Needs Assessment Report on Measurement (Monitoring), Reporting and Verification system in Azerbaijan

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Abbreviations

USA – the United States of America
EU – Eurpoean Union
AzAC – Azerbaijan Accreditation Centre
GHGs – Greenhouse Gases
EU ETS – European Union Emission Trading Scheme
LULUCF- Land use, land use change and forestry
MENR – the Ministry of Ecology and Natural Resources
MRV – Measurement (Monitoring), Reporting and Verification system
NAMA – Nationally Appropriate Mitigation Actions
INDC – Intended nationally determined contributions
CDM – Clean Development Mechanism
UNFCCC – United Nations Framework Convention on Climate Change
UNDP – United Nations Development Programme
SOCAR – State Oil Company of the Azerbaijan Republic

1. General information about the concept of "MRV"

For the first time, the term "MRV" came from the Bali Action Plan adopted in the 13th Conference of Parties of the United Nations Framework Convention on Climate Change (UNFCCC) held in Bali, Indonesia in late 2007. In the Bali Action Plan in paragraph 1bii) the term MRV was coined as follows: "Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner". Hence, the M of MRV stands for measurement in the context of the negotiations and in related activities. In the context of national MRV systems and their purpose, however, it often turned out in practice that a broader sense as reflected by the term 'Monitoring' might be more appropriate. That's why throughout this document both terms 'Monitoring' and 'Measuring' are used when it comes to national MRV systems.

During the past period, the concept of MRV has been perfected further in the 16th and the 17th Conference of Parties of UNFCCC held in Cancun, Mexico and Durban, the Republic of South Africa and other intergovernmental negotiations. Despite this, the term "MRV" is often used without clear understanding of its definition, purpose and content, and as a result may lead to misunderstanding.

"MRV" is considered a central element of effective implementation of Intended Nationally Determined Contributions (INDC), as well as Nationally Appropriate Mitigation Actions (NAMA) on reducing the effects of countries on climate changes presented under the Paris Agreement.

Measurement or Monitoring is neccessary for determination of quantitative and qualitative indicators of emissions, determining where reduction efforts on GHGs emissions are directed, tracking support provided to mitigation, evaluating the effectiveness of INDC or other intended mitigation measures, assessing the financial support received and monitoring the progress obtained towards reduction of GHGs. Reporting and verification are important for ensuring transparency, effective governance, accountability and reliability of the results, as well as, creating confidence in effective use of resources.

1.1. Types of MRV

- **MRV on emissions** – emission on MRV are the concept of measuring, reporting and verifying measurable emission data at the national, regional, sectoral or entity level;
- **MRV on NAMAs** – the concept of MRV on NAMAs includes principles on mitigation and measuring, reporting and verifying the impact.
- **MRV on financial support** – the concept of MRV on financial support may differ significantly depending on the type of support (financial flows, scientific and

technical exchange, skills development, etc.).

The current needs assessment report has been developed to establish and implement an MRV system on GHGs emissions.

1.2. Importance of MRV

MRV can be considered as a management system on GHGs emissions, measures to reduce these emissions and tracking support for mitigation.

The latest decisions made within the framework of international climate negotiations show increasing global consensus on the need for common forms of MRV system data.

Being a broad concept, MRV clarifies a number of actitvities to provide reliability in the fight against climate changes:

- By using standardized **measuring and calculation** methodologies and means, **calculation** of carbon dioxide (CO_2) and other GHGs emissions;
- By using standardized definitons, units and indicators of effectiveness, **reporting** local and international interested parties;
- **Verifying** correct implementation of methodologies in order to ensure quality and reliability of information provided by the organizations (enterprises).

MRV is a key element of being transparent and accurate, as well as, comparable in relation to data on climate changes. The conceptual framework of MRV may be the management system on formation of GHGs emissions, reduction measures of these emissions and tracking support on mitigation.

1.3. Benefits of MRV

There will be the following benefits by establishing national (local) MRV system:

- Improving the quality of information related to GHGs emissions;
- Identifying national priorities (including INDC and NAMAs), as well as challenges and opportunities;
- Improving strategic planning, prioritization and strategic sequence, ensuring continuous improvement of the MRV system and implementing measures to reduce GHGs emissions;
- Accounting of NAMAs, tracking the course of effectiveness (for example, reduction of emissions, achievement of targets, etc.);
- Ensuring the quality of information that is considered important for acquiring climate financing and participating in market mechanism (for example, emission trading scheme);

- Demonstrating the effectiveness of the measures to reduce emissions and to mitigate the effects on climate changes to donors.

