Annex

Information submitted as required by Article 21 of Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 establishing a framework of measures to strengthen the European zero net technology ecosystem and amending Regulation (EU) 2018/1724 (the "Net Zero Industry Act" or "NZIA")

The National Regulatory Authority for Mining, Petroleum and Geological Storage of Carbon Dioxide (NRAMPGS), designated as the competent authority for implementing Directive 2009/31/EC on the geological storage of carbon dioxide (the "CCS Directive") and Directive 94/22/EC on the conditions for granting and using authorizations for the exploration and extraction of hydrocarbons (the "Hydrocarbons Directive"), with attributions for the application of Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 establishing a framework of measures to strengthen the European zero net technology ecosystem and amending Regulation (EU) 2018/1724 (the "Net Zero Industry Act" or "NZIA") and Regulation (EU) 2024/1787 of the European Parliament and of the Council of 13 June 2024 on methane emission reductions in the energy sector and amending Regulation (EU) 2019/942 ("the Methane Regulation"), reaffirms its commitment to supporting Romania's efforts in combating climate change and decarbonizing industry. In this regard, NRAMPGS plays a vital role in enforcing European and national legislation, contributing to the achievement of the climate goals set for 2030 and 2050.

In the context of the entry into force of the Net Zero Industry Act, NRAMPGS has taken significant measures to meet the requirements of Article 21, as shown further. It is important to note that the authority's responsibilities are exclusively focused on the geological storage of CO_2 and do not extend to its capture and transport. Nevertheless, NRAMPGS works closely with other institutions and competent authorities to ensure a coherent legislative and operational framework.

To fulfill the obligations under <u>Article 21, paragraph (1), letter (a)</u> of NZIA, NRAMPGS has published a series of informational materials on its official website¹, including maps and documents on the country's geological structure, petroleum systems, and major CO_2 emission sources. The information originates from public sources and has been rigorously analyzed to exclude classified or economically sensitive data. Among the sources used is the report developed under the CONSENCUS project in 2022, which provides a detailed analysis of CO_2 emission sources from 2020.

Romania maintains an open and favorable approach to the geological storage of carbon dioxide, allowing this activity both onshore and offshore across its entire national territory. This openness is supported by the country's over 150-year tradition in the petroleum industry, which has enabled the accumulation of extensive knowledge about geological formations. In this context, depleted reservoirs and adjacent saline aquifers are considered the most promising

¹ to learn more, access https://www.namr.ro/co2-law/

for the geological storage of CO_2 due to their natural trapping systems and protective layers that could ensure long-term safety.

To support these efforts, NRAMPGS has identified eight key morphostructural units of interest: the Moesian Platform, the Pannonian Depression, the Transylvanian Depression, the Moldavian Platform, the Bârlad Sector of the Scythian Platform, the Black Sea Continental Shelf, the Pre-Carpathian Depression, and the North Dobrogea Orogen. These areas were selected based on their geological characteristics, including depleted reservoirs and adjacent saline aquifers, which are considered proper for CO_2 storage. Interested stakeholders can access data concerning the identified structures upon request, in compliance with the legislation in the field of geological storage of carbon dioxide and in the field of access to the information, including sensitive information.

In accordance with the provisions of <u>Article 21, paragraph (1), letter (b)</u> of NZIA, NRAMPGS has collected and published relevant information on its official website in the section dedicated to the geological storage of CO_2 . This includes data provided by entities that hold or have held authorizations under Directive 94/22/EC of the European Parliament and Council, as well as lists of production sites that have been decommissioned or whose decommissioning has been notified to the competent authority.

To support transparency and accessibility of information, in line with Article 21, paragraph (1), letter (b) of NZIA, NRAMPGS has facilitated access to relevant data by making and keeping the web page <u>https://maphub.net/ccs-ro/stocare-co2</u>. It includes information made available by petroleum agreement titleholders, emphasizing the authority's commitment to collaborating with all stakeholders for the efficient and responsible implementation of CCS projects.

