of reporting contractor emissions is resolved by the TWG, this section may need to clarify that Scope 3 contractor emissions must be verified, and that the 5% materiality threshold should be applied to Scope 1 and 3 emissions *combined* (not separately to each scope).

Also, depending on how the issue of defining facility boundaries is resolved, this section may need to clarify what is meant by site visits in the context of the O&G sector.

19.5 Verification Cycle

Refer to GRP

19.6 Conducting Verification Activities

Refer to GRP

19.7 Activities To Be Completed After the Verification Body Reports Its Findings

Refer to GRP

19.8 Unverified Emission Reports

Refer to GRP

Chapter 20: Public Emission Reports

Refer to GRP

20.1 Required Public Disclosure

Refer to GRP

20.2 Confidential Business Information

Depending on how the issue of reporting contractor emissions is resolved by the TWG, this section may need to be expanded to include an explicit option for the exemption of *contractor data only* from the public release of facility-level data. However, the section should also explicitly state that contractor emissions will be released at the entity and state/province levels even if an exemption is granted.

Additional Chapters

Note: We anticipate using the estimation methodologies already provided in the GRP for sources that are common between the O&G sector and other industries. Methodologies for these common sources, which include general stationary combustion, mobile sources (on and off-road), purchased electricity, and heat and steam, are provided in Chapters 12 through 15 of the GRP; the UOG protocol will refer readers back to these GRP chapters for these sources. For emissions sources that are unique to O&G, the following additional chapters are proposed for inclusion in the UOG protocol. Each of the following chapters and sections will provide estimation methodologies and examples, to be selected during Task 3.

Chapter 21: Fugitive Emissions

The sources listed in Chapters 21 and 22 are based on the Task 1 and 2 reports. We will, as part of Task 3, cross reference to the list of 24 fugitive and process sources that EPA proposed for reporting in their draft rule. This list is as follows: acid gas removal (AGR) vent stacks, blowdown vent stacks, centrifugal compressor dry seals, centrifugal compressor wet seals, compressor fugitive emissions, compressor wet seal degassing vents, dehydrator vent stacks, flare stacks, liquefied natural gas import and export facilities fugitive emissions, liquefied natural gas storage facilities fugitive emissions, natural gas driven pneumatic pumps, natural gas driven pneumatic manual valve actuator devices, natural gas driven pneumatic valve bleed devices, non-pneumatic pumps, offshore platform pipeline fugitive emissions, open-ended lines (oels), pump seals, platform fugitive emissions, processing facility fugitive emissions, reciprocating compressor rod packing, storage station fugitive emissions, storage tanks, storage wellhead fugitive emissions, transmission station fugitive emissions.

After discussion with TWG, and after our initial evaluation is completed, we will revise the source categories listed below to groupings that have common emission calculation procedures and considerations.

21.1 Flashing and Working/Breathing Losses from Tanks

21.2 Pneumatic Devices and Pumps Operating with Natural Gas

21.3 Wellhead and Facility Fugitive Losses

21.4 Pipeline Fugitive Losses

21.5 Surface Collection Ponds

21.6 Compressor Station Gas/Gas Plant Fugitive Losses

Chapter 22: Vented Emissions

22.1 Amine Plant Process Venting

22.2 Dehydrators

22.3 Well Testing and Completions

22.4 Well Blowdowns

22.5 Vessel and Facility Upsets/Blowdowns and Compressor Engine Start-Ups and Shutdowns

22.6 Truck, Tanker, Rail Loading

22.7 Pipeline blowdowns and pigging

Chapter 23: Flaring Emissions

Chapter 24: Oil Sands and Oil Shale specific sources

24.1 Tar Sands Upgrader

24.2 Hydrogen Unit

24.3 Flue Gas Desulphurization

24.4 Oil Sands Mines and Ponds Emissions

Glossary of Terms

Will be expanded to include terms relevant to this industry sector.