# THE ROADMAP TO MRV OF GHG EMISSIONS AT THE INSTALLATIONS LEVEL IN ARMENIA

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Implementing provisions of the EU - Armenia Comprehensive and Enhanced Partnership Agreement

Marzena Chodor PhD

EU4Climate

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# Introduction

This report has been prepared to provide guidance to the process of the transposition of the requirements of the Comprehensive and Enhanced Partnership Agreement (CEPA) between the European Union and the Republic of Armenia with regard to establishing a monitoring, reporting, verification and enforcement framework for the Emissions trading directive (ETSD) in Armenia. The assignment has been undertaken as part of the EU4Climate Project, financed by the European Union, implemented in six EU Partner countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) in the period 2018-2022.

The objective of the EU4Climate Project is to contribute to climate change mitigation & adaptation and the development towards a low-emissions and climate-resilient economy in line with the Paris Agreement in the Eastern Partnership (EaP) countries. The project aims to achieve the following results:

**Result 1:** Finalized or updated nationally determined contributions communicated to the UNFCCC;

**Result 2:** Improved inter-institutional awareness and coordination at the political and technical level of the Paris Agreement and the corresponding national commitments;

**Result 3:** Established or strengthened MRV systems, with countries getting on track with Paris Agreement transparency requirements;

**Result 4:** Advanced alignment with the EU climate acquis as provided by bilateral agreements with the EU and in the context of the Energy Community Treaty on climate matters that are not covered by the EU4Energy programme;

**Result 5:** Establishment of concrete sectoral guidelines for the implementation of the Paris Agreement in each of the Eastern Partners;

**Result 6:** Increased mobilization of climate finance;

**Result 7:** Enhanced adaptation planning.

The aim of this assignment is to support Armenia in achieving the result 4 (advanced alignment with the EU climate acquis) and the result 3

(established and strengthened MRV systems) by providing an analysis of the steps that need to be taken to implement elements of the EU ETS in line with the conditions set in a bilateral agreement concluded by Armenia with the European Union, followed by recommendations on the steps that need to be taken in the next 5 to 7 years.

The Republic of Armenia and the European Union are cooperating bilaterally as well as within regional frameworks such as the Eastern Neighbourhood and the Eastern Partnership, and on the international level, in several frameworks such as, among others, the UN Framework Convention on Climate Change where Armenia is part of the Eastern European Group, one of the UN regional groups, jointly with 12 EU member states. To promote this cooperation and take it to the next level, on 24 November 2017 the EU and Armenia signed the Comprehensive and Enhanced Partnership Agreement (CEPA). The CEPA between the European Union and the Republic of Armenia envisages cooperation in a wide variety of sectors including environment, energy, and climate change. On 1 June 2018 provisional application of the Agreement entered into force. One year later the government of Armenia has adopted a CEPA Implementation Roadmap (approved as Decision 666-L of the Prime Minister) which was endorsed at the second meeting of the Armenia-EU Partnership Council on 13 June 2019. The CEPA has been ratified by all the concerned parties[1] by 25 January 2021 and entered into force on 1 March 2021. In Annex IV to the CEPA Chapter 4: Climate Action, under Title V: Other cooperation policies, the Republic of Armenia undertook to gradually approximate its legislation to the following provisions of, among others, the directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community (ETSD).

The CEPA does not envisage a full implementation of the ETSD by Armenia. The country and the EU agreed that Armenia will establish a system for identifying relevant installations and identifying greenhouse gases (Annexes I and II to the ETSD), establish a monitoring, reporting,

[1] The Republic of Armenia and, individually, by all the EU member states.

verification and enforcement systems, and public consultation procedures (Articles 14, 15, 16(1) and 17 of the ETSD), and will set up a competent authority/authorities (CA/CAs) overseeing and implementing these provisions, adopting national legislation that would lead to the transposition of these provisions to the Armenian law. The deadline stipulated by the CEPA for this undertaking has been described as "within 8 years of the entry into force of the CEPA". Taking into account that provision, the deadline for the transposition of the EU acquis elements agreed in the CEPA shall expire on 1 March 2029.

The purpose of this report is to describe steps that need to be taken to complete the transposition listing the necessary steps that need to be taken by the government of Armenia to meet the legally binding CEPA deadline. To facilitate the planning and implementation of the necessary measures the report identifies the concerned stakeholders and describes their roles in the ETSD MRV system.

Chapter I presents the requirements that the provisions of the CEPA bestow on Armenia with regard to the elements of ETSD and the two EU regulations on monitoring, reporting and verification of GHG emissions from industrial installations and on accreditation of verifiers.

Chapters II, III and IV are focussing on the roles of the principal stakeholders and provide recommendations on transposing the relevant provisions.

Chapter II proposes how to identify installations that should be included in the MRV system based on that of the ETSD and outlines the obligations of the operators of installations.

Chapter III describes the functions of the Competent Authority administering the system on behalf of the state and its working relationships with other state organs, the operators, and the accredited verifiers.

The role of the verifiers in the MRV system is described in Chapter IV.

Chapter V contains a description of the proposed steps that need to be taken in order to complete the transposition and initiate the functioning of the MRV system in Armenia in the least disruptive way, indicating those elements that need to be further developed to make that happen.

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# I. CEPA provisions on the MRV of GHG emissions from industrial installations

By signing the CEPA, Armenia has undertaken to set up the MRV and enforcement system reflecting the provisions of the Directive 2003/87/EC (ETSD) and to transpose these provisions into the Armenian legislative and regulatory framework, together with the Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council (MRR) and the Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council (AVR). The ETS Directive is the cornerstone of the EU climate policies and the emissions trading is a key measure in the GHG emission reduction undertaken by the European Union and its Member States. The European carbon market is the first and the largest carbon market globally, even though other regional and even multilateral initiatives are currently operational elsewhere. The objective of the ETS is to limit greenhouse gas emissions in various industrial sectors including energy, and aviation. Currently, the European Parliament is considering the proposal of the European Commission to extend the ETS by incorporating international shipping in a way similar to that of including international and domestic aviation and to set up a separate system for road transport and buildings, for the EU to be able to reach its 2030 NDC target of GHG emissions reduction by at least 55% compared to the 1990 levels.

