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| Air Quality Governance in the ENPI East Countries |
| GENERAL GAP ANALYSIS AND IMPACT ASSESSMENT  2014 update |
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Summary

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Contract Number: 2010/232-231

Country: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russian federation, Ukraine

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# Abbreviations

|  |  |
| --- | --- |
| ARM | Armenia |
| AIR-Q-GOV | Air Quality Governance project |
| AZE | Azerbaijan |
| BATs | Best available technologies |
| BEL | Belarus |
| BREF | Best Available Techniques Reference Document |
| CLRTAP | Convention on Long Range Transboundary Air Pollution |
| EIA | Environmental impact assessment |
| ELVs | Emission limit values |
| ENPI | The European Neighbourhood and Partnership Instrument |
| EU | European Union |
| GBRs | General binding regulations (requirements) |
| GEO | Georgia |
| HMs | Heavy metals |
| IPPC | Integrated pollution prevention and control |
| MoE | Ministry of Environment |
| NEAP | National Environmental Action Plan |
| NGOs | Non-governmental organisations |
| NPP | National pilot project |
| OVIs | Objectively verifiable indicators |
| POPs | Persistent organic pollutants |
| PRTR | Pollutant Release and Transfer Register |
| RECC | Regional Environmental Center for Caucasus |
| RF | Russian Federation |
| RM | Republic of Moldova |
| RPP | Regional pilot project |
| UKR | Ukraine |

# Introduction

In order to evaluate the ENPI East countries’ progress in regards to their air quality governance systems since the commencement of the “Air Quality Governance” (hereinafter – AIR-Q-GOV) project, a comprehensive analysis of current situation, as well as assessment of the project’s impacts has been undertaken. The first chapter of this report provides a structured screening and analysis of ENPI East countries’ air quality assessment and management systems, marking the changes and developments that took place since the last gap assessment carried out in 2012. The assessment covers system analysis on policy, legislative, institutional, operational, and instrumental (only in case of air quality management) levels. The information on existing situation has been acquired through communication with national coordinators (via e-mails, and telephone interviews), as well as from the deliverables and the reports of the AIR-Q-GOV project.

The second chapter of the current report analyses the contribution and impacts of AIR-Q-GOV project, analysing various available sources of information, including, but not limited to the evaluations made by independent expert (Midterm evaluation 2013 – “ROM Background Conclusion Sheets”) and argumented opinions of national focal points (acquired through e-mails and/or telephone interviews). The following focal points (or other representatives, if focal points were out of reach) provided information on AIR-Q-GOV impacts:

* Armenia – Martiros Tsarukyan, Head of Division on atmospheric air policy and regulation, Ministry of Nature Protection
* Azerbaijan – Mehman Nabiyev, Head of Sector, National Environmental Monitoring Department, Ministry of Ecology and Natural Resources
* Belarus – Andrei Pilipchuk, Head of Department on regulation on atmospheric air and ozone level impact, Ministry of Natural Resources and Environment Protection
* Georgia – Noe Megrelishvili, Senior Specialist Air Protection Division, Ministry of Environment Protection
* Republic of Moldova – Maria Borş, Superior Consultant Direction of pollution prevention and waste management
* Russian Federation – Alexander Soloviyanov, National coordinator (after consultations with the representatives of the Ministry of Natural Resources and the Environment and subordinated institutions)
* Ukraine – Liliya Kozak, Head of the Division for Air Protection of the Department for Environmental Monitoring of the Ministry of Ecology and Natural Resources of Ukraine

After assessment of results of both – gap and impact analyses, country-specific and general recommendations are provided, focusing on remaining issues of concern in the partner countries.

# Air quality assessment and management systems in the Partner Countries

In order to be able to evaluate the progress of partner countries in the field of air quality governance, as well as to indicate the remaining challenges in the field of air monitoring and assessment, the following tables will provide information of current state of affairs in the partner countries, which is derived from self-assessment made by the national experts. In order to evaluate the actual changes, the updates since the last review are underlined, and the contributions by the AIR-Q-GOV project (see Annex 1 for identification of particular AIR-Q-GOV components and sub-projects) are marked in red. The tables are followed by a brief description of changes, analysis of AIR-Q-GOV contribution and indication of previous material mistakes. The description is provided for cases where unambiguous data is available; the negative changes can be oftentimes described by the fact that previously provided information was erroneous or imprecise, and the AIR-Q-GOV contribution can be interpreted differently by different countries – while some provide a clear data (projects and deliverables) on AIR-Q-GOV direct impacts, other consider that even indirect impact (e.g. improvement of already existing system by provision of additional background information) is worthy of identifying as the project’s contribution. Therefore in some cases the project does not introduce a new instrument or capacity, but merely facilitate improvements in the existing instruments (can also manifest in amendments of legal acts).

## Air Quality Assessment System

### *Table 1: Policy Level*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Special document on air monitoring** | **No** | **Yes** | **Yes** | **Prep** | **No** | **Yes** | **No** | **No** |
| **Special document on environmental monitoring** | **Yes** | **No** | **Yes** | **No** | **Prep** | **Yes** | **Yes** | **No** |
| **Explicit provisions on air monitoring in environmental policy document** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

In Belarus the amended Decree of the Ministry of Environment “On some questions regarding organization of air monitoring” was introduced in May, 2014. The original Decree is in force since 2008, therefore the previous answers, indicating that there is no instrument on air monitoring, were not correct.

Currently “Feasibility study on the introduction of an Air Quality Monitoring system in Georgia in compliance with EU requirements, including development of the Programme of the National Ambient Air Monitoring System and elaboration of relevant guidelines” is in the development process in Georgia, thus providing grounds for air monitoring policy. The project is being implemented in the framework of the AIR-Q-GOV.

When assessing situation in the Republic of Moldova, previous imprecision emerged – namely, previously indicated information on existence of special document on air monitoring and on environmental monitoring was erroneous. In 2009 – 2010 a draft National programme on operation of the Integrated Environmental Monitoring System and on operation of National Integrated Ecological Monitoring in Moldova was drafted, yet it did not come into force. Thus the information in the table has been updated in accordance with the real situation in the country, which did not change in nature, but actually persisted during the previous review period as well.

Overall it is possible to argue that there is **no considerable system gap at policy level**, as all partner countries have explicit provisions on air monitoring either in specific instrument or as a part of other environmental policy document. Yet it has to be noted, that the actual content and principles of monitoring system design differs significantly from the EU approaches in the same field.