1.4. Why a reliable MRV is important?

- This is a prerequisite for creating emission trading on GHGs (carbon), emission quota, emission tax or other emission tools;
- Monitoring, reporting and verification of GHGs emissions plays a major role in reliability;
- It builds confidence in emission trading or emission quota tools and it ensures the availability of these tools;
- It creates transparent data, prevents from fraud;
- It provides reliable information about the status of emissions of enterprises to the body implementing control function;
- It provides information to the companies about the current status of the country in terms of GHGs emissions;
- It is a prerequisite for access to various emission trading schemes (both international and local).

2. The current situation regarding MRV in Azerbaijan

The Paris Agreement adopted in the 21st Party Conference of UNFCCC was approved by the Law of the Republic of Azerbaijan dated October 28, 2016. Regarding this, the Republic of Azerbaijan should meet its targets under the presented INDC, and for this purpose must control emission sources released into atmosphere. Beside this, it is also necessary to identify and implement appropriate measures for significant reduction of emissions. There is a serious need for development of a local MRV system in Azerbaijan for providing support on the issued mentioned, approval of reduction of emissions and verification of the effectiveness of strategic measures.

The Republic of Azerbaijan submitted INDC document to the Convention Secretariat in the 21st Party Conference held in Paris in 2015 in order to support approval of a new Global Agreement that will be applied to all Parties on climate change.

According to the INDC document, the Republic of Azerbaijan targets to reduce 35% of GHGss emissions by 2030 with compare to the base year (1990) as a contribution to the initiative to mitigate the effects of global climate change. That is, by 2030, Azerbaijan should reduce GHGs emissions at the amount of 25.666 gigagram of carbon dioxide equivalent except for land use, land use change and forestry (LULUCF) or at the amount of 24.374 gigagram of carbon dioxide equivalent including LULUCF.

MRV sectors and measures to mitigate the effects of climate changes aimed at

reducing GHGs emissions are also mentioned in the INDC document. It should be noted the fact that the mentioned contribution will put additional financial burden on the country's economy. Given that the Republic of Azerbaijan is a developing country, there is a need for support to implement climate targets, including, financial, technical and technological assistance, as well as, skills development. The existing global/regional mechanisms for providing support to reduce GHGs emissions will be more accessible when an effective MRV system starts functioning in the country, besides, will provide measures to mitigate effects of climate change and reliability on emission reductions achieved as a result of these measures.

2.1. Reporting on emissions

The Republic of Azerbaijan has a system for measuring or monitoring of pollutants released into atmosphere and reporting system regarding this, as well as, an administrative structure with certain requirements on preventing air pollution. However, there is a great need for improving this structure and its implementation mechanism. GHGs should also be kept in focus.

Monitoring of emissions, as well as, GHGs and reporting on the results are carried out annually by the enterpries having emission sources. The Department of Environmental Protection of the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, as well as its subordinate regional offices analyze reports submitted by enterprises. Properly maintained reports are agreed immediately, the reports with doubts about accuracy are agreed after having eliminated inconsistencies. The agreed reports are submitted online to the State Statistics Committee of the Republic of Azerbaijan by the enterprises with the purpose of creating a database.

Table 1. The section of GHGs emissions of the report compiled by the enterprises on the pollutants released into atmosphere

The line code	Pollutants	Pollutants released into atmosphere (tons)	
		In the reporting year	In the previous year
A	B	1	2
201	Carbon dioxide (CO_2)		
202	Nitrous oxide (N_2O)		
203	Methane (CH_4)		
204	Hydrofluorocarbons (HFC)		
205	Sulfur hexafluoride (SF_6)		
206	Perfluocarbons (PFC)		

2.2. Pilot application of MRV system

SOCAR has implemented a pilot system on monitoring, reporting and verification at the company level and has taken appropriate measures to improve this system. The company's existing MRV system consists of 3 stages:

- The structural units of SOCAR develop reports about the emissions released into atmosphere;
- The Ecology department of SOCAR holds monitoring in those structural units and develops a monitoring report on this;
- After this, an audit company that is contracted by SOCAR carries out an independent audit, develops and submits a final report, and this report becomes an integral part of the sustianable development report of the company.

2.3. Legal and institutional framework and economic tools

Environment protection of the Republic of Azerbaijan is based on the prinsiple "polluter pays". In this widespread practice, the damage to the environment, consequently to people's health is compensated by the guilty person causing pollution as a financial means.

The main document regulating the economic mechanism of the "pollutant pays" is "Regulations on application of payments for natural resources, payments for release of pollutants into the environment and use of funds arising from these payments" approved by the Decision of the Cabinet of Ministers of the Republic of Azerbaijan dated March 3, 1992, #122. The last change to the decision was made in 2008. This decision has identified payments for natural resources, receiving payments for releasing pollutants into the environment and rules for the use of funds arising from those payments. The rules were applied to 89 different pollutants. Mainly, GHGs, including carbon dioxide were not included to the list of these pollutants. The closest homologous substance to carbon dioxide in the list is carbon monoxide (CO).

As the amount of payments is very less, most polluters (enterprises) are not interested in measures for reduction of emissions. For example, in normal conditions, the amount of payment for emitting 1 ton of carbon monoxide (CO) into atmosphere is even less than 1 Azerbaijani cent.

According to the Law of the Republic of Azerbaijan "On protection of atmosphere", every enterprise having stationary sources of harmful substances released into atmosphere (carbon dioxide is not considered as a harmful substance) should obtain a special permit for emission of harmful substances into atmosphere from the State Expertise Department of the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan. This special permit document for enterprises identifies emission limits measured by ton/year or gram/second. The period of validity of special permit for emission of harmful substances into atmosphere is 3 years. There are 4 types of the payment

amount identified for this permit: 99 manats, 198 manats, 396 manats and 792 manats. This payment amount is applied to legal entitites and natural persons depending on the production nature of enterprises and the actual quantity of harmful substances released into atmosphere.

The major control body of the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan is the Department of Environmental Protection. The department of environmental protection was established in 2001 by the relevant order of the Ministry of Ecology and Natural Resources. The department is an authorized body that oversees implementation of the legislation of the Republic of Azerbaijan in the field of environmental protection in local and foreign enterprises in the territory of the Republic of Azerbaijan and aquatorium of the Caspian Sea belonging to the Republic of Azerbaijan.

According to the Law of the Republic of Azerbaijan "On termination of inspections in the field of entrepreneurship", most inspections, including inspections carried out in the field of environmental protection has been suspended from 2015 to 2021. This law has been adopted with the purpose of stimulating development of entrepreneurship. However, in the practice, the mentioned very humanistic law "encourages" some irresponsible companies not to comply the legislation on environmental protection, and this can lead to bigger problems in addition to spending more costs.

According to the relevant legistlation of the Republic of Azerbaijan, all enterprises having stationary sources of harmful substances released into atmosphere must submit the official statistic report on protection of environment online (real-time) in an electronic form to the State Statistic Committee by February 15 of each year. The second section of the mentioned report is about GHGs.

Monitoring of harmful substances released into atmosphere, including GHGs and compiling the report is carried out annually by the enterprises themselves. Usually emissions are not measured, the amount of pollutants is identified by calculating the mass balance. The department of environmental protection of the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, as well as, its subordinate regional offices analyze the reports submitted by the enterprises. Properly maintained reports are agreed immediately, the reports with doubts about accuracy are agreed after having eliminated inconsistencies.

According to Article 239 of the Code of Administrative Offenses of the Republic of Azerbaijan, imposition of fine is applied to officials in the amount of two thousand five hundred manats to three thousand five hundred manats, to legal entities in the amount of eight thousand five hundred manats to ten thousand manats for failure to carry out enterprise (production) monitoring of environment, or to keep records and report environmental impacts of economic activites that can cause ecological threat.

2.4. Analysis of the existing gaps in MRV

In addition to porviding its contributions to the initiative of reduction of effects to

global climate change, as a developing country, the Republic of Azerbaijan is interested in participating in various financial mechanisms to implement mitigation measures for fulfilment of these targets.

It is necessary to establish an effective and reliable MRV system in the country in order to increase international confidence to reduction measures of effects of climate change at the national level. A strong institutional framework containing relevant institutional structures, as well as, necessary staff, systems and processes should be developed to establish an effective and appropriate MRV system at the national level in the country.

Like many other countries, the Republic of Azerbaijan has also little experience about relatively new international MRV systems and therefore, there are some gaps and obstacles to be eliminated regarding this field in the country. In order to raise awareness about this, holding large-scale events are required. First, trainings should be held in enterprises and organizations, convenient manuals should be prepared for users in order to understand the mentioned field.

The reason why the private sector has little trust in UNFCCC is the previous pessimist experience about Clean Development Mechanism (CDM), as well as, the limited knowledge about NAMA, INDC and MRV.

In addition, if there is a good database, business opportunities of effective MRV system can be supported by the private sector. All of this will require providing very great training efforts to change approaches and to identify opportunities.

The following major gaps and obstacles have been identified for establishment and implementation of MRV system as a result of conducted analyses:

Lack of capacity in skills – experience about economic and ecological benefits of technologies and generally awareness level is limited, and this will create challenges while structuring the MRV system which is new. Experience about CDM, NAMA, INDC and MRV is also very limited.

Gap in information – not being familiar with new technologies will show itself as an obstacle. Thus, the use of traditional and commonly used methods in energy consumption and other areas will be preferred. It is supposed that, most of the interested parties will consider the MRV system only as a control and financial mechanism of central executive bodies, the potential positive aspects of the system will be out of focus.

Economic and financial gap – there are several obstacles for implementation of MRV system: For example, high investment costs, long-turn return period of investment costs, inadequate financial initiatives and low tariffs of energy carriers. Considering the existence of such obstacles in the country, it is important to establish an MRV system with a relatively low budget, requiring less investment.

Technological shortage – Knowledge of manufacturing facilities, scientific-research institutions, as well as, suppliers and importers about new technologies related to GHGs is limited in the Republic of Azerbaijan. This fact may play a limiting factor in the

process of structuring and establishing a progressive MRV system.

3. Implementation plans of the MRV system which is under formation

Implementation of an effective MRV system which is under formation is planned in the follwoing years in the Republic of Azerbaijan. Considering international practice in the MRV field, European Union (EU) Emission Trading Scheme (ETS) can be considered as basis of national MRV system of Azerbaijan at the first stage.

MRV legislations of the non-EU countries (for example, Turkey), as well as, opportunities of market mechanisms that can be based on national MRV system can be taken into account and practice in this field can be studied.

Acording to the preliminary investigations, if enterprises are prioritized, at the first stage about 100 enterprises which are larger in terms of GHGs emission are expected to function under MRV system.

Enterprises which are expected to function under the MRV system is described in the following table.

Table 2. Areas of production planned to function under the MRV system

THE TYPE OF ACTIVITY	THE TYPE OF SUBACTIVITY
Fossil fuel combustion (capacity >20 megawatt)	Thermal Power Station
	Sugar production
	Beer production
	Compressor stations of the natural gas pipeline
	Other (e.g., municipal solid waste incineration plant)
Processing mineral oils	Mineral oil refinery plant
Metallurgy industry (heat capacity >20 megawatt)	Iron/steel production (electric arc furnace mills, hot/cold rolling, melting, etc.)
	Aluminum production
Mining industry	Production of cement clinker
	Production of glass/glass fiber
	Production of ceramics
	Production of brick/tiling
	Production of plaster products
Paper industry	Production of paper or cardboard
Chemical industry	Production of petrochemicals and other mass chemicals
Acid production	Nitric acid production

3.1. Principles of a reliable MRV system

- **Completeness**: To form an MRV system, all sources of GHGs emissions, including both processing and combustion processes should be covered;
- **Permanency**: The monitored and reported emissions should be comparable after a certain period using the same monitoring methodologies and information;
- **Transparency**: Monitoring of data, including information related to the activities, emissions, oxidation and conversion coefficients, accounting, layout, analysis and documentation should be conducted in such a way that it enables to identify quantitative and qualitative parameters of emissions by inspecting and authorized body;
- **Cost efficiency:** If it is technically possible during monitoring and reporting of emissions and it does not result in spending higher costs than its actual cost, the highest accuracy that can be achieved should be targeted.

However, there is lack of experience, knowledge and skills, including lack of information to establish and manage such an MRV system. The following shortcomings have been identified to develop and implement an MRV system in the Republic of Azerbaijan:

- Lack of institutional capacity in the relevant ministries and Azerbaijan Accreditation Centre (AzAC);
- Lack of experience and knowledge of enterprises operators;
- Lack of experience and knowledge of employees who will perform oversight function;
- Relevant gaps in the legislation (including those related to accreditation standards);
- Lack of instructions, templates, standards and samples.

