

**Approved
by KazMunayGas
Management Board
Protocol No. 15
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EMISSION MANAGEMENT POLICY KAZMUNAYGAS GROUP

Environmental protection and emission inventory procedures, as well as regulations on mitigation and management of material potential health and environmental risks and adverse effect from emissions are needed to successfully deliver the KazMunayGas Health, Safety and Environment Policy.

Goal of the Emission Management Policy (hereinafter – the Policy) of KazMunayGas Group (hereinafter – KMG/Company) is effective emission management focused on environmental mitigation and sustainable development enhancement so as to execute the KMG HSE Policy and KMG Development Strategy.

Main objectives of the Policy are:

- 1) to provide emission management principles to be used throughout the Company;
- 2) to enhance green production and reduce emissions;
- 3) sustainable use of natural resources, oil and gas production operations based on zero routine gas flaring and leakage prevention.

Emission management is based on the following **8 ‘Environment’ principles:**

- 1) strict observance with legislative requirements and other commitments of the Company;
- 2) compliance with the established pollutant emission standards and limits, greenhouse gas emission quotas;
- 3) detailed roles and responsibilities prescribed in job descriptions, high competence, training and awareness;
- 4) regular emissions accounting, inventory and monitoring;
- 5) zero routine gas flaring in hydrocarbon production;
- 6) greenhouse gas emissions and carbon footprint reduction activities,
- 7) carbon assets management,
- 8) continuous emission management enhancement.

PRINCIPLE 1. Compliance with the legislative requirements and other commitments of the Company.

1.1. The Company shall comply with the requirements of international standards and agreements to which the Republic of Kazakhstan is a party, emission regulations of the Republic of Kazakhstan, as well as observe all legal operations restrictions provided by environment permits and permit conditions.

1.2. The Company shall comply with the requirements of KMG internal documents, obligations under memoranda and agreements, as well as voluntary commitments under international initiatives.

1.3. To comply with the applicable legal requirements and other obligations, the Company shall ensure:

- Legislative requirements and other obligations are identified, systematically updated and appropriate modifications are closely monitored;
- Information on legal requirements and other Company's obligations are communicated to KMG employees and contractors.

PRINCIPLE 2. Compliance with established pollutant emission standards and limits, greenhouse gas emission quotas.

2.1. The Company's facilities, including wells, shall be placed, constructed and reconstructed only after a positive expert opinion on the environmental impact evaluation and emission permits issuance.

2.2. The Company shall comply with the pollutant emission standards determined in the evaluation of the planned activities environmental impact or in the existing enterprises documents (designed maximum permissible emissions), as well as observe the limits established by emission permits.

2.3. The company shall continuously monitor and control the compliance with the emission standards, and permit conditions.

2.4. The Company shall comply with the greenhouse gas emission quotas, which implies the greenhouse gas emissions reduction or quotas purchase.

PRINCIPLE 3. Detailed roles and responsibilities description, competence, training and awareness.

3.1. The Company's job descriptions shall provide detailed roles and responsibilities of employees of all departments involved in pollutants and greenhouse gases emission, as well as gas flaring management.

3.2. The Company shall continuously improve the expertise of responsible employees and take regular part in workshops, conferences and forums.

PRINCIPLE 4. Regular emissions accounting, inventory and monitoring.

4.1. The Company shall ensure completeness, consistency, transparency and accurateness of the emission monitoring and reporting.

4.2. The Company shall inventory all sources of greenhouse gas emissions, prepare a document package (verified greenhouse gas inventory report, verified plant passport and validated monitoring plan) to obtain greenhouse gas quotas and shall duly submit it to the relevant environmental protection authority.

4.3. The Company shall inventory all pollutant emissions, get emission limits approvals and emission permits within the statutory period, as well as observe the nature use conditions.

4.4. The Company shall find the Carbon Footprint of the entire Company and its products (services), include direct (Level 1) and indirect (Level 2-3) greenhouse gas emissions into calculations as appropriate.

4.5. Emission reports, forecasting and scenario modelling shall be based on automated data collection and calculation.

PRINCIPLE 5. Zero routine gas flaring in hydrocarbon production.

5.1. Hydrocarbon production plants shall be designed and constructed by the Company based on zero routine gas flaring or gas leaks principle, unless this requirement is not feasible on technical, environmental, safety or commercial reasons. New flares should be equipped with the on-line control system and based on smokeless technology.

5.2 The Company shall stop the existing routine gas flaring or leaks, unless this requirement is not feasible on technical, environmental, safety or commercial reasons.

5.3. The Company shall annually draw up and submit for approval the Development and Sour Gas Processing Programs and take permits for sour gas flaring in a timely manner.

5.4. The Company shall not exceed the approved gas flaring limits and takes flaring reduction activities in a timely manner.

5.5. KMG supports the global initiative of the World Bank, Zero Routine Flaring by 2030. KMG is drawing up a Zero Routine Flaring Roadmap. Business planning shall include the roadmap drawing up activities.

PRINCIPLE 6. Emissions and carbon footprint reduction activities

6.1. The Company shall take actions to reduce emissions and the Carbon Footprint, in particular, introduce sustainable production and consumption models, efficient resources use and climate-friendly technologies with low greenhouse gas emissions.

6.2. The Company's emission reduction activities shall consider the following critical aspects: reduction of power, heat and steam losses as well as equipment operation time, introduction of energy-saving technologies, alternative energy sources, vehicles conversion to gas fuel, optimization of the compressor stations operation modes, etc.

6.3. The Company has developed and implemented the energy management system to track and improve energy efficiency, which reduces emissions per unit of output. The Company shall calculate gas emission volume after energy efficiency activities as approved in the KMG Energy Saving and Energy Efficiency Action Plan.

6.4. The Company shall take activities to prevent production plants from methane leaks, which include survey of methane leaks, floating roof installation at new tank farms, installations of vapour recovery unit, and use of mobile compressor stations for gas pipelines repair operations.

PRINCIPLE 7. Carbon assets management.

7.1. Successful implementation of the Policy that implies a reliable monitoring, reporting and verification mechanism gives cost-effective carbon assets (quotas) operation, including their sale, purchase, and transfer between the plants within the considered period. The following elements shall be provided by the Company for successful carbon assets (quotas) management:

- expert management and technical personnel;
- greenhouse gas emissions inventory as well as external and internal reporting systems;
- Data archiving and storage systems;
- Interface with the state cadastre and registry;
- Interface with a financial trading platform.

PRINCIPLE 8. Continuous emission management enhancement.

8.1. The Company shall take all necessary actions to draw up and implement policies and activities to mitigate climate change effects and adapt to them.

8.2. The Company has specified and adopted emission management processes, approved internal emission management regulatory documents and operating instructions.

8.3. The Company shall assess, prevent or minimize any possible damage from climate change.

8.4. The Company shall invest into the advanced innovative technologies focused on operations and products efficiency and sustainability enhancement.

8.5. The Company shall support international cooperation and climate change initiatives and join them.

This Policy shall apply to the entire Company. The management of the Company is responsible for emission management resources and processes.