NRAMPGS has actively collaborated with titleholders of petroleum agreements, organizing joint working groups to identify opportunities and improve the related legislative framework. Drawing on the experience of advanced CCS countries and projects implemented in other EU Member States, clear criteria have been established for selecting suitable reservoirs for CO_2 storage. This process has led to the identification of nine reservoirs that have been decommissioned or are in the process of decommissioning and meet the established requirements for geological CO_2 storage, making them candidates for further prospecting and exploration.

It is important to note that, under Romanian petroleum regulations, all data and information concerning petroleum agreements and petroleum blocks cannot be disclosed until a decommissioning decision is issued by NRAMPGS. This is why, access to more information can be granted to interested parties upon request, under the observance of the relevant provisions regarding access to data and information.

Although NRAMPGS holds exclusive responsibilities regarding the geological storage component of CO_2 , the authority has maintained ongoing collaboration with ministries and other relevant institutions responsible for regulating and overseeing the entire CCS value chain. Efforts have been made to improve primary legislation and draft the necessary secondary legislation, as well as to make information required under Article 21, paragraph (2) of NZIA publicly available. However, these collaborations were partially limited last year due to local and parliamentary elections, which resulted in changes to the composition of relevant institutions. Efforts are to be restarted this year in view of finalizing the policy and reporting requirements.

Regarding <u>Article 21, paragraph (2), letter (a) and (b)</u> of NZIA, we inform you that NRAMPGS is aware of several projects in various stages of development on Romanian territory. Romania is already making notable progress in CCS project development. Prominent companies such as OMV Petrom and Holcim have submitted applications for integrated CCS projects through the Innovation Fund, demonstrating the private sector's commitment to these initiatives. While the proposals have not been selected for grant agreement during the last call, we are confident that the projects will move forward, subject to their economic and social feasibility. Operators in the petroleum industry are also actively exploring offshore storage potential. Additionally, concerted efforts from the part of the industry have been deployed in view of increasing public acceptance of geological CO_2 storage projects, including by increasing the level of geological knowledge.

Among the projects previously referred, the full value chain CCS project developed by OMV Petrom and Heidelberg Materials stands as a representative example. The Fieni-Botești project is a major initiative in the field of geological CO_2 storage in Romania. It aims to store approximately 600,000 tons of CO_2 annually in a depleted onshore gas reservoir, with a total estimated capacity of more than 10 million tons. The injection period is expected to last between 15 and 20 years, and was initially planned to start in 2029. However, due to local public perception, as well as to the failure in attracting funding, the project is experiencing delays.

Another flagship CCS project in Romania is the one developed by Holcim, who also applied for a grant through the EU Innovation Fund. The project estimates that 1,2 million tons of CO_2 per year could be captured from multiple sources over a period of 20-25 years, with the minimum storage requirement for Holcim alone being around 25-30 million tons CO_2 . Considering the potential additional CO_2 from third parties, another 20-30 million tons of CO_2 could be captured and stored. The targeted storage site is located near other emitters, providing with an opportunity to maximize the use of the pore space available for storage. Holcim is associated with a petroleum agreement titleholder and intends to store in a depleted reservoir (at a depth around 2200 m). The Holcim plan is to have the CCS project operational by 2030. While works are already in progress, the project is also expected to record delays due to the failure in acquiring financing.

Regarding CO_2 transport, Romania is actively exploring the development of dedicated infrastructure, including the potential reuse of existing pipelines for CO_2 transportation. Preliminary studies highlight the need for expanded capacity to support the anticipated volumes of capture and storage. However, transport infrastructure remains in the planning phase, and details regarding authorization and implementation will be communicated as projects advance.

Pursuant to <u>Article 21, paragraph (2), letter (c)</u>, Romania has adopted and continues to develop national support measures to facilitate the initiation and implementation of CCS projects. The directions for such measures include:

- 1. Financial incentives: By accessing the Modernization Fund and other European mechanisms, Romania supports CCS projects through co-financing. These funds are intended for both infrastructure development and risk mitigation associated with projects.
- 2. Inter-institutional collaborations: NRAMPGS works closely with other ministries and relevant authorities to ensure a favorable legislative and administrative framework for CCS projects. This cooperation includes the development of secondary legislation necessary for regulating cross-border CO₂ transport. NRAMPGS actively participates in the working group on carbon capture, use and storage (CCUS) in Romania, created under the auspices of the Interministerial Committee on Climate Change (CISC), within the Chancellery of the Prime Minister.
- 3. **Promotion of international partnerships:** Romania actively participates in regional and European initiatives to facilitate cross-border CO₂ transport. For instance, energy sector operators are exploring collaboration opportunities with neighboring countries to develop shared transport and storage infrastructure.