Since the Republic of Armenia is not an EU candidate country, nor even an association country, the purpose of its agreement with the EU is to provide a special framework to bilateral cooperation with the EU and its member states, to benefit from the EU support to the decarbonization of its economy and to adaptation to climate change as well as, in the future, to continue benefitting from trade and other forms of cooperation with the EU member states, including Georgia, a country aspiring to the EU membership, with traditionally close ties to Armenia, that will have to progressively assume the full EU acquis to become its member.[2] Armenia undertook to also approximate several of its laws and regulations to the EU legal and regulatory framework and this approximation will facilitate bilateral trade and other exchange with Georgia in the future.

[2] The whole body of the European legislative and regulatory framework is known as the acquis communautaire, or acquis (in short). Please, note that Georgia is not at present obliged to adopt the ETS MRV provisions in its Association Agreement with the EU.

The transposition of the ETS MRV and enforcement frameworks to the Armenian legal framework and practice would result in improving data collection and analysis in the bottom-up approach, from the level of industrial installations, contributing to a better reporting of the GHG emissions in Armenia on the national level. Another argument in support of the close implementation of the MRR and the AVR by Armenia are the EU plans to introduce a carbon border adjustment mechanism (CBAM), with reporting requirements from 2023. The European Green Deal envisages that by 2050 the EU will become carbon-neutral. The effort leading to carbon neutrality will be shared between the ETS and non-ETS sectors. However, in order to ensure that the European industry has a level playing field with industry outside of the EU and that carbon emissions are not in fact shifted to other non-EU destinations and then perhaps re-imported with goods, the EU will introduce a carbon border adjustment mechanism. This may in fact impose a comparable carbon price (carbon tax) on imports of goods from countries that are considered lax in their mitigation policies. The institutional readiness and the appropriate legal and regulatory measures in place could be a bonus to the companies exporting their products to the EU as Armenia could set up measures equivalent to the carbon border adjustment measures (CBAM) planned by the EU and demand an exemption from the CBAM for its companies, or the companies could use verified emissions reports to address the requirements of the CBAM. The approximation of Armenian laws to those of the EU may also bring in additional investment from the EU member states.

At present it is not clear, however, how many industrial installations would be included in the MRV obligation and the identification of these installations should be among the first steps to be undertaken by the government to facilitate timely implementation of the CEPA obligations with regard to the ETS MRV and its enforcement.

The transposition shall be completed within 8 years from entry into force of the CEPA in the European Union and its Member States on the one hand, and in the Republic of Armenia on the other hand. This deadline has to take into account that the agreed provisions need to be in place and working before 1 March 2029.

As of 1 June 2022, the Republic of Armenia has therefore at best 5 to 7 years to comply with the transposition of the legal requirements and regulatory obligations linked to the ETSD that have been included in the CEPA so that the MRV and compliance enforcement, the institutional framework and the MRV framework are in place and working on 1 March of 2029. This would mean that steps such as identifying installations that should be obliged to monitor and report their verified emissions in line with the ETSD Annex I, setting up a competent authority overseeing the MRV and ensuring that legislative and regulatory framework of Armenia reflects these provisions have to be taken in the timeframe enabling the MRV participants to set up their internal monitoring frameworks, while the government ensures that public consultation process is carried out in advance of the legislative and regulatory

process and that the competent authority is set up and relevant administrative services are assured on time, to enable the system to start functioning before the transposition deadline.

To fulfill the obligations of the CEPA, the following provisions of the ETS architecture will have to be implemented by Armenia:

– Adoption of national legislation and designation of competent authority/ies;

– Establishment of a system for identifying relevant installations and for identifying greenhouse gases (Annexes I and II);

– Establishment of monitoring, reporting, verification, and enforcement systems and public consultations procedures (Articles 14, 15, 16(1) and 17)

The CEPA contains a provision by which Armenia agreed to apply the EU internally established measures with regard to emissions from aviation in the event of the International Civil Aviation Organisation (ICAO) not agreeing on the global market-based measure scheme (MBM) for aviation, and the EU responding by taking the steps unilaterally to address the GHG emissions from international aviation. Since the ICAO is making progress on setting up its offsetting mechanism for international aviation, and the EU for the time being is applying its ETS provisions to flights within the EEA, this conditional provision is not the subject of this report.

The following considerations apply to the three CEPA obligations mentioned above:

### 1.1. Adoption of national legislation and designation of competent authority/ies

Adoption of national legislation should be preceded by an analysis of the gaps that the legislation has to address. Two approaches may be considered:

a. A separate law on MRV of GHG emissions from industrial installations may be adopted;

b. Relevant provisions necessary for the MRV system to be implemented may be incorporated into existing legislation, and only MRR and AVR provisions could be implemented through regulations adopted by the government/ the minister in charge of the environment portfolio.

In this context, the following three steps are recommended:

Step 1: A list of definitions to compile and incorporate into the legislation as one of the first tasks in preparation of the draft legislation.

Step 2: Identification of all actors concerned in the ETSD MRV, their roles and obligations.

Step 3: Preparation of a draft law ( option a) with supplementary draft regulations or preparation of draft amendments to the existing laws and regulations (option b), in line with the government internal procedures.

Step 4: Public consultation process.

A common understanding of terminology, conditions of participation, and the enforcement requirements among all stakeholders of the Armenia ETS MRV system would ensure its smooth launch and good reception. The early public consultation process, required under this MRV transposition, would enable the operators of installations to be included in the MRV framework to prepare their internal reporting systems to the new tasks. The government will need to have well in advance before adoption of the legislation and corresponding regulatory measures a good impact assessment stipulating the costs to both, public administration and operators, of implementing the MRV and the enforcement frameworks.

### 1.2. Establishment of a system for identifying relevant installations and for identifying greenhouse gases (Annexes I and II)

The ETSD covers emissions of carbon dioxide($CO_2$), nitrous oxide ($N_2O$) and perfluorocarbon (PFC) from industrial installations above a predetermined threshold.

The term "installation" is defined in Article 3(e) of the ETSD as:
**'a stationary technical unit where one or more activities listed in Annex I are carried out and any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution.**
If a technical unit is connected to the installation and serves a purpose, which usually requires the unit to be stationary during operation, it is considered part of that installation.

This definition should be adopted by the Armenian law to ensure alignment with the EU-wide definition, as it took a few years for the EU member states to come up with a coherent overall description of a stationary installation, reflecting a variety of options applicable to all the concerned industrial sectors from a simple heat plant with a boiler to an oil refinery. Several other definitions are contained in the ETSD and the two regulations (MRR and AVR) and should be copied and used in the Armenian law for consistency.

In order to limit unnecessary administrative burden and costs excessive compared to the levels of emitted GHG, small installations are not included in the EU ETS. Instead, EU member states are obliged to apply other emission reduction measures to these small installations that are included in the non-ETS reduction

efforts of each member state. There are approximately 11000 ETS installations across the EU member states, responsible for 45% of GHG emissions of the European Union. The categories of installations subject to the emissions trading obligations are power plants and industrial plants such as steelworks, production facilities of iron, metals and aluminum, oil refineries, and installations producing cement, lime, glass, ceramics, pulp, paper, cardboard, bulk organic chemicals and acids. The EU ETS at present covers also air flights departing and arriving at the EU airports, and those of other countries of the European Economic Area (Norway, Iceland, and Lichtenstein).

Identification of installations that are likely to be included in the MRV system in line with the ETSD-sanctioned coverage and scope may follow approaches used in the EU in the past, at the inception phase of the EU ETS (2005-2007). Installations were identified through business and industry associations that were asked by governments to alert companies to the new legal and regulatory obligations, and through public information campaigns. Since it is impossible for an installation included in the EU ETS to conduct its activity without a GHG permit issued to the ETS installations, the management of companies included in the ETS learned from their legal counsellors about the impending obligation to obtain one, and to fulfill other ETS obligations. A good information campaign and public consultations prior to the adoption of the MRV system would ensure that all companies eligible for participation in that system are informed well in advance about its entry into force as a legal obligation requiring action on their part.

Identification of the concerned companies should not be difficult as much of the information is already accessible. The National Inventory Reports (NIRs) contain information on emissions from power plants, so the installations combusting fossil fuels are known to the government. Similarly, industrial installations conducting activities belonging to the IPPU categories are also known.

An approach used in Moldova which is an EU Association country with obligations identical to those that have been negotiated by the EU in its CEPA with Armenia was that of preparing a special questionnaire itemizing the requirements of the MRV participation by sectors (see Annex II) which was distributed among companies by the government statistical office.

### 1.3. Establishment of monitoring, reporting, verification and enforcement systems and public consultations procedures (Articles 14, 15, 16(1) and 17)

MRV and enforcement systems should be based on the transposition of the two regulations that are part of the MRV architecture under the EU ETS. These are:

the Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council (MRR)

and the Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council (AVR).

Both regulations have been adopted pursuant to Article 14 of the ETSD and provide not only detailed arrangements for monitoring and reporting of emissions but also activity data, from the activities listed in Annex I to the ETSD, for the monitoring of a tonne-kilometre data (aviation). They also specify the global warming potential of each greenhouse gas in the requirements for monitoring and reporting emissions from that gas. They have to be updated regularly to reflect the most accurate and up-to-date scientific evidence available, in particular, the IPCC, and may also specify requirements on reporting emissions associated with the production of goods by energy-intensive industries which may be subject to international competition.

Public consultation procedures are in place in Armenia already and this procedural element, enabling involvement of the stakeholders in legislative procedures cannot be overlooked from the start as at an early stage of the planning and setting up of the enforcement framework it will enable the companies to better prepare and plan for the implementation of the MRV requirements, adjusting their internal procedures and budgeting.

The costs of implementing the MRV part of the EU ETS framework need not be elevated. In 2005, the e-government was yet a thing of the future. Currently, it is possible to combine permitting, reporting, and assessment of the reports with other administrative functions performed online by companies and the administration.

The companies already collect activity data that are used for the estimation of their GHG emissions. The MRV requirement resulting from the CEPA obligation to implement ETS MRV will add another layer of annual reporting but should not become an excessive burden.

## II. Stakeholders: operators of industrial installations

### 2.1. Identification of industrial installations subject to the ETSD MRV

Industrial installations that should be included in the MRV system in line with the requirements of the ETSD and listed in Annex I to the directive are contributors to GHG emissions reported by Armenia in line with the reporting requirements of the UNFCCC. Armenia is regularly preparing its National GHG inventory reports and National Communications. The most recent, Fourth National Communication of the Republic of Armenia (NC4) has been submitted to the UNFCCC in 2020.

Methodologies for estimating emissions used by Armenia are based on the IPCC 2006 Guidelines for national greenhouse gas inventories. The IPCC 2006 Inventory Software, developed for these Guidelines, is used for data entry, emission calculation, results', analysis, and conclusions. As reported in the revised NDC of Armenia, GHG emissions and removals are estimated using mainly tier 1 methodology from the 2006 IPCC Guidelines. In the case of key categories, tier 2 and 3 methodologies are mainly applied. Tier 3 methods are used for estimating CO2 emissions from electricity generation and cement production. Tier 2 methods are used for estimating emissions from stationary and mobile combustion of natural gas, fugitive CH4 emissions from natural gas, HFC emissions from refrigeration and air conditioning (method 2a), CH4 emissions from enteric fermentation and manure management of cattle, buffalo and sheep, net CO2 removals from forest land remaining forest land, and CH4 emissions from solid waste disposal.

The most recent detailed information on each category until 2017 is provided in the National Inventory Report to Biennial Update Report (BUR) 3 of Armenia, communicated to the UNFCCC in May 2021, and providing, among others, sources of data used. 'The revised NDC of Armenia, communicated to the UNFCCC in May 2021 contains summary data for 2018.

The energy sector (including electricity and heat generation, other stationary and mobile combustion including in transport and residential sectors, fugitive emissions from natural gas) is the main source of GHG emissions in Armenia, accounting for nearly 70% of all GHG emissions of the country. 77% of energy sector emissions originates from fossil fuel combustion, mainly natural gas, of which 84% is imported from Russia (NIR4). Armenia has no domestic resources of fossil fuels and highly depends on fossil fuel imports. As stated in the updated NDC of Armenia, in 2018, 28.4 % of TPES was covered by national resources consisting of nuclear energy, hydro energy, biofuels and a small share of renewable energy (solar and wind). Natural gas accounted for 64.9 % of Armenia's TPES in 2018 (2.03 mln toe), followed by oil products: 12.7 % (0.4. mln toe).

