

1. **Project title and project number:** Methane Management in Extractive Industries

2. **Expected timing/ duration:** To be determined.

3. **Objective of the project:** The objective of the project is to explore methane management methods and technologies along the value chain in key energy-related extractive industries, namely coal, natural gas and oil, for the purpose of determining and promoting the most efficient methods of measuring, reporting, and verification (MRV) of methane emissions in these industries, and developing best practices for preventing such emissions.

4. **Brief summary of the project:**

Project will be divided into three components:

- Coal,
- Upstream (i.e. exploration and production) Oil and Gas, and Downstream (i.e. processing through distribution) Gas, and
- Downstream Oil.

I. Each project's component will be developed in three stage:

A. The first phase will focus on defining, understanding, and determining the magnitude of problems related to methane emissions in a given industry. The above-mentioned goals will be achieved through the following activities:

- review of existing information regarding measuring, monitoring and reporting methane emissions from a given industry in the UNECE member States, including national regulations and information from governments, academia, and NGOs,
- compilation of data on the volume of methane emissions from a given industry in the UNECE region,
- assessment of the actual volumes of methane emissions along the value chain of a given industry in the UNECE member States,
- determination of the most important sources of emissions along the value chain of a given industry.

B. The second stage will build upon the information gathered in the first stage and will comprise of compiling, analysing and comparing obtained data for the purpose of:

- assessing the techniques and methods used for MRV of methane emissions in a given industry in the UNECE member States,
- identification of best practices for MRV methane emissions in a given industry, and
- developing a comprehensive best practice guidance document for MRV methane emissions in a given industry.

C. The third phase, drawing from the experiences obtained during the two previous stages as well as from the given industry's experience in addressing methane leaks, will develop a comprehensive best practice guidance document for leak prevention and abatement of methane emissions in a given industry.

II. Once all three stages are completed the project will enter in its second phase.

This phase will consist of two stages:

A. The first stage building on the results of the initial phase of the project will focus on opportunities to monetize methane emissions abatement, and on developing a replicable business model in this regard for each of the extractive industries in question.

B. The second, final stage of the project will consist of the following activities:

- dissemination of the products developed throughout the projects (i.e. of (1) best practices for measuring, monitoring, reporting and verifying methane emissions in extractive industries; (2) best practices for prevention and abatement of methane emissions in extractive industries; (3) business models allowing to monetize methane emissions abatement);
- development of a model training unit, and delivering demand-driven capacity-building workshops on measuring, monitoring, reporting, verifying, and preventing methane emissions.

5. **Means to achieve the goals of the project:** The objective of the project will be achieved through the following activities:

- review of available data on methane emissions in UNECE member States,
- review of studies developed by: the UNECE Groups of Experts, the Global Methane Initiative (GMI), the United States Environmental Protection Agency (US EPA), the World Petroleum Council (WPC), the World Coal Association (WCA), the Climate & Clean Air Coalition (CCAC), The World Bank's Global Gas Flaring Reduction Initiative (GGFR), International Gas Union (IGU), and other relevant studies by academia and NGOs,
- engagement with companies operating in extractive industries for the purpose of obtaining data on techniques and methods used for measuring, monitoring and reporting methane emissions,
- design and dissemination among companies operating in extractive industries of a survey on techniques and methods used for measuring, monitoring and reporting methane emissions,
- compilation, assessment and comparison of obtained data,
- development and publication of intermediate studies comprising of:
 1. relevant data on actual volumes of methane emissions in each given industry in the UNECE region, and
 2. techniques and methods used for MRV in each given industry in the UNECE region.

6. **Expected results of the project:**

EA1. Improved understanding of methane emissions in extractive industries.

EA1.1 examination and evaluation of the techniques and methods used for MRV of methane emissions in extractive industries in the UNECE member States,

EA1.2 assessment of volumes of methane emissions along the value chain in extractive industries in the UNECE region.

EA2. Improvement of techniques and methods for MRV of methane emissions in extractive industries in the UNECE member States.

EA2.1. Improved understanding of strategies, techniques and methods for MRV of methane emissions in extractive industries in the UNECE member States,

EA2.2 Development of best practices for MRV of methane emissions in extractive industries,

EA2.3 Dissemination of best practices for MRV of methane emissions in extractive industries, and facilitation of their implementation.

EA3. Reduction of methane emissions from extractive industries

EA3.1. Identification of strategies, techniques and methods for prevention and abatement of methane emissions in extractive industries in the UNECE member States,

EA2.2 Development of best practices for prevention and abatement of methane emissions in extractive industries,

EA3.1 Dissemination of best practices for prevention and abatement of methane emissions in extractive industries, and facilitation of their implementation.

7. **Mandate:** At its twenty-fourth session held in Geneva on 18–20 November 2015, the Committee on Sustainable Energy (CSE) requested the establishment of a task force under CSE with representatives of the Groups of Expert on Gas and Coal Mine Methane and other stakeholders to undertake further work to assess baseline, benchmarking and scale of current methane emissions in those industries, with the aim of giving clear guidance for report back at its twenty-fifth session (see §44 of ECE/ENERGY/99).