### *Table 2: Legislative level*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Special legal act on environmental monitoring** | **Prep** | **Yes** | **Yes** | **No** | **No** | **Yes** | **Yes** | **No** |
| **Special legal act on air monitoring** | **No** | **No** | **Yes** | **No** | **No** | **Yes** | **Yes** | **Yes** |
| **Provisions on air monitoring in the law on air protection** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Provisions on air monitoring in general law on environment** | **Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Regarding Ukraine, AIR-Q-GOV project has facilitated the development of Resolution of the Cabinet of Ministers of Ukraine №748 on 07.08.13 with amendments to the main “Resolution of the Cabinet of Ministers #391 on 30.03.1998 about Ukrainian State Environmental Monitoring”, which is a legal act addressing environmental monitoring and also establishes policy in the field of environmental monitoring thus is relevant in relation to the information provided in the Table 1 as well.

Negative changes in the case of Moldova can be described by the imprecisions in previously provided information. Though such situation does not provide grounds to identify it as a gap, as respective air quality monitoring requirements are provided in other legal acts (i.e. legislation on air protection, general law on environment). Similar situation regarding legal basis for monitoring can be observed in Georgia.

In case of Russian federation indirect AIR-Q-GOV impacts manifest in development of the Law No. 331-FZ of 2011 setting united system of environmental monitoring and providing a comprehensive basis for air quality monitoring and related activities.

There is **no considerable system gap at legislative level** - all of the partner countries have established legal basis for carrying out air quality monitoring – in some cases it manifests as a separate legal act on air monitoring, as it can be observed in the case of Belarus and Ukraine, though mostly separate air monitoring provisions are provided in general law on environment or air protection. Yet it has to be noted, that while legal basis is in place in all of the partner countries, the actual content and context of the law differ significantly from the EU approaches in the same field.

### *Table 3: Institutional level*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Air quality monitoring carried out by Hydromet** | **No** | **No** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **MS** |
| **Air quality monitoring carried out by the department of ministry** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **No** | **MS** |
| **Air quality monitoring carried out also by other institutions (e.g. public health protection service)** | **Yes** | **No** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **MS** |
| **Air quality monitoring carried out by municipalities** | **No** | **No** | **No** | **No** | **No** | **Yes** | **Yes** | **MS** |
| **Air quality monitoring carried out by enterprises** | **Prep/Part** | **Yes** | **Yes** | **Yes** | **Part** | **Part** | **Yes** | **MS** |
| **Data on air quality collected by the ministry** | **Yes** | **No** | **Yes** | **Yes** | **No** | **Yes** | **Yes** | **MS** |
| **Data on air quality collected by other institution** | **Yes** | **Yes** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **MS** |
| **Data on emissions collected by the ministry** | **Yes** | **Yes** | **Yes** | **Yes** | **No** | **Yes** | **Yes** | **MS** |
| **Data on emissions collected by other institution** | **Yes** | **Yes** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **MS** |
| **Centralized national air quality database exists** | **Part** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |
| **Centralized national emission database exists** | **Part** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Since the last revision several positive changes have been made at the institutional level, either increasing the institutional capacity of already existing and operating bodies or introducing new institutional element (Belarus, Georgia, Azerbaijan). The increase of institutional capacity has been greatly facilitated by NPPs implemented in some of the partner countries – in this respect it is noteworthy to mention Azerbaijan, where Baku Action Plan (addressing air quality issues) was drafted in the framework of NPP, setting more detailed requirements for air quality monitoring by enterprises, and facilitating hiring new qualified personnel to administer national air quality database and national emission database. The pilot project also made an in-depth evaluation of existing institutional capacity, indicating some previously unidentified gaps – for example, contrary to the information provided in the previous review, the ministry does not carry out a systematic collection of data on air quality. Acknowledgement of such gaps has facilitated the planning process to improve the institutional capacity.

In addition to State Hydrometeorological Service (Hydromet), air quality monitoring in the Republic of Moldova is currently being carried out also by the subordinated institution of the Ministry of Environment - State Ecological Inspectorate. In Moldova the data on air quality is collected by the Hydromet, while data on emissions – by the State Ecological Inspectorate. Both of these institutions are subordinated to the Ministry of Environment.

At the same time explanation on situation in Armenia in terms of air quality monitoring by enterprises has been provided – currently monitoring by enterprises is being carried out only in cases when the opinion of the operator differs from the MoE position.

Overall, there is **no considerable gap at the institutional level**, as all countries have institutions responsible for air quality monitoring and collection of data on emissions. All countries have centralised emissions’ and air quality databases (Armenia – partially).

### *Table 4: Operational level – air quality monitoring*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Total number of monitoring stations** | **26** | **26** | **66** | **9** | **19** | **696** | **171** |  |
| **From this total: Automated stations** | **8** | **Prep** | **18** | **1** | **1** | **60** | **5** |  |
| **From this total: Manual stations** | **18** | **26** | **47** | **8** | **17** | **636** | **163** |  |
| **From this total: EMEP stations** | **1** | **0** | **1** | **1** | **1** | **7** | **1** |  |
| **Parallel measurement of meteorological parameters** | **Yes** | **Yes** | **Yes** | **Yes** | **Part** | **Yes** | **Yes** | **Yes** |
| **Measurement of PM10** | **No** | **No** | **Yes** | **Yes** | **Part** | **Part** | **No** | **Yes** |
| **Measurement of PM2.5** | **No** | **No** | **Prep** | **Yes** | **No** | **Part** | **No** | **Yes** |
| **Measurement of ground level ozone** | **Yes** | **No** | **Yes** | **Yes** | **Part** | **Part** | **No** | **Yes** |
| **Measurement of sulphur dioxide** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Measurement of nitrogen dioxide** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Measurement of nitrogen oxides** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Measurement of carbon monoxide** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Measurement of benzene** | **Yes** | **Prep** | **Yes** | **No** | **No** | **Part** | **Part** | **Yes** |
| **Measurement of lead** | **No** | **Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Measurement of nickel** | **No** | **Prep** | **No** | **No** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Measurement of cadmium** | **No** | **Prep** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Measurement of arsenic** | **No** | **Prep** | **No** | **No** | **Yes** | **Part** | **Part** | **Yes** |
| **Measurement of mercury** | **No** | **Prep** | **No** | **No** | **No** | **Part** | **Part** | **Yes** |
| **Measurement of benzo(a)pyrene** | **No** | **No** | **Yes** | **No** | **No** | **Yes** | **Yes** | **Yes** |
| **Measurement of other pollutants** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Since the last review in 2012, several partner countries have increased the amount of monitoring stations, thus widening the coverage of monitoring network. In case of Azerbaijan, already in 2012 the plans to install 15 new automated stations in 4 big cities were introduced, yet, as no deadline was set, the introduction of stations is still under way.

In Moldova lead, nickel, cadmium and arsenic are measured only in precipitation. Also some precisions are made in regards to mercury and benzo(a)pyrene that are not measured in the Republic of Moldova, yet were mistakenly indicated as measured parameters in the previous review. Benzo(a)pyrene had been measured until 2004, yet due to the limited financial and technical possibilities the monitoring was ceased.