In 2018, Armenia produced 0.67 mln toe electricity, of which 43.3 % came from (natural) gas-fired thermal power plants, 29.8 % came from hydropower plants, 26.6 % came from nuclear power plant and 0.3 % from wind and solar plants.

The NIR contains also estimates of emissions from the categories that are included in the EU emissions trading such as the production of iron and steel, pulp and paper, glass, chemicals. At least some of the companies active in these sectors may fulfill the criteria set out in the ETSD Annex I.

Since power producers are included in the ETSD Annex I based on their combustion activity, all fossil fuel combusting installations in other industry sectors, for example, in the food industry may be eligible, if their installed capacity turns out to be 20 MW or more. However, performing an "industrial activity" is not enough to determine whether an installation falls under the scope of the ETS, even though the ETS was designed in the first place to limit GHG emissions of industrial installations. The EU has adopted over the years a number of non-binding guidelines which are available in English at the DG Clima (European Commission) website and which contain several answers on nitty-gritty of monitoring, reporting and verification of emissions. For example, DG Clima website provides a number of quick guides for the EU ETS operators, airline operators and the CAs, EU ETS reporting user manuals, etc.

Good MRV of industrial emissions will provide the Armenian government with additional bottom-up information on the GHG emissions from the energy sector and industry. This information will support the planning and implementation of future mitigation policies. The MRV, if so decided, may cover all installations active in the sectors listed in the ETSD Annex I, regardless of their size. The thresholds in Annex I aiming at eliminating smaller installations from the emissions trading were introduced to minimise the burden of trading but smaller emitters may monitor and report their emissions in this way contributing to the full information on industrial emissions.

Installations that fall within the scope of Annex I in Armenia may be thus provisionally identified based on the data collected for the national inventories, queries of sectoral ministries and local governments.

A questionnaire such as the one used in Moldova, asking companies to identify installations corresponding with the ETSD Annex I criteria and distributed, for example, through the statistical office, could provide additional supplementary information. Lastly, early adoption of the legal framework, would provide companies with a sufficiently long period of *vacatio legis* (a period between the adoption of the law and its entry into force) enabling them to prepare internally and to apply for their GHG permits on time.

### 2.2. MRV obligations of operators under the ETSD

Operators of installations participating in the MRV system modelled on that of the ETSD will have several obligations linked to monitoring, reporting and verification of GHG emissions from industrial installations that will participate in the MRV system. These obligations will have to become legally

binding in Armenia before the CEPA deadline for the transposition of the ETSD MRV system to the Armenian law.

The first obligation is to apply for a GHG emissions permit. It should be impossible to operate without a permit, and the deadline for the first-time application should be fixed in the law. Failure to obtain a GHG emissions permit in the EU is equal to closure of the installation.

Linked to the previous one, is the obligation to set up MRV procedures at the installation level and to prepare a monitoring plan which is part of the application for a GHG emissions permit.

After obtaining the GHG emissions permit, operators are bound to monitor their GHG emissions in line with the monitoring plan, and to prepare and submit to the Competent Authority a verified annual emissions report. In the event of a change in the installation, it has to be reflected in the update of the monitoring plan which must be verified and submitted to the CA. Any changes to the methodology of monitoring GHG emissions has also to be reflected in the monitoring plan.

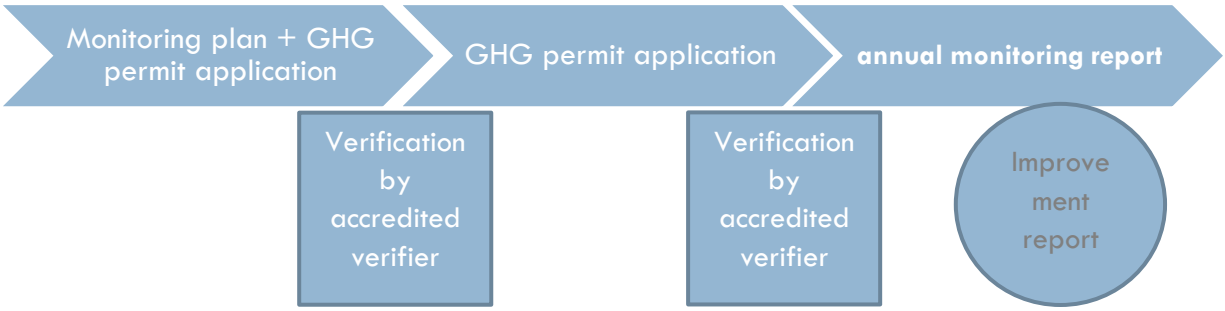


*Fig. 1. MRV-related obligations of the operators of industrial installations (EU ETS)*

In the event of the verifier providing recommendations with regard to the monitoring of emissions in the installation, the operator has to prepare and submit an improvement report, demonstrating that the recommendations have been reflected in its monitoring plan, as appropriate.

The Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council (MRR) provides a comprehensive guidance on the MRV of GHG emissions as prescribed by the ETSD.

**Small emitters:**

In the EU, for installations with low emissions (<25,000 $tCO_2e$/year), special conditions in relation to the MRV system apply. Not only do the rules allow minimum tiers to be met for accuracy, but they also exempt small emitters from a range of MRV procedures. Small emitters may: apply Tier 1 for activity data and emissions factors for all source streams; may submit a simplified monitoring plan based on a template if the MS provides such template; are exempt from submitting a risk analysis supplementing the monitoring plan; are exempt from conducting several aspects of the uncertainty assessment where activity data is based on purchase records; are exempt from reporting on monitoring improvements recommended by the verifier; face less stringent standards for laboratory analysis; and, under further conditions the verifier is allowed to waive the site visit during the verification process.

## III. Stakeholders: the Competent Authority

### 3.1. The Competent Authority – its role in the ETSD MRV system

A "*Competent Authority*" (CA) under the ETSD is understood any adequate entity or entities performing specific administrative functions in the context of implementing the ETS. Tasks that have to be performed by the CA can be entrusted to one single entity (agency), or several entities. Should more authorities than one be designed as competent authorities, their activities must be coordinated. The most important tasks that would also apply to the future CA in Armenia are the approval of GHG emissions monitoring plans, the issuance of permits, the assessment of verified emission reports, and providing information to the participants in the system and the public.

*Fig. 2. MRV-related tasks of the Competent Authority during the MRV cycle*

The CA in Armenia will not perform tasks such as a free allocation of EU allowances or auctioning, since these elements of the emissions trading will not be transposed under the CEPA.

In addition to mandatory tasks there are other important implementation tasks not expressly assigned to the CA in the ETSD, such as inspection and control, or the enforcement actions, inter alia, penalties and conservative estimates of GHG emissions if the annual monitoring report has not been provided on time (the non-compliance of an operator with the MRV obligations). Other responsibilities are related to capacity-building activities, the establishment and maintenance of the registries, reporting to the government (eg. to the overseeing ministry, or the cabinet of ministers, as appropriate. In the case of the EU ETS, in line with Article 21 of the ETSD, CAs annually report on the functioning of the system to the European Commission), accreditation of certain verifiers, promoting administrative measures to temporarily exclude certain installations, etc.

The design and development of the organizational structure of the CA and its functions, including its cooperation with other stakeholders through the provision of advice and recommendations should be one of the priorities in planning the implementation of the CEPA ETSD MRV transposition to the Armenian law. A proper design of the CA is therefore crucial. The example drawn from Ukraine which is in the process of setting up the MRV of industrial GHG emissions in order to implement the elements of the ETSD in line with the Association Agreement illustrates the complexity of various tasks that may be attributed to the Competent Authority.

**The ETS Competent Authority in Ukraine:**

According to the MRV Law of Ukraine, the planned Competent Authority will, in the first phase of the ETS (MRV of GHG emissions from industrial installations), fulfill several important functions:
it will generalise the practice of the application of laws, draft and submit proposals to improve legislative acts and acts of the Cabinet of Ministers of Ukraine in the area of monitoring, reporting, and verification, inter alia, regarding:
the procedure for greenhouse gas emissions monitoring and reporting;
the procedure for verification of the operator's reports;
it will inform on and clarify the implementation of public policy on monitoring, reporting, and verification;

it will deliver organizational direction, guidelines, and coordination of monitoring, reporting, and verification effort;
it will approve the monitoring plans and the modified monitoring plans;
it will determine volumes of greenhouse gas emissions in situations outlined in the procedure for greenhouse gas emissions monitoring and reporting approved by the Cabinet of Ministers of Ukraine and, to that effect, it may submit a written request to the operator for information required for the determination of volumes of greenhouse gas emissions;
it will approve the improvement reports;
it will endorse the verifier's decision to carry out off-site verification;
it will receive the operators (monitoring) reports;
it will maintain the Unified Register and will be responsible for procuring equipment, technology, and software for the Unified Register, for the integrity and protection of data kept in the Unified Register;
it will also exchange information and coordinate activities with the national accreditation body of Ukraine and the central government agency that implements the public policy of state supervision (control) in the area of environmental protection, rational use, reproduction, and protection of natural resources;
it will participate in international cooperation on monitoring, reporting, and verification, study, generalization, and popularization of international experience inthis area;
it will perform other functions in the area of monitoring, reporting, and verification in accordance with the applicable laws. The more streamlined and automated procedures, the less burden rests on the CA staff.

In Ukraine, the enforcement of the MRV law (compliance) is entrusted to the State Environmental Inspection. This need not be the case of Armenia if the enforcement powers are given to the Competent Authority issuing permits and accepting verified annual monitoring reports. However, it would make sense to entrust instead the enforcement of the MRV obligations to the Environmental Protection and Mining Inspection Body (see: 3.2. Compliance with the MRV and AVR. The roles of the CA and the environmental inspection, below).

In some EU member states (for example, Poland, Germany) the issuance of GHG permits is performed by one CA (on a subnational level), while a national level CA is running the registry, provides guidance, provides endorsement to the monitoring plans and collects annual verified reports. Accreditation of verifiers and oversight of the verification process in the EU member states is entrusted to the national accreditation bodies. For these reasons, one of the arguably most critical aspects in relation to the technically effective and organisationally efficient, well-functioning ETSD MRV is the interaction between all the national authorities responsible for the proper functioning of the MRV system. If the CA is not given the enforcement role, the communication and cooperation between the CA, the National Accreditation body and the enforcement agency (such as the Environmental Inspection in Poland or the State Environmental Inspection (SEI) in Ukraine will be crucial to safeguarding the integrity of the MRV system. The enforcement body/agency cooperates with the CA and carries out either regular, planned

checks of the sites, or controls the installations at the request of the CA. The involvement of the enforcement agency (such as state environmental inspection) in the MRV compliance checks is not mandatory in line with the MRR or the AVR. However it evolved as the best practice in the EU, and it is now a subject of harmonization between the EU member states, coordinated by the European Commission.

### 3.2. Procedures applied to the issuance of GHG emission permits

A GHG permit is issued to the operator of an installation based on an application submitted to the Competent Authority in an EU Member State. The application has to be made before the installation is put into operation. The role of the CA is to provide guidance to operators and templates of the application and other requested documents, which should be accessible (and downloadable) on the CA website.

The applicant submits a package of documents containing an application for a greenhouse gas emission permit from an installation covered by the greenhouse gas emission allowance trading scheme, with attachments. There are basic requirements that have to be fulfilled by the application procedure in all Member States. According to the EU requirements, an application for a permit includes:

1) name and surname or name of the operator of the installation and indication of his address, place of residence, or address of the registered office;

2) the address of the plant where the installation is located;

3) information on the legal title to the installation;

4) information about the installation, devices and technologies used, as well as technical characteristics of the sources of generation and place of emission;

5) information on the type of activities carried out in the installation;

6) specification of the types of greenhouse gases to be covered by the permit.

The application is submitted with a number of attachments, such as a copy of the integrated permit[3], other environmental permits such as a permission to release gases or dust into the air, a GHG emissions monitoring plan, a sampling plan prepared in accordance with Art. 33 of the Commission Regulation

[3] It is not necessary to submit a copy of the integrated permit, if the authority in charge of the ETS permitting is also overseeing the implementation of the IED and has also issued the integrated permit to the installation.