In terms of actual policies and measures meant to incentivize CCS deployment in Romania, we refer the following:

- In 2023, the Ministry of Environment, Waters, and Forests released the first draft of Romania's Long-Term Strategy for Reducing Greenhouse Gas Emissions (LTS) for environmental approval and initiation of the screening phase. This strategy anticipates implementing carbon capture, storage, and utilization (CCUS) technologies in the non-metallic minerals industry to achieve at least 50% emissions capture by 2050. It also outlines obligations for CO₂ injection and storage in the oil and gas sector, as mandated by the Net Zero Industry Act. By 2050, under the "Neutral Romania" scenario, 2,583 kt of CO₂ emissions from industries using non-metallic minerals as raw materials are expected to be recovered, while emissions from products replacing ozone-depleting substances are projected to decrease approximately sevenfold compared to 2019 levels;
- The Integrated National Energy and Climate Plan (NECP) 2021-2030 outlines Romania's clear targets for reducing greenhouse gas emissions by 2030 relative to 1990 levels. These include an 87% reduction in the energy sector, a 77% reduction in industry, and a 25% reduction in the waste sector. The Ministry of Energy's analysis for updating the INECP concluded that the development of a full-scale CCS project (capture, transport, and storage) up to first injection requires 6-7 years. Additionally, approximately 62 million tons of CO₂ must be captured annually, with at least 26 million tons from the metallurgical industry and cement and lime production. The estimated transport capacity via pipelines is approximately 16 million tons per year, while geological storage capacity could reach at least 9 million tons per year;
- According to the government program, the Ministry of Energy prioritizes investments in CCS, particularly for heavy industries and coal-fired power plants. These efforts include incentives for adopting advanced technologies and innovative solutions that reduce emissions and environmental impact, contributing to Romania's climate objectives;

 Regarding cross-border CO₂ transport, Romania is exploring options to ensure secure and non-discriminatory access to transport infrastructure for CO₂-capturing entities. This initiative currently under development is essential for integrating Romania into the European storage network and enhancing national capacities through international collaboration.

Regarding <u>Article 21, paragraph (2), letter (d</u>) of NZIA, Romania has defined its national strategy and objectives for CO_2 capture within the framework of the Integrated National Energy and Climate Plan (NECP). The strategy focuses on developing CO_2 capture technologies as an integral part of the transition to climate neutrality by 2050. By 2030, Romania aims to support the implementation of pilot projects and industrial initiatives that demonstrate the feasibility of CCS technologies, with a particular focus on hard-to-decarbonize sectors such as cement, steel, and energy.

Specific objectives include:

- 1. Establishing a legislative and administrative framework that supports CO_2 capture, with an emphasis on streamlining authorization procedures.
- 2. Identifying and promoting capture projects in key industrial sectors.
- 3. Stimulating private investments through financial mechanisms such as the Modernization Fund and other dedicated European funds.

Regarding <u>Article 21, paragraph (2), letter (f)</u> of NZIA, Romania is currently in the planning and evaluation phase of CO_2 transport projects. Studies are underway to determine the necessary transport capacity, considering the anticipated volumes of capture and storage.

CO₂ transport projects include:

- 1. Exploring the potential reuse of existing pipelines for CO_2 transport.
- 2. Developing new dedicated infrastructure, with an estimated capacity of up to 10 million tons of CO_2 per year by 2030, depending on the pace of CCS project implementation.

These initiatives are complemented by efforts to integrate into regional transport networks, enabling better utilization of storage capacities in other Member States.

Romania acknowledges that technical, economic, and legislative challenges remain, but we are determined to make significant progress, as shown throughout this report. As existing projects will reach increased levels of maturity and new projects will be developed, more tangible information will become available in view of reporting. Through sustained efforts and collaboration with European partners, our country is committed to actively contributing to carbon emission reductions and achieving the goal of a climate-neutral economy by 2050.