Some precisions are also made in regards to Azerbaijan – previously no information was provided in regards to benzene, nickel, cadmium, arsenic, mercury and benzo(a)pyrene. Establishment of the system of measurement of all of the listed parameters, with exception of benzo(a)pyrene, is in preparation stage as a result RPP1. While in case of benzo(a)pyrene and “other pollutants” not listed in the table, no measurements are being made or planned in the nearest future. Measurements of benzo(a)pyrene were previously made on case by case basis, though such practice was discontinued. At the same time in case of SO2, NO2, NOx and CO, RPP1 and NPP improved country’s overall potential for monitoring of the pollutants at issue.

While some improvements can be indicated, still **the insufficient number of automated stations as well as non-compliance of air quality monitoring network with basic QA/QC requirements in most countries** can be identified as a considerable gap. It is also important to mention that the majority of observed countries **do not have a comprehensive PM10 and PM2.5 monitoring system**. Similar situation persists in relation **to other pollutants as arsenic, nickel, mercury (see table).**

### *Table 5: Operational level – national emission inventories*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Data on emissions from registered stationary sources collected** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Data on emissions from diffused (non- registered) sources estimated** | **No** | **No** | **Yes** | **Part** | **No** | **Part** | **Part** | **Yes** |
| **Data on emissions from mobile sources calculated** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Annual emission inventory – sulphur dioxide** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Annual emission inventory – nitrogen oxides** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Annual emission inventory – VOC** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Annual emission inventory – ammonium** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Annual emission inventory – other pollutants** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Some precisions have been made in case of Azerbaijan, where contrary to previously provided information, no annual emission inventories of SO2 and NOx are made – while some emission inventories of the respective pollutants are being made, it does not happen on a regular-annual basis.

Important contribution stemming from AIR-Q-GOV project can be observed in the case of calculation of emissions from mobile sources, which was carried out in Azerbaijan and Armenia in the framework of the project.

The impact of AIR-Q-GOV in Georgia can be described by inclusion of heavy metals in the reporting requirements for enterprises as of 2014.

Yet the main system gap still lies in the **lack of data on emissions from diffused sources**, as no particular advancements can be observed from the last review of 2012.

### *Table 6: Operational level – data processing*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Analytical centre exists** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Dispersion models at national level** | **Prep** | **No** | **Prep** | **No** | **No** | **Yes** | **Part** | **Yes** |
| **Dispersion models at sub-national level** | **Prep** | **Prep** | **Prep** | **Yes/Prep** | **Prep** | **Yes** | **Prep** | **Yes** |
| **Air quality projections** | **Prep** | **Prep** | **Part** | **No** | **Part** | **Yes** | **Part** | **Yes** |
| **Emission projections** | **Part** | **Part** | **Yes** | **Part** | **Part** | **Yes** | **Yes** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Some corrections of previous mistakes were made in case of the Republic of Moldova, as air quality projections and emission projections are available only partially, covering only some areas and/or pollutants.

At the same time positive changes, facilitated by the RPP1 and RPP2, manifest in development of air quality projections in Armenia, Azerbaijan and Ukraine and emission projections in Armenia, Azerbaijan, Georgia, Moldova and Ukraine.

In case of Armenia developments manifested in sub-national dispersion models and air quality projections are expected after full implementation of RPP3. At the same time emission projections in Armenia are available only for transport sector – “Transport sector emissions projections. Scenario Analysis 2010-2030”.

Since the last review an air pollution dispersion model for Tbilisi was developed using ADMS Urban programme. In addition air pollution dispersion model for Batumi is in the stage of development under AIR-Q-GOV project (using THOR programme).The same project (RPP3) using THOR programme facilitates development of dispersion models at sub-national level in Ukraine and Belarus.

Previously major gap was rooted in the limited application of modelling techniques, which was addressed by RPP3 that facilitated application of THOR programme. Yet the latter project facilitated application of the mentioned modelling techniques as case studies on urban level, thus leaving **a system gap regarding dispersion modelling at national level.**

### *Table 7: Operational level – air quality and emission data publication*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Annual reports on air quality** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Annual report on the environment** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |
| **Specialized annual statistical yearbook** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |
| **General statistical yearbook** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Quarterly bulletins** | **No** | **No** | **Yes** | **Yes** | **Yes** | **Part** | **Yes** | **MS** |
| **Monthly bulletins** | **Yes** | **Yes** | **No** | **Yes** | **Yes** | **Part** | **Yes** | **MS** |
| **Weekly bulletins** | **No** | **Yes** | **No** | **No** | **Yes** | **Part** | **No** | **MS** |
| **Daily bulletins** | **No** | **Yes** | **Yes** | **No** | **Yes** | **Part** | **Yes** | **MS** |
| **Website (annual data available)** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Part** | **Yes** | **MS** |
| **Website (on-line / near-to-real time data)** | **No** | **No** | **Yes** | **No** | **Part** | **Part** | **Part** | **MS** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Establishment of website with annual data and on-line/near-to-real time data is planned in Azerbaijan in the future, though has not yet taken place.

Contribution from workshops organized in the framework of AIR-Q-GOV can be observed in the case of Ukraine, where quality of the annual reports on air quality was improved as a result.

The major system gap in most of the cases still lies in **the absence of on-line information on air quality.**

## Air Quality Management System

### *Table 8: Policy Level*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Special document on air protection** | **No** | **Yes** | **No** | **No** | **Prep** | **Yes** | **Part/Prep** | **Yes** |
| **Explicit provisions on air protection in general environmental policy document** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Specific document (policy, action plan) on particular issues (e.g. POPs or Heavy metals)** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Part** | **MS** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Negative changes in case of provisions on air protection in general environmental policy document in Armenia are explained with the fact that 5-year period for previous (2nd) NEAP has passed and currently there are no substitute documents.

As to the specific documents, AIR-Q-GOV project facilitated development of a number of sectoral documents, like National Action Plan for ratification and implementation of CLRTAP protocols in Georgia, which has been drafted in the framework of RPP1. The Action Plan sets goals for implementation of Gothenburg, POPs and Heavy Metals’ protocols of CLRTAP. AIR-Q-GOV also facilitated changes at a policy level in Azerbaijan, where air protection policy framework was prepared during the implementation of the NPP.

Still major system gap at a policy level lies in the fact that part of the observed countries (Armenia, Belarus, Georgia) **do not have air protection policy document**. While Belarus and Georgia have air protection provisions in general environmental policy document, in Armenia such provisions are absent due to expiration of previous NEAP.