(EU) No 2018/2066[4], a summary of the application in a non-specialist language. Other requirements may apply, depending on the legal/regulatory framework applicable in the EU Member State, such a a proof of payment for the processing of an application. These requirements are usually incorporated in the regulatory framework of the MRV system.

In the case of installations with low emissions, referred to in article 47 paragraph 2 of the Commission Regulation (EU) No 2018/2066, the application for a permit shall be accompanied by a copy of an environmental permit such as a permit for the introduction of gases or dust into the air, a summary of the application in a non-specialist language, a simplified monitoring plan, and a sampling plan as well as documents confirming the fulfillment of at least one of the conditions (referred to in Article 47 (2) of Commission Regulation (EU) No 2018/2066), i.e .:

(a) the installation's average annual emissions reported in its verified emissions report in the trading period immediately preceding the current trading period, excluding biomass CO2 and before subtracting transferred CO2, was less than 25,000 t CO2 per year;

(b) data on the annual average emissions referred to in point (a). ) are not available or no longer applicable due to changes in the boundaries of the installation or changes in the operating conditions of the installation, but the annual emissions of such an installation for the next five years, without taking into account the $CO_2$ from biomass and before subtracting transferred CO2 will amount annually to less than 25 thousand tons $CO_2$, under conservative estimates,.

The Competent Authority will check that the applicant has provided all the documents and provided the necessary data in the application. If the application contains formal defects (e.g. the applicant has made a mistake in the application, did not provide the required data, or did not submit the required documents), the CA will contact him/her with a request to correct the errors or submit an explanation within the prescribed period.

### 3.3. Compliance. The roles of the CA and the Environmental Inspection

Needless to say, compliance under the EU ETS is ensured in essence by the verifiers (see section 3.4 below). On-site visits performed by the verifiers hired by the operators of the installations are an essential part of the verification process. However, verifiers' visits are not the only on-site check-ups that the operators may expect. If any irregularities linked to the MRV at the installation level are signalled

[4] Commission Regulation (EU) No 2018/2066 of 19 December 2018 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87 / EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 601/2012

by verifiers, the Competent Authority should respond by initiating an inspection. The CA has to step in in specific, well-defined circumstances, eg., when the operator fails to follow the recommendations of verifiers or when the monitoring report is not submitted on time, or not submitted at all. The CA staff may exceptionally follow up on discrepancies or non-compliance with the regulatory obligations by visiting the installation site.

The CA staff may also inspect the installations to corroborate the monitoring plan of an installation before issuing the GHG emissions permit. Such visits are extremely rare as the monitoring plans submitted by companies to the CA are usually prepared with support from external consultants who specialize in the MRV of GHG emissions from industrial installations and know their subject well.

The law of Armenia should provide a legal basis for the MRV-related inspections on-site, stating conditions under which the inspection related to MRV of GHG emissions may be carried out (and by whom), such as, for example:

1) when the reliability of data contained in an application, eg for a GHG permit or another application for an administrative service (and its supporting documents) is not certain (CA may suspect irregularities)
2) when the reliability of data in the operator's report (the monitoring report) has to be validated
3) when supporting documents are not submitted as required by law.

The inspection should be carried out within three months from the CA finding out about the breach or assuming that data submitted to the CA are unreliable. The inspection should also be unscheduled (in the sense that the operator is not notified about the date of the inspection)

If the inspection is linked to the issuance of the GHG permit and the approval of the monitoring plan, the conditions for performing such an inspection also have to be backed by regulatory or legal provisions.[5]

During the control visit of the sites, the CA may be supported by the environmental inspection. This is the procedure established in several EU Member States where the inspection of an ETS installation can be performed either by the environmental inspection at its own initiative (backed by a legal competence, of course), eg. during a routine inspection or at the request of the CA (as an ad hoc inspection). In many EU member states, the ETS compliance is inspected during standard inspections prescribed in the Industrial Emissions Directive (IED)[6]. If the environmental inspectorates are in charge of the on-site

[5] For example, in Ukraine all on-site inspections are backed up by the Law of Ukraine on Main Foundations of State Supervision in the Area of Business Activity
[6] Large ETS installations are also covered by the Industrial Emissions Directive.

inspections, the best practice recommended and often implemented in the EU member states is that the CA officials participate in inspections together with the inspectors[7] sent by the environmental inspectorate. The site visits may also be delegated to the environmental inspection. However, the main function of the inspectorates is to identify administrative offenses and conduct administrative and tort proceedings, including the imposition of penalties, not to check the GHG monitoring plans.

A decision needs to be taken (and reflected in the Armenian legal framework) whether

1) CA employees can perform the inspections in person, eg. when they decide whether to issue the GHG permit and want to check on-site the monitoring plan;
2) Inspections are carried out by the institution ensuring environmental compliance in Armenia, the Environmental Protection and Mining Inspection Body, using its human resources and only reporting to the CA. (as stated earlier, the inspections could be either planned or ad hoc at the request of the CA, or only performed ad hoc, when necessary);
3) CA employees join the inspectors during on-site visits to the installation.

Much depends on how prescriptive will be the regulation extending the competences of the Environmental Protection and Mining Inspection Body to the MRV (ETS) inspections.

A procedure for initiating and conducting such on-site inspections should be prepared in line with the prevailing administrative practice and should be known in advance to the operators. For example, it could be formulated as guidelines accessible online.

It is advisable for the officials representing the CA to participate in inspections together with the Inspectors representing the Inspectorates. (random inspections) in case of an on-demand inspection (eg. linked to non-compliance, or other reasons). Cooperation in this context calls for established communication channels between the CA and the relevant inspection body, following standard administrative practice.

If Armenia decides for „naming and shaming" non-compliant operators (yes, some EU Member States do this!) then perhaps the results of the inspections should be made available but this is not a standard practice.

Empowering the Competent Authority to perform the enforcement functions without the involvement of the environmental inspection could reduce the communication risks. On the other hand, separating the enforcement from the permitting and overall administration of the MRV system may better protect the

[7] Much depends on how many installations will Armenia have in the MRV system, and how many CA employees will be recruited to deal with the MRV of GHG emissions from industrial installations.

integrity of the system. Armenia will have to decide on the format that is least disruptive to its current administrative structures. However, cooperation between the CA and the enforcement agency (Environmental Protection and Mining Inspection Body) is one side of the information exchange in the MRV cycle in the context of the compliance of operators with the legal requirements that requires the CA to cooperate closely foremost with the verifiers supervised by the national accreditation body, which in turn cooperates with the CA.

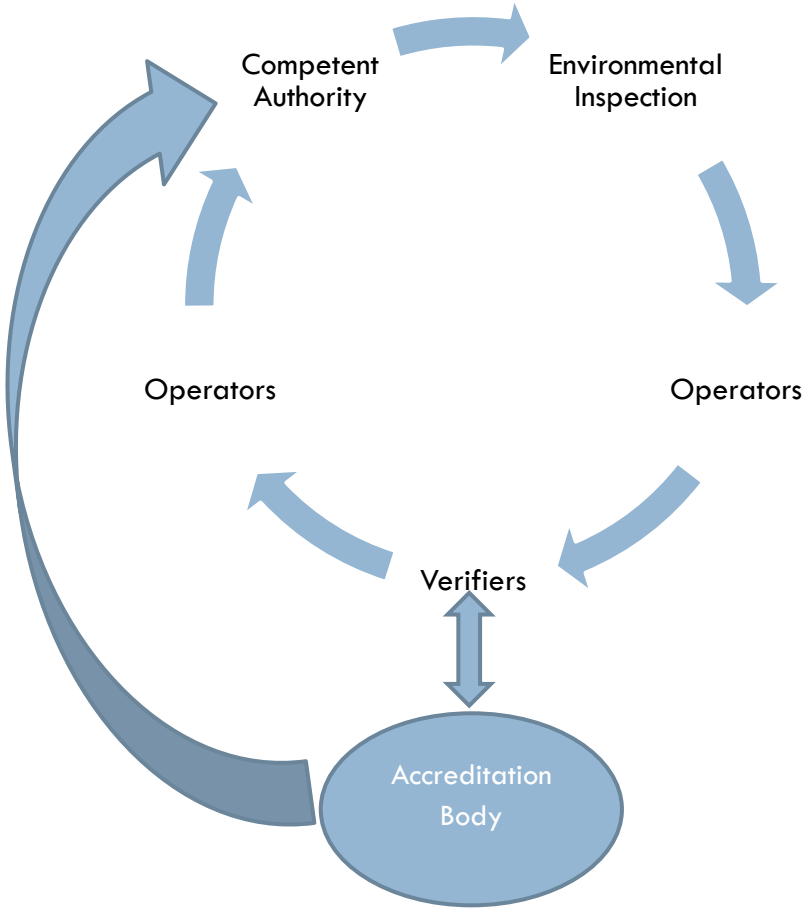


*Fig. 3. Communication between the Competent Authority, environmental inspection, verifiers, accreditation body and operators of installations.*

The smooth functioning of the MRV of GHG emissions from industrial sources requires that the communication flow between the Competent Authority responsible for administering the MRV system and other administrative bodies, responsible for both, accreditation of verifiers, and compliance-related inspections (if enforcement powers are granted to a separate agency, not the CA) supports the smooth

functioning of the MRV system, regardless of the carbon reduction mechanisms it is destined to serve, be it emissions trading, taxation or government-imposed regulatory measures. To that effect, communication between these entities needs to be regular, defined through regulations and internal procedures, organised in line with the annual planning or, in certain circumstances, organised *ad hoc*. Finally, it can be both formal and informal. Either way, legal requirements (embedded in legislation) obligating the authorities to exchange data and information are necessary to ensure that the exchange of information is happening, while lower regulatory acts or protocols that belong to the category of internal regulations of institutions/bodies may ensure communication that is sufficiently regular and robust to ensure that the integrity of the MRV system is protected.

## IV. Stakeholders: the accredited verifiers and the accreditation body

The GHG monitoring plans and the annual monitoring reports submitted by the operators to the CA have to be previously verified by accredited verifiers. The CA relies on the accredited verifiers to provide corroboration of information submitted by the operators in these documents. The minimum conditions are fulfilled with verifiers on-site visits enabling verifiers to confirm statements made by the operator in the monitoring plan and the subsequent monitoring reports. Verifiers provide recommendations to the operators on the necessary improvements of their monitoring processes, their risk management and other related issued, it may be said that verification reports are the proxy of the CA performing the verification *in situ*. Verifiers specialize usually in certain categories of installations and sectors for which they must obtain accreditation.

The matters related to the accreditation of verifiers are dealt with by the Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council (AVR).

Verifiers are checked on by the National Accreditation Body (NAB) that accredited them (or by a Certification Authority, if they are natural persons) in the following circumstances:

1) checking the submitted accreditation application and the evidence corroborating verifiers competences;

2) Checking on processes in place, quality management and independence safeguards;

3) checking how the verification process is conducted.

The NAB is in charge of monitoring accredited verifiers performance and may inspect their office to check their annual work plan which the NAB shares with the CA. The NAB also provides information on the accredited verifiers and the scope of the verification services provided by them to the operators. The NAB of Armenia has to obtain the relevant competencies through changes in the law regulating its functioning, as appropriate, with references in the MRV law, if such is adopted raher than a set of amendments to the existing environmental and other laws, as appropriate. The flow of information has to be assured between the CA and the NAB in a formal (prescribed in the implementing measures) and informal way, such as regular consultations, especially in the initial phase of the functioning of the MRV system. The verifiers and the accreditation body monitoring the verifiers are the main allies of the Competent Authority in ensuring smooth functioning of the MRV system, so good and regular communication and information exchange is mandatory.

# V. The MRV of GHG emissions from industrial installations in Armenia: how to get there?

## 5.1. Preparation of the draft legislation to transpose the MRV provisions contained in the CEPA

The following steps need to be taken to prepare draft legislation

1. An analysis of the articles of the ETSD indicated in the CEPA.

2. An analysis of the current legislative work on the approximation of the Armenian laws and regulations to the CEPA obligations.

This will enable the identification of processes that may be combined with those of the ETS MRV. An example that can be quoted in this context is the approximation of the Armenian laws and regulations to the environmental inspection requirements contained in the CEPA. If a decision is made to proceed with a draft MRV law, the review will identify those laws and regulations that will have to be amended in parallel to reflect the adoption of the new law on the MRV of GHG emissions from industrial installations

3. Compiling a list of definitions to incorporate into the legislation. This should be one of the first tasks in preparing the draft legislation as the process of establishing what definitions have to be incorporated will also provide information on what elements to include in other, parallel legislation or regulatory frameworks.

4. Identification of all actors concerned in the ETSD MRV in Armenia, defining their roles and obligations.

This step covers plans for the information campaign and public consultation process in line with the ETSD provisions included in the CEPA, plans for CA staffing and allocation of tasks among the CA staff, templates for administrative services, plans for database/registry of MRV documentation, plans for the guidelines for operators, helpdesk, detailed plans for setting up information flow between all the stakeholders, deciding on the share of the competences between administration of the MRV system and ensuring compliance (enforcement).

5. Preparation of a draft law ( option a) with supplementary draft regulations or preparation of draft amendments to the existing laws and regulations (option b), in line with the government internal procedures.

6. Draft impact assessment of the planned legislation, in line with the government procedures.

6. Public consultation process. (including, for example, information campaigns, website, webinars, meetings with business organisations, etc)

7. Adoption of the draft law/amendments to existing legislation, and regulatory measures.

8. Setting up the Competent Authority (an alternative is to add new competencies to those of one of the existing agencies or regulatory bodies)

The inception phase of the new MRV system will be a period of "learning by doing" for the operators, the verifiers and the administration and it is suggested that it spans 2 years, followed by an evaluation to identify gaps and needs for further improvement. It seems important to grant at least one year of *vacatio legis* to operators and potential verifiers before the first year of the compliance cycle, to allow the stakeholders to set up their internal procedures, train the staff, prepare their monitoring plans, obtain accreditation (verifiers) and to set up a database/registry that will be used for submitting, processing and storing the applications and suppporting documents, the monitoring plans, monitoring reports, verification reports, improvement reports and any other relevant documents.

It seems therefore that the relevant legislation should be adopted at the latest in the first quarter of 2026, taking into account the deadline for the entry into force established through the reference to the provisional application of the CEPA agreement.

### 5.2. Provisional timeline for the implementation of the ETSD MRV system in Armenia

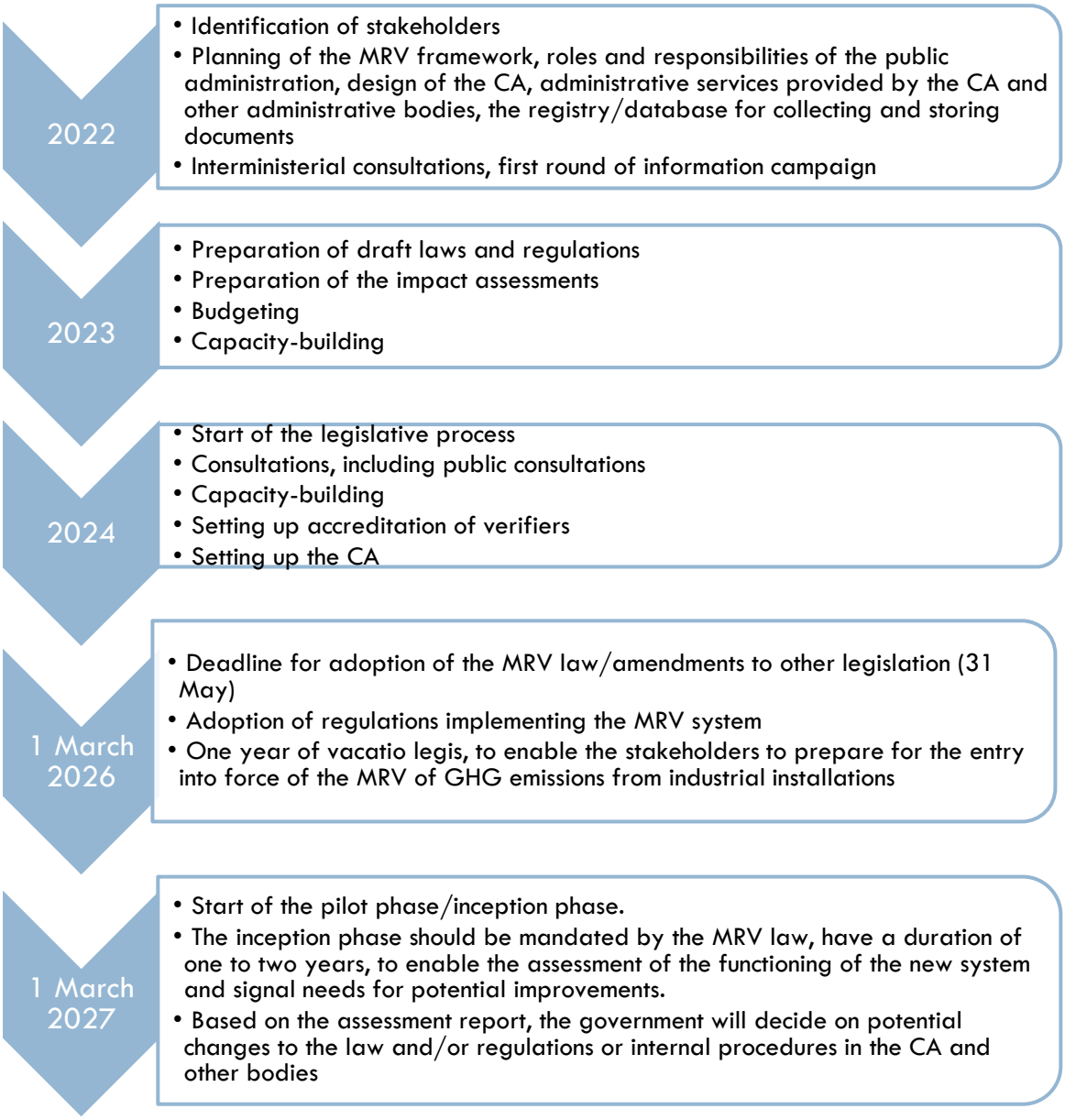


*Fig. 4. The proposed provisional timeline for the implementation of the ETSD MRV system in Armenia*