According to the above-mentioned information, the following steps have been identified for building national capacity on MRV, developing and implementing the relevant legislation:

Step 1: Survey related to identification of interested parties and preparation level

It is necessary to conduct a survey to identify interested parties, including the list of enterprises that will provide information onGHGs emissions into atmosphere on the MRV system. A survey should be planned and implemented to identify the list of interested parties and their contact details in order to effectively take the following steps related to skills development..

Step 2: Investigation on assessment of gaps, opportunities and obstacles in the existing legislation in this field, and development of the relevant legislation

Necessary actions should be taken to establish an appropriate national system for

implementation of the national MRV system at the level of formation, in complaince with the requirements of advanced international practices and standards. Legislative activities consists of comprehensive legal, technical and institutional analysis of the current national situation, development of appropriate alternatives for the implementation of the system, the implementation plan for these alternatives and selected alternatives, as well as analysis of costs, tasks and timeframe for implementation, including identification of relevant legal provisions for application of the national MRV system.

Step 3: Development of standards and templates

In order to ensure that all interested parties are able to carry out their work in a standardized way and without obstacles, national emission monitoring, reporting and verification norms, templates on MRV system and instructions on other technical standards should be developed. Accreditation standards of verifiers – individual persons and legal entities should also be developed in order to carry out the accreditation process. The list of the proposed standards is given below:

- **General guidelines on measurement and reporting:** this is explanatory guidance intended for enterprises having emission sources about compliance with standards, implementation period, duties and responsibilities, general concept – monitoring and reporting approaches, information flow and uncertainties, measurement, monitoring and reporting of GHGs emissions;
- **Examples of MRV calculation by sectors:** a comprehensive explanatory guidance that describes step-by-step examples of ways for monitoring and reporting of GHGs emissions intended for each sector that will be involved in MRV;
- **Guidance on verification and approval of reports on GHGs emissions:** this explanatory guidance is about independet, accreditated verification bodies or intended to have accreditation that will function under the MRV system. Comprehensive information will be provided in tis guidance about pre-contractual stage of the verification process, preparation for verification (streategic analysis, risk analysis and preparation of an audit plan), comprehensive (cross) audit, eliminating inconsistencies and errors, making a final decision on the results of the audir, independent analysis and major stages covering development and submission of the verification report.
- **Guidance on an online MRV system:** Use of an online MRV system, including monitoring plans for enterprises and verification bodies, step-by-step ways of development and submission of annual emissions, improvement and verification reports will be focused in this guidance.

The list of the proposed templates is given below:

- Monitoring plan for enterprises
- Annual report on GHGs emissions
- Improvement report
- Verification report
- Information exchange

Step 4: Activities related to training and skills development for the relevant interested parties

It is very important to involve all participants in implementation of monitoring, reporting and verification processes of GHGs emissions. Activities on skills development should be undertaken, practical exercises and on-job trainings should be held, relevant government bodies, as well as, enterprises, verifiers and other interested parties that will provide monitoring and reporting of GHGsshould be targeted.

The main focus in trainings at the first level should be directed to providing practical information intended for reliable application of the MRV system. International skills and advanced practices shoul also be presented to national interested parties.

The list of the proposed trainings by sectors is given below:

- Monitoring and reporting trainings in the areas of production:
  - Electric energy sector
  - Incineration (e.g., solid waste incineration plant) and glass sector
  - Processing sector
  - Sector of cement, lime and plaster
  - Sugar sector
  - Petrochemical sector
  - Sector of ceramics, brick and tiling
  - Cellulose paper sector
  - Sector of iron, aluminum and steel casting

- Training on verification
- Training on accreditation of verifiers
- Training for online MRV portal users

Step 5: Development of an online MRV data management and reporting platform

Information on GHGs emissions, including other pollutants that require monitoring can be processed by an environmental information management system. Enterprises can manage their monitoring plans and reports electronically by this platform and this system facilitates assessment process.

The following components of an online MRV system has been identified:

- Monitoring plan: this component will enable the enterprise to develop and submit a monitoring plan;
- Emission reports: this component will allow the enterprise to develop and submit an emission report based on the approved monitoring plan;
- Verification: this component will enable the verifiers to receive and inspect the annual emission report and to develop and submit an audit report;
- Administrative: this component will enable the authorized body (e.g., the relevant

department of the Ministry of Ecology and Natural Resources) to confirm the monitoring plans, to review and confirm or return the emission reports submitted that have been verified, to obtain statistical data (the number of the enterprises, the amount of the verified emissions, the list of the employees who conducted verification, etc.) and to monitor the dynamics of increase or decrease of total emissions.

Step 6: Investigation on alternatives related to market mechanisms

Roadmap on implementation of market mechanisms should be analyzed. Reports and practical exercises are considered necessary for compehensive review of the relevant design elements that must be considered when developing market mechanisms. Investigation should take into account the risks and opportunities with regard to market mechanisms or various types of payment mechanisms for carbon dioxide emissions.

The major components of discussion and investigation are described as follows:

- The process of accepting a payment tool for carbon dioxide emissions;
- Preparatory works;
- Use of models to analyze technological and economic impacts;
- Identification of the volume and dynamics;
- Reduction or prevetion of unintended effects;
- Decision-making on use of incomes;
- Control and observation;
- Assessment of the results.

Various design alternatives for each of these elements should be discussed based on the international practices. It should be planned to carry out this last proposed step several years after implementation of an effective MRV system.

3.2. Expected implementation period

The proposed period for implemenation of the activities is given below. Knowledge and practical experience should be transferred from national, regional and international experience for reliable and effective implementation of the activities proposed in this chapter. It is required to have necessary financing for the country to develop and implement these activities.

Table 3: Expected implementation period

Activities	1st year				2nd year				3rd year			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Survey related to identification of interested parties and preparation level												
2. Investigation on assessment of gaps, opportunities and obstacles in the existing legislation, and development of the relevant legislation												

3. Development of standards and templates												
4. Activities related to training and skills development for the relevant interested parties												
5. Development of an online MRV data management and reporting platform												
6. Investigation on alternatives related to market mechanisms												

3.3. Description of the duties of the interested parties

The importance of establishing correct and reliable MRV system in the country to ensure international confidence to emission reduction measures at the national level is fully understandablein the Republic of Azerbaijan. A strong institutional framework containing relevant institutional structures, as well as, necessary staff, systems and processes should be developed to establish an effective and appropriate MRV system at the national level in the country.

Though there is a system for monitoring and reporting of emissions in the country, there is a need for improvement and implementation of this system in terms of application of new systems and mechanisms of the UN Framework Convention on Climate Change. As shown in the following table, an institutional structure should be established to meet the major requirements of the MRV system.

Table 4: Possible organizational structure for MRV

Accreditation body	Verification body	Authorized body	The sanctioning bod
Azerbaijan Accreditation Centre (AzAC)	Accredited independent verifiers (the 3rd party)	The Ministry of Ecology and National Resources	The Ministry of Ecology and National Resources

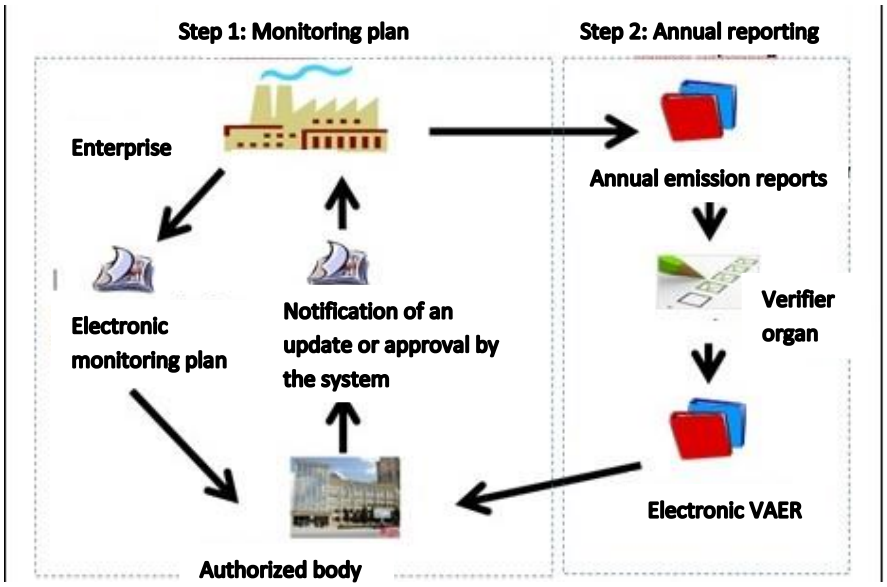
The relevant authorized body should have the authority to provide legal and operational support and to ensure uninterrupted functioning of the system. If the private sector, to be more precise, the enterprises having emission sources should monitor their emissions and report this, inspecting bodies should be independent and the 3rd party in any case. This is the most important part of the MRV system based on its reliability. Intended duties and responsibilities of the main relevant bodies are shown in the table below:

Table 5: Tasks of the bodies responsible for the MRV system

Accreditation Body	▪ Assessment of the ability of verifiers to perform verification ▪ Assessment of implementation of verification in compliance with the regulations by the verifiers ▪ Preliminary licensing of verifiers
Verification body	▪ Checking information in the report on emission to be without distortion ▪ Assessment of compliance with the relevant regulations
Authorized body	▪ Provision of instructions for enterprises ▪ Cross inspection/confirmation of a monitoring plan or emission reports
The sanction body	▪ Control over non-compliance with the regulations ▪ Control over untimely/inaccurate submission of the reports

The chart below describes how the MRV system can be managed. This model contains development and confirmation of monitoring of GHGs emissions into atmosphere, beside this, annual verification and reporting of GHGs emissions into atmosphere in compliance with the plan.

Table 6: The flow chart model of the MRV system



4. Financial and capacity needs for establishing an MRV system

As mentioned above, a strong institutional framework containing relevant institutional structures, as well as, necessary staff, systems and processes should be developed to establish an effective and appropriate MRV system at the national level in the Republic of Azerbaijan. Currently, there are emission reports at the national level and a pilot MRV investigation at the company level. However, a comprehensive analysis and assessment of the existing structure, gaps, opportunities and obstacles should be carried out in order to achieve an effective MRV system.

4.1. Financial needs

Based on international experience and the collected data so far, approximate financial assessment can be made to establish and implement an effective MRV system. According to assessment, financial needs can be identified as shown in the table below. When starting actual establishment of an MRV system, financial needs should be specified by conducting a comprehensive investigation.

Table 7: Financing needs and implemetation period

Activity	Financing (US dollars)	Implementation period
Survey related to identification of interested parties and preparation level	<250.000	3 months
Investigation on assessment of gaps, opportunities and obsta in the existing legislation in this field, and development of the relevant legislation	<250.000	12 months
Development of standards and templates	250.000 – 2.000.000	12 months
Activities related to training and skills development for the relevant interested parties	>2.000.000	12 months
Development of an online MRV data management and reporti platform	>2.000.000	24 months
Investigation on alternatives related to market mechanisms	250.000 – 2.000.000	9 months

These costs cover the measures that will be taken as preparation measures. Costs for institutional measures, accreditation/certification issues, purchase/upgrade of monitoring equipment by enterprises (if necessary), additional costs for human resources and so on will be required for implementation of the MRV system.

This system will have the following co-benefits:

- Increase of monitoring and information quality about harmful substances released into atmosphere;
- Reduction of pollutants released into atmosphere and its effect to the health of people working in manufacturing enterprises;

- Awareness raising;
- Increase of reliability in financing of mitigation projects.

If data are received at the necessary level, precise calculation of costs and profits that will incur while implementing preparation activities can be made.

4.2. Needs on capacity

There is appropriate experience and potential due to monitoring, reporting of GHGs emissions and permit for release of harmful substances into atmosphere in the Republic of Azerbaijan. A reliable MRV system aligned with international standards requires more technical and organizational potential. Enterprises will want to receive detailed information on monitoring rules on GHGs emissions, how to develop reports, as well as, necessary equipment for these activities. National MRV system will not require updated legal basis and institutional system only, but staffing requirements will also play an important role.

Establishment of an independent verification system also requires time and a human factor. Quality and quantity of needs on capacity should also be identified through a more detailed assessment of the financial needs that mentioned above.

Literature and data sources used

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3. How to Set up National MRV Systems
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4. Knowledge Product: Elements and Options for National MRV Systems

https://www.transparency-partnership.net/documents-tools/knowledge-product-elements-and-options-national-mrv-systems

5. Capacity Development for the Implementation of a Monitoring, Reporting and Verification (MRV) System for Greenhouse Gas Emissions

https://carbon-turkey.org/en

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