### *Table 9: Legislative level*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Special legal act on air protection** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Provisions on air protection in general law on environment** | **Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Explicit provisions on air protection in other laws** | **Yes** | **Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

In April 2014, Law (N 1193-VII (1193-18) 09.04.2014, Verkhovna Rada, 2014, N 23, ст.873), regarding the amendments and changes to the main “Law of Air Protection in Ukraine” was adopted, reducing the number of permits and increasing their duration in accordance with the EU approaches. These changes were facilitated by the AIR-Q-GOV project.

As to the other laws – EIA law, setting air quality requirements, has been drafted in Azerbaijan, yet the adoption of the document is pending.

**No major system gaps can be observed on the legislative level** – all of the partner countries have legal basis for implementation of air protection measures. In some cases (e.g. Azerbaijan, Ukraine) amendments in legal acts on air protection were made due to AIR-Q-GOV projects in respective countries. Yet it has to be noted, that while legal basis is in place in all of the partner countries, the actual content and context of the law differ significantly from the EU approaches in the same field.

### *Table 10: Institutional level*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Main central competent authority** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Other central authority with competencies in air quality management** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Supporting institutions specialized in air quality (hydro-meteorological, scientific research institutes, institutes of academies of sciences)** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States).Changes underlined. AQGOV contribution marked in red*

In Ukraine the contribution of the project can be explained by the fact that various capacity building activities, implemented under AIR-Q-GOV projects (pilot projects and workshops) facilitated strengthening of institutional capacity of the authorities.

All of the partner countries without exceptions have designated institutions responsible for air quality management issues. **Accordingly, there are no system gaps at institutional level in the partner countries.**

### *Table 11: Instrumental level: Air quality standards*

|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PM10** | **Yes** | **Prep** | **Yes** | **No** | **No** | **Yes** | **No** | **Yes** |
| **PM2.5** | **Yes** | **Prep** | **Yes** | **No** | **No** | **Yes** | **No** | **Yes** |
| **Ground level ozone** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Sulphur dioxide** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Nitrogen dioxide** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Nitrogen oxides** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Carbon monoxide** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Benzene** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Lead** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Nickel** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Cadmium** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Arsenic** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Mercury** | **Yes** | **Yes/Prep** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Benzo(a)pyrene** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Other pollutants** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |
| **Alert thresholds** | **No** | **No** | **No** | **No** | **No** | **No** | **No** | **Yes** |
| **Standards for protection of vegetation/ecosystems** | **No** | **No** | **Yes** | **No** | **No** | **Yes** | **No** | **Yes** |
| **Compliance deadlines** | **No** | **No** | **No** | **No** | **No** | **No** | **No** | **Yes** |
| **Zones/agglomerations** | **No** | **No** | **No** | **Prep** | **No** | **No** | **No** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Since the last review, Armenia and Azerbaijan have made a progress in the field of air quality standards, developing PM10 and PM2.5 standards. In case of Azerbaijan the introduction of the standards, which will be based on the results of RPP1, is currently in progress.

In Ukraine, standards of ground level ozone were elaborated with assistance of the AIR-Q-GOV project.

It is also important to mention that Georgia is the only partner country in which air quality zones/agglomerations were defined in the framework of NPP.

Generally, in partner countries air quality standards have been inherited from the Soviet Union system, based on hygienic limits without assessing feasibility of compliance. In several cases (see answers marked in red) AIR-Q-GOV project facilitated introduction of new air quality standards.

**Still the major gap persists in terms of lack of PM10 and PM2.5 standards in some of the partner countries** (Georgia, Moldova, Ukraine; in Azerbaijan the introduction of standards is in progress). Another important aspect is that **existing standards in the partner countries do not correspond to the current EU approach on establishing standards**.

### *Table 12: Instrumental level: Command and control instruments*

|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Technology based emission limit values for stationary sources** | **Yes** | **No** | **Part** | **No** | **No** | **Prep** | **Yes** | **Yes** |
| **Generally binding technical requirements for operation of particular categories of stationary sources** | **Prep** | **No** | **Part** | **No** | **Part** | **Prep** | **Part** | **Yes** |
| **Best available techniques defined** | **Yes** | **Prep** | **Part** | **No** | **Part** | **Prep** | **Part** | **Yes** |
| **Fuel quality standards** | **Yes** | **Prep** | **Yes** | **Yes** | **Prep** | **Yes** | **Yes** | **Yes** |
| **Emission standards for vehicles** | **Yes** | **Yes** | **Yes** | **No** | **No** | **Yes** | **Yes** | **Yes** |
| **Emission standards for non-road mobile machinery** | **Yes** | **No** | **Yes** | **No** | **No** | **Yes** | **Yes** | **Yes** |
| **Ban on import of obsolete vehicles** | **No** | **Yes** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **MS** |
| **Administrative measures in the case on non-compliance** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Self-monitoring by enterprises** | **Prep** | **No** | **Yes** | **Yes** | **Prep** | **Yes** | **Yes** | **Yes** |
| **Reporting by enterprises** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

In Azerbaijan both technology based ELVs for stationary sources and generally binding technical requirements for operation of particular categories of stationary sources are planned. BATs and fuel quality standards are currently in the preparation stage – it is planned to set these requirements in legal provisions, which will be developed taking into account the results of the AIR-Q-GOV project.

In some cases AIR-Q-GOV project also facilitated development of enforcement mechanism, as in the case of Azerbaijan where legislation prescribing administrative measures in case of non-compliance was introduced.

In Armenia introduction of technology-based ELVs and BATs has been facilitated by the NPP. GBRs for particular stationary sources are in preparation. AIR-Q-GOV project under Component 1 has provided a basis for establishing GBRs for small and medium combustion plants (boiler houses) and gas stations, drafted based on the EU requirements and analysis of practice in three EU member states (Czech Republic, Latvia and Great Britain).

As for the Republic of Moldova – BATs are partially defined by the Order No. 61 from 09.10.2014 of the Ministry of Environment regarding approval of Guidelines for implementation of best available techniques for waste water emissions from the food industry.

The impact of AIR-Q-GOV in Georgia can be described by inclusion of heavy metals in the reporting requirements for enterprises as of 2014.

Regarding Azerbaijan’s answer “Emission standards for non-road mobile machinery” has changed to “no” due to the lack of information in the previous review. Similar argument is applicable in case of ban of obsolete vehicles in Armenia. Some precisions are also introduced for Republic of Moldova, where fuel quality standards are actually in the stage of preparation.

Many system gaps that were identified in 2012 still remain in 2014: **absence of technology based ELVs in some of the partner countries** (though situation has improved in some of the countries since the last review) **and absence of GBRs for stationary emission sources**.

### *Table 13: Instrumental level: Economic instruments*

|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Air pollution charges** | **Yes** | **Yes** | **Yes** | **No** | **Yes** | **Yes** | **Yes** | **MS** |
| **Import duty on obsolete cars** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |
| **Penalties** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |
| **Environmental fund(s)** | **No** | **No** | **No** | **No** | **Yes** | **Part** | **Yes** | **MS** |
| **Incentives** | **No** | **No** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States).Changes underlined. AQGOV contribution marked in red*

Correction regarding existence of incentives was made in case of Azerbaijan and Armenia.