8. **Implementing body:** The project will be implemented by the Groups of Experts on Gas, and on Coal Mine Methane as well as by a newly created Task Force on Methane Management in Extractive Industries, which will coordinate the project.

The Task Force will be run by a small group of four highly qualified professionals. It will be organized in the following way:

- one person will serve as the chair of the task force and a coordinator of its work,
- one person will be tasked with oversight of each of the project components (3 persons in total),
- the UNECE Group of Experts on Coal Mine Methane together with WCA will help with the work on emissions in the Coal sector,
- the UNECE Group of Experts on Gas together with the US EPA, GMI and IGU will contribute to the work on leakages in the Upstream Oil and Gas, and Downstream Gas sector; it will also draw on information from GGFR while approaching the flaring issue,
- the work on leakages in the Downstream Oil industry will be coordinated by the WPC,
- The UNECE secretariat will provide the Task Force with the necessary administrative and management support.

9. **Target group and beneficiaries of the project:** Policy-makers, regulators, as well as companies and professionals operating in extractive industries in the UNECE member States

10. **Justification of project and its relationship to the programme of work:** Task Force on Methane Management in Extractive Industries is mandated by the UNECE Committee on Sustainable Energy to undertake further work to assess baseline, benchmarking and scale of current methane emissions in extractive industries (see point 5).

Task Force on Methane Management in Extractive Industries

The work of the Task Force on Methane Management in Extractive Industries will draw from the work of the Groups of Experts on Coal Mine Methane, and on Gas. By compiling the results obtained by these two bodies with additional work done by UNECE external partners, the Task Force on Methane Management in Extractive Industries will produce a coordinated, comprehensive and solutions-oriented set of best practices for methane management in extractive industries, with a focus on establishing a baseline, benchmarking and scale of current methane emissions in those industries, as well as on providing a clear guidance to policymakers, regulators and practitioners operating in the field in question.

Group of Experts on Coal Mine Methane

The principal area of work of the Group of Experts on Coal Mine Methane, which is to be actively involved in the work of the Task Force on Methane Management in Extractive Industries, is to develop and disseminate best practice for effective drainage, recovery and usage of coal mine methane. At its twenty-fourth session held Geneva on 18–20 November 2015, CSE suggested that the Group of Experts on Coal Mine Methane contribute, within the scope of its expertise and subject to availability of extra-budgetary resources, to preparation of a study on standards and technologies for MRV of methane emissions at each stage of production, processing, storage, transmission, distribution, and use of fossil fuels, whether coal, oil, or natural gas, and on appropriate mechanisms for mobilizing needed resources for deployment of methods to reduce methane emissions (see §44 and §45 of ECE/ENERGY/99).

Group of Experts on Gas

At its twenty-fourth session held Geneva on 18–20 November 2015, CSE suggested that the Group of Experts on Gas contribute, within the scope of its expertise and subject to availability of extra-budgetary resources, to preparation of a study on standards and technologies for MRV of methane emissions at each stage of production, processing, storage, transmission, distribution, and use of fossil fuels, whether coal, oil, or natural gas, and on appropriate mechanisms for mobilizing needed resources for deployment of methods to reduce methane emissions (see §44 and §45 of ECE/ENERGY/99).

The Task Force on Reducing Gas Leaks in the Gas Value Chain, which is to be actively involved in the work of the Task Force on Methane Management in Extractive Industries, was established by the Group of Experts on Gas at its first session held in April 2014 (see §30 (a) ECE/ENERGY/GE.8/2014/2) for the purpose of:

- preparing a systematic assessment of gas leakage rates across the full value chain, i.e., in gas production, transport, distribution, and use in ECE member States, including a review of approaches to measuring, monitoring, and reporting leakage rates,
- reviewing the range of gas technology, pipelines, and infrastructure construction and maintenance techniques deployed across the ECE region, with special focus on the best and worst performers, to explain the differences in leakage rates and to identify opportunities for improvement,

- reviewing the different options and techniques that exist and costs associated with reducing leakages throughout the gas chain,
- preparing Best Practice Guidance in Reducing Gas Leakage Rates throughout the gas chain, taking into account, when implementing it, the local conditions for use by industry, regulators, and policy-setters.

The Group of Experts on Gas decided that the work of Task Force on Reducing Gas Leaks in the Gas Value Chain will be undertaken by a task force of experts in collaboration with international organizations such as the International Energy Agency (IEA), national governments of the ECE member States and all other relevant stakeholders, including organizations of producers, transporters and distributors of gas such as IGU, and associations of system operators, and academia, and will be based both on any available sources including on statistics from the system of national accounts that are reported through national and international organizations (such as IEA or the World Bank) and on collaboration with producers and transport and distribution system operators and regulators, and, if needed, on a questionnaire.