The change in regards to existence of environmental funds in Belarus can be explained by the fact that the former funding resources from environmental funds have been channelled to the state budget, foreseeing funding for environmental measures from the state budget.

Although the existence of environmental funds can be considered as a potentially effective financial incentive tool, the lack of funds in some countries cannot be seen a major system gap, if appropriate financing can be available from state budget or other incentives are in place. **Therefore there is no considerable system gap in the field of economic instruments.**

### *Table 14: Instrumental level: Voluntary instruments*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **ISO 14 000** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Eco-labelling** | **No** | **No** | **Yes** | **No** | **Part** | **Yes** | **Yes** | **Yes** |
| **Voluntary agreements** | **No** | **No** | **Yes** | **No** | **No** | **Yes** | **No** | **MS** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

In the Republic of Moldova eco-labelling scheme exists, yet only for “ecologically clean agricultural and food products”, which can be compared to organic farming eco-labels. In addition, previous information about the existence of voluntary agreements was not available - according to updated information, voluntary agreements are not practiced as incentive in the Republic of Moldova.

Changes in relation to voluntary agreements in Georgia are explained by the fact that the agreement with Heidelberg Cement was signed within the framework of the PRTR project and it is no longer in force, as the objective of the agreement has been reached.

Voluntary instruments are in an early stage in the partner countries. While ISO 14000 exists, it is not widely practiced (generally by enterprises exporting their production to markets where the system is already well known and widely applied). Some countries have eco-label mechanisms in place, though generally their popularity and applicability is lower than in the EU countries. Though introduction and popularization of voluntary instruments can serve as an effective means of incentive when coupled with appropriate national policy(e.g. green public procurement), **the lack of some instruments in partner countries does not identify system gap**.

### *Table 15: Operational level: Permitting and enforcement*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ARM** | **AZE** | **BEL** | **GEO** | **RM** | **RF** | **UKR** | **EU** |
| **Integrated permitting in place** | **Prep** | **Prep** | **Part** | **Part** | **No** | **No** | **Prep** | **Yes** |
| **Permitting** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |
| **Enforcement [[1]](#footnote-1)** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **MS** |

*Code: “Part” (partially), “Prep” (in preparation), “MS” (at the level of Member States). Changes underlined. AQGOV contribution marked in red*

Previously the most significant gap on operational level was the lack of integrated permitting system in all of the partner countries at issue (considering that information on full implementation of integrated permitting legislation in Belarus was incorrect). Yet the situation has developed since the last review with the implementation of the IPPC component in the framework of the AIR-Q-GOV, which facilitated progress towards introduction of integrated permitting system in Azerbaijan (currently in stage of preparation) and Ukraine, where the most impact was observed in relation to capacity building, organization of trainings and seminars on IPPC-related issues.

**Though situation with integrated permitting and control has improved since the last review, the lack of it in some countries and fragmented application in others can still be considered as a gap.**

# AIR-Q-GOV project’s impacts and further recommendations

The overall objective of the AIR-Q-GOV project, as it was defined prior to commencement of the project activities, is “the improved and sustainable management of natural resources including nature protection, reduced effects of climate change and increased environmental cooperation and awareness”. The overall objective was supplemented by a number of specific objectives and targets to be achieved after implementation of the project. The objective and targets of the AIR-Q-GOV are supposed to be achieved through a number of activities under the three Components of the project as well as NPPs and RPPs (see Annex 1 of the report).

The following specific objectives were set for the project:

1. To improve the convergence to European legislation and regulations (air quality related legislation and IPPC) contributing to the improved air quality and strengthen implementation and compliance;
2. To improve the implementation of Multilateral Environmental Agreements (especially UN ECE CLRTAP and related protocols);
3. To raise environmental awareness through cooperation at national, regional and sub-regional levels among decision makers, industry and civil society.

According to the Terms of Reference of the project, it was also envisaged to help partner countries to introduce IPPC, co-benefit approach to air quality management and climate change mitigation, and to stimulate private sector to voluntary activities.

In order to assess the impacts of the project at its last stage of implementation, the following sections will analyse the information provided by the national focal points, experts, project progress reports and deliverables, as well as midterm evaluation results, comparing all of the available information to the initial expectations and justification of the project. The chapters will analyse prior issues and existing progress of the project, and the actual situation and impacts, as identified by the focal points (or other representatives), which will be provided in the boxes prepared for each partner country.

After evaluation of impacts and taking into account still existing gaps, the recommendations tailored to the needs of particular countries will be provided, while the recommendations for region as a whole are available in the last chapter of the report.

## Armenia

According to the evaluation carried out during assessment of priorities for support in the framework of the AIR-Q-GOV, the need to improve air quality monitoring network has been identified as one of the main priorities. In addition, Armenia has also expressed its willingness to approximate its system to the environmental *acquis* and facilitate implementation of CLRTAP protocols, thus reforming the existing system and legal basis.

The country’s identified needs have been addressed in the activities under the three project Components (“Common activities”, “Activities addressing the Industrial Sector, including Energy”, “Activities addressing the Transport Sector”), RPP1, RPP3, and the NPP – “Development of emission levels associated with the best available techniques and emission limit values for selected sectors and installations” – the aim of which was to implement air emission levels associated with the BAT and emission limit values at sector level in accordance with the environmental *acquis*, improving the efficiency of air regulation and providing a template procedure for other national economic sectors and countries of the region. The actual results of the AIR-Q-GOV project’s activities, achieved to date, have been evaluated by the national focal point and are presented in the box below.

|  |  |
| --- | --- |
| **National assessment of AIR-Q-GOV impact** | |
| **Overall impact:** | Positive |
| **Areas where impact is the most evident:** | * Policy and strategic level:   + Action plan for ratification of CLRTAP protocols (RPP1) * Legislation:   + Amendments in law “On protection of ambient air” and inclusion of technology-based emission limit values. The draft law will be presented to the Government on 18.11.2014. * Assessment:   + Introduction of THOR system in the monitoring centre   + Development of COPERT 4 interface in Armenian * International issues:   + Action plan for ratification of CLRTAP protocols (RPP1) * General capacity building, including:   + on introduction of IPPC system   + on application of COPERT 4   + on application of THOR   + on air pollution dispersion modelling |
| **Abandoned projects:** | High risk of discontinuation of introduction of THOR system, due to late commencement of the project, which implies a possibility of not finishing it by the set deadlines. |
| **Success story:** | * NPP – “Development of emission levels associated with the best available techniques and emission limit values for selected sectors and installations”. The developed ELVs have been included in the draft law and are pending the approval by the Government. * RPP1 – “Action plan for ratification of CLRTAP protocols”. The plan was successfully developed and the measures and recommended timeframe are identified as feasible. The process of implementation of measures is under way. |
| **Further national plans:** | * Implementation of IPPC system * Ratification of the three signed CLRTAP protocols (Heavy metals’, POPs, Gothenburg) * Introduction of CORINAIR emission register * Gradual implementation of THOR system (see section “Abandoned projects” above) * Development of system for collection of data for emission register and modelling of pollution, and application of COPERT 4 |
| **Priorities for further assistance:** | * Implementation of action plan on ratification of CLRTAP protocols * Improvement of monitoring system * Improvement of legislation and methodological basis |

Notwithstanding that the improvement of air quality monitoring network was listed as the priority of the country, the situation has not lead to the total elimination of existing gaps – according to the latest available information (see Gap assessment chapter) the number of automated monitoring stations is insufficient, also currently monitoring by enterprises is being carried out only in cases when the opinion of the operator differs from the MoE position. The country also lacks comprehensive centralized national databases on air quality and emissions.

Taking into account the information derived from the gap analysis, assessment of impacts provided by the focal point, as well as evaluation of the project’s progress in 2013, the following conclusions depict the current status of reaching project’s objectives.

*Objective 1 - improve the convergence to European legislation and regulations*

Development of legislation and regulations on air quality are among outcomes of two RPPs, project Component 3 and NPP. A Draft Law on introduction of amendments into the Law “On Atmospheric Air Protection” of the Republic of Armenia was developed (the Program of Armenian Government Activity over 2014, para 20) and submitted for discussion to respective departments of the Ministry. The proposed amendments aim to establish a legal framework for introduction of the best available techniques and were developed within the NPP. Also the introduction of BREF guidelines for specific industrial sectors was facilitated via NPP. In general, all activities that are focused on introduction of IPPC system and development of respective instruments contribute to gradual harmonisation with the EU permitting legislation (Component 2 and NPP). At the same time harmonisation of Armenian legislation with the EU directives in the transport sector was promoted through the Component 3. All legal acts developed in Armenia in the framework of the AIR-Q-GOV ensure better convergence and approximation to the EU legal instruments, yet the actual achievement of set objective can be discussed only after adoption of the legal acts (which has not yet taken place).

*Objective 2 – improve the implementation of Multilateral Environmental Agreements*

Better compliance with international standards has been facilitated within the project Component 2, Component 3, NPP and RPP1. Developed national BAT guidelines for several selected sectors, review of IPPC/BAT elements and drafting of legal acts and reference documents on BAT for prevention and control of air emissions are among outcomes of Component 2 and NPP. More specifically, international standards are promoted by NPP through defining BAT principles on example of 5 industrial enterprises and by Component 3 – by introduction of COPERT emission model in transport sector of Armenia. At the same time facilitation of ratification and implementation of CLRTAP protocols, which was identified among country’s as well as project’s priorities, has been pursued in the framework of RPP1, drafting the National Plan of Actions for ratification and implementation of Protocols of the Convention on Long-Range Transboundary Air Pollution. As the importance of the measures envisaged in the National Plan has been acknowledged by the country, it is possible to make a reasonable assumption that the plan will be implemented.

*Objective 3 – raise environmental awareness*

Better environmental awareness and capacity-building are promoted through comprehensive training programmes under the 3 project Components and RPPs. The trainings included such subjects as “introduction of IPPC system”, “application of COPERT 4”, “application of THOR”, and “air pollution dispersion modelling”, thus ensuring capacity building of the relevant authorities. The actual effectiveness of the measures can be assessed in longer timeframe, but it has already been identified by the relevant stakeholders that the capacity building activities were especially valuable.

*Overall objective*

The project contribution to the improved and sustainable management of natural resources, including nature protection, reduced effects of climate change and increased environmental cooperation with partner states is realistic in Armenia. Yet the project impact could be considered as significant only with the precondition that draft legal acts and regulations will be adopted and implemented in practice, and the measures implemented on the scale of particular industry will be replicated in other sectors as well. The possible problem of actual implementation lies in the financial viability, as the budgetary allocations to the air quality issues in Armenia are considered as non-sufficient.

**Country-specific recommendations:**

I Development of policy documents and instruments:

1. Development of air protection policy document
2. Elaboration of Preliminary Air Quality assessment and designing of the air quality monitoring network in accordance with the EU principles

II Implementation of policy documents and instruments:

1. Provision of support in actual implementation of the “National Plan of Actions for ratification and implementation of Protocols of the Convention on Long-Range Transboundary Air Pollution”, leading to the ratification of the protocols at issue
2. Implementation of air quality assessment system using techniques provided in the framework of the AIR-Q-GOV project
3. Support in implementation of the IPPC system
4. Improvement of air quality monitoring system (incl. introduction of more automated stations and promotion of monitoring by operators)
5. Development of comprehensive centralized national databases with air quality and emission data and introduction of emission estimation methodologies complying with CLTRAP requirements
6. Introduction of system to estimate emissions from the diffused sources complying with CLTRAP requirements

III Capacity building and pilot projects:

1. Capacity building and education of top-level decision makers on air quality issues
2. Promotion of education of general public and stimulation of private sector to use voluntary tools

## Azerbaijan

Prior to commencement of the AIR-Q-GOV activities, it was noted that the situation in relation to air quality assessment and management in Azerbaijan was not satisfactory. Air quality assessment and management system was not strong enough to successfully tackle air pollution issues, and notwithstanding the existence of significant air quality problems (especially in Baku), it was not set as a priority in national environmental policy documents.

The country’s air governance issues were addressed in activities carried out under the three project Components (“Common activities”, “Activities addressing the Industrial Sector, including Energy” and “Activities addressing the Transport Sector”), Azerbaijan also participated in all three RPPs (RPP2 foresaw development of the section of the new EIA regulation covering integrated pollution permitting in Azerbaijan) and NPP “Improvement of legislation on assessment and management of ambient air”, which addressed the main gaps in the air quality governance system in Azerbaijan, with objective to facilitate improvement of legislation on assessment and management of ambient air, including preparation of draft action plan for Baku and draft national strategy on air quality assessment and management. Actual impact of the implemented activities, as evaluated by the focal point, is encompassed in the following box.

|  |  |
| --- | --- |
| **National assessment of AIR-Q-GOV impact** | |
| **Overall impact:** | Positive |
| **Areas where impact is the most evident:** | * Legislation:   + NPP – assessment and recommendations, standards proposed, introduction of BAT and IPPC concept via RPP2 * Assessment:   + Assessment of transport emissions (RPP3) * Management:   + Draft Action Plan for Baku (NPP) * International issues:   + Road Map for implementation of CLRTAP Protocols (RPP1) * IPPC:   + Addendum to EIA law (Chapter 4) – drafted, but not adopted yet * General capacity building:   + Seminars (incl. on application of COPERT 4)   + Training   + Study tours |
| **Abandoned projects:** | - |
| **Success story:** | * RPP1 ensured involvement of many stakeholders from different sectors, thus providing feeling of ownership and insuring better prospective for implementation of project results |
| **Further national plans:** | * Development of National Environmental Protection Programme 2020, which will include points on quality of ambient air * National Renewable Energy Programme, including air quality considerations * Relocation of industrial plants to the areas outside the city borders * Extension of traffic control |
| **Priorities for further assistance:** | * Implementation of measures encompassed in the developed Road Map for implementation of CLRTAP Protocols * Implementation of IPPC system and application in other sectors * Improvement of data necessary for assessment of emissions from transport sector * Improvement of air quality monitoring system * Transfer to EURO 5 emission standard * Improvement of fuel quality * Continue capacity building |

Though noteworthy improvements have been achieved through AIR-Q-GOV activities (capacity building, introduction of legal acts and other activities described in a more detail further in the text), there are still some considerable gaps, obstructing Azerbaijan from realization of its full potential in terms of air quality assessment and management. Among these obstacles, such aspects as absence of automated monitoring stations, absence of PM10 and PM2.5 measurements, lack of annual emission inventories, lack of dispersion models at national and sub-national level, as well as some other system gaps indicate the need for additional activities to be taken in order to ensure the effective solution of the problem.

According to the assessment of the available information, which stems from gap analysis, progress reports, evaluation of 2013, as well as opinion of focal point, the currently identifiable AIR-Q-GOV impacts are provided below.

*Objective 1 - improve the convergence to European legislation and regulations*

The improved convergence to European legislation and regulations is addressed through the preparation of the draft National Strategy on Air Quality Assessment and Management and the draft Action Plan for Baku which have been drafted in the framework of NPP. The development of the section on IPPC for integration in EIA law under RPP2 has also facilitated achievement of the objective. Yet actual achievement of results can be identified only after adoption of the relevant legal acts.

*Objective 2 – improve the implementation of Multilateral Environmental Agreements*

The improved implementation of CLRTAP is possible through the Component 1 and RPP1, in the framework of which the National Plan of Actions for ratification and implementation of Protocols of the Convention on Long-Range Transboundary Air Pollution has been developed.

*Objective 3 – raise environmental awareness*

Raising environmental awareness through cooperation at national and regional levels among decision makers, industry and civil society can be observed through various project components. Special emphasis shall be put on the capacity-building and awareness-raising results stemming from the RPP1 activities, which, according to the focal point, ensured involvement of many stakeholders from different sectors, thus providing feeling of ownership and ensuring better prospects for implementation of project results.

*Overall objective*

It has been identified that the project may contribute well to its Overall in Azerbaijan. Its impact in the sector is realistic if actual adoption and implementation of the National Strategy on Air Quality Assessment and Management and the draft Action Plan for Baku, which sets actual measures to reduce pollution in the city, will take place.

The project’s effect on environment and health of population is realistic in the long-term, provided that transport-related emission standards will be introduced to combat pollution caused by vehicles (thereby encouraging the use of the public transport and other environmentally friendly transport means), and implementation of BAT for the selected industrial sectors will be ensured, which is especially important for air quality in Baku and other urban areas of Azerbaijan.

The overall implementation potential in Azerbaijan can be identified as rather promising, as the financing is being allocated from state budget, in addition foreseeing some funding from international donors and organizations (as envisaged in the draft National Strategy on Air Quality Assessment and Management).

**Country-specific recommendations:**

I Development of policy documents and instruments:

1. Expansion of IPPC legislation
2. Elaboration of Preliminary Air Quality assessment and designing of the air quality monitoring network in accordance with the EU principles

II Implementation of policy documents and instruments:

1. Implementation of the National Plan of Actions for ratification and implementation of Protocols to the Convention on Long-Range Transboundary Air Pollution (recommended to implement the instrument using the country’s own capacity and means)
2. Improvement of air quality monitoring system (incl. introduction of automated stations)
3. Air quality assessment based on modelling techniques complying with the EU principles
4. Assessment of existing data and improvement of data quality to a level necessary for comprehensive evaluation of transport emissions, introduction of emission estimation methodologies complying with CLTRAP requirements
5. Introduction of system to estimate emissions from the diffused sources complying with CLTRAP requirements
6. Implementation of IPPC system, ensuring effective enforcement
7. Support in implementation of the draft National Strategy on Air Quality Assessment and Management and the draft Action Plan for Baku

III Capacity building and pilot projects:

1. Capacity building and education of top-level decision makers on air quality issues
2. Promotion of education of general public and stimulation of private sector to use voluntary tools
3. Implementation of transport planning pilot projects

## Belarus

Though Belarus had been effectively addressing issues related to its national air quality assessment and management system, and striving to approximate it with the EU system already prior to commencement of AIR-Q-GOV project, it had a number of air quality governance related problems mainly stemming from activities in the cement industry (which is among the major industrial pollution sources in the country). The national policy of Belarus had also identified willingness for ratification of CLRTAP protocols (namely – Gothenburg, HMs, POPs), yet lack of measures facilitating the ratification was deterring the process.

Keeping in mind the above-mentioned specific priorities of the country, as well as other identified system gaps, a number of activities were implemented under the three project Components, RPP3 and NPP – “Development of technology-based emission limit values and a self-monitoring system in the cement industry”. The actual impacts of the AIR-Q-GOV have been assessed by the focal point and provided in a concise manner in the box below.

|  |  |
| --- | --- |
| **National assessment of AIR-Q-GOV impact** | |
| **Overall impact:** | No impact  Explanation: the project covered a broad region with countries that have significant differences; therefore specific interests of Belarus could not be addressed in effective manner. The lack of financial resources available for NPPs resulted in a difficulty with involvement of national experts; also the NGO involvement in Belarus was not ensured. The distribution of funding, carried out so as to cover all tasks foreseen in all of the project countries, was not efficient. In addition, the project lacks tangible results (e.g. observable in relation to IPPC component), and the project results are not provided in a clear and understandable manner on the project’s website. Also the scarcity of information exchange between the project management and MoE was mentioned as an obstacle to effective achievement of the envisaged results. |
| **Areas where impact is the most evident:** | It has been noted, that notwithstanding the actual objectives, the project failed to demonstrate that the air quality governance should be a high priority issue in Belarus, as top-level decision makers are still not aware of the basic air quality assessment and management principles. |
| **Abandoned projects:** | In spite of the high potential of the IPPC component, it did not result in actual tangible actions. |
| **Success story:** | - |
| **Further national plans:** | * Implementation of Gothenburg protocol (as part of Green Economy project) * Improvement of air quality management system (monitoring equipment, review of legislation, unified register of monitoring data) |
| **Priorities for further assistance:** | * Assessment of impacts from transport sector – both on national and urban scale * Pilot projects as “green cities”, smart solutions for urban traffic * Practical implementation of national IPPC regulations |

The progress in reaching the objectives of the AIR-Q-GOV project have been outlined below and take into consideration the results of the ROM (mid 2013), assessment by focal point, reports, deliverables, as well as gap assessment. In evaluating the AIR-Q-GOV impact in Belarus we have taken into account the opinion of Mr. Sergey Zavyalov, Head of the Division of Regulation on Atmospheric Air and Water Resources impact, Ministry of Natural Resources and Environmental Protection, who led the Belarus delegation at the Final Conference. His comments offered a more detailed assessment of the Project impact in Belarus and in some respects they contradicted the national assessment provided by the focal point. It is worthy to mention that the overall impact was assessed as positive by the Belarus delegation and the following areas were specifically acknowledged as sectors where impact was most evident:

* capacity building significantly contributed to solving Belarus’s chronic lack of qualified experts;
* IPPC - Belarus NPP was an important achievement. It was stated that it would be beneficial to have more such projects in the future and the results of the NPP will serve as an example for other industrial sectors;
* Significant assistance was provided by the project in the fields of air quality monitoring, pollution modelling and emission inventory.

*Objective 1 - improve the convergence to European legislation and regulations*

The improved convergence to European legislation and regulations was expected to be achieved primarily through NPP which dealt with provision of support of phase-in implementation of integrated permits regarding monitoring conditions for cement kilns in particular and IPPC installation in general. It aimed to fill the gap in national secondary legislation related to organization of air emissions self-monitoring system in cement industry, capacity building and information dissemination for environmental compliance and enforcement system. Yet, notwithstanding that the project was implemented successfully and had a high potential of contributing to fulfilling the objective, some follow-up activities aimed at actual implementation of developed instruments is necessary to ensure tangible results. The noteworthy contribution of NPP in introducing IPPC system in the cement sector has been acknowledged by Belarus delegation at the Final Conference, The results of the project are used in developing both technical documentation and legislation, the implementation of which should facilitate introduction of IPPC in other sectors as well. According to the evaluation by independent auditor, the possible assistance of the EU Delegation in “Development of IPPC for enterprises of cement industry and Action Plan for transition of other industries to integrated permitting” in pursuance of the Presidential Decree of 17 November 2011 and relevant governmental resolutions may significantly contribute to project effectiveness, impact and sustainability.

*Objective 2 – improve the implementation of Multilateral Environmental Agreements*

As to the improved implementation of CLRTAP, it has been facilitated through activities implemented in the framework of Component 1, addressing emission inventory, as well as Component 2, providing training and recommendations on IPPC/BAT elements and prevention and control of air emissions. Yet, while the project provided good basis, according to the information provided by the focal point, the full potential has not been reached and additional activities, addressing implementation of Gothenburg protocol, are foreseen in the framework of another project.

*Objective 3 – raise environmental awareness*

The third objective, aiming at raising environmental awareness through national, regional and sub-regional cooperation and involvement of civil society and private sector is a cross-cutting issue for the two objectives listed above. It is realised through transparent decision making process and output quality assurance procedure, collaboration with enterprises and NGOs in the course of NPP implementation. Nevertheless, according to the information provided by the focal point, the activities were not sufficiently effective in demonstrating that the air quality governance should be a high priority issue in Belarus, as top-level decision makers are still not sufficiently aware of the basic air quality assessment and management principles. While such assertion does not fully correspond to the position stated by the delegation during the Final Conference, where the positive impact of the project and its capacity building activities was specifically noted, the issue of the support from top-level decision makers can still be marked as topical.

*Overall objective*

Good prospects for project impact in relation to overall objective were identified during mid-term evaluation. The evidence of “reduced health and environmental risks from air pollution” could result in long-term from achievement of the objectives, aimed at improved convergence to the European legislation and regulations, improved implementation of CLRTAP and local capacities through cooperation at regional, sub-regional, national and local levels. According to the information presented by Belarus delegation in the Final Conference, the capacity building activities resulted in formation of a team of competent national air quality experts, which can contribute significantly in the further progress towards improving national air quality governance system. Though it is also important to add that, while the deliverables indicate steady achievement of objectives, the actual qualitative assessment of results might prove to be less effective than expected. Such observations can be applied to Belarus, according to the information provided by the focal point (see table above). To ensure tangible results the developed recommendations shall be actually considered and implemented on the local level, which *inter alia* relies on attracting of additional financial resources.

**Country-specific recommendations:**

I Development of policy documents and instruments:

1. Elaboration of Preliminary Air Quality assessment and designing of the air quality monitoring network in accordance with the EU principles

II Implementation of policy documents and instruments:

1. Air quality assessment based on modelling techniques complying with the EU principles
2. Comprehensive assessment of emissions from transport sector and introduction of emission estimation methodologies complying with CLTRAP requirements
3. Improvement of air quality monitoring system

III Capacity building and pilot projects:

1. Support in transition to IPPC system (incl. implementation of a pilot project, training of relevant stakeholders, capacity building activities)
2. Implementation of a pilot project introducing the concept of sustainable urban traffic and demonstrating it in practice, choosing one city for demonstration
3. Capacity building and education of top-level decision makers on air quality issues
4. Promotion of education of general public and stimulation of private sector to use voluntary tools

## Georgia

After analysis of baseline situation in Georgia in terms of air quality assessment and management, it was noted that there are significant system gaps, including such important factors as the lack of PM10 and PM2.5 standards. Other existing air quality standards were found to be out-dated and essentially irrelevant to the EU principles. A number of additional aspects regarding pollution from transport sector (incl. lack of such regulatory instruments as periodic inspection of cars, check of fuel quality, air pollution charges), not only marked the problems in air quality governance system, but also deterred Georgia from ratification and implementation of CLRTAP protocols.

A number of activities aiming to tackle the identified problems were carried out in Georgia in the framework of the three project Components, RPP1, RPP2 (which included “Development of the National Action Plan for Implementation of the EU Harmonisation plan in the field of air quality governance and meeting correspondent international obligations for Georgia”), RPP3 and NPP – “Feasibility study on the introduction of an Air Quality Monitoring system in Georgia in compliance with EU requirements, including development of the Programme of the National Ambient Air Monitoring System and elaboration of relevant guidelines”. Great part of abovementioned activities emphasize the compliance with the EU requirements, which is especially relevant in the context of the Association Agreement with the EU (signed in 2014 and will lead to the increased cooperation *inter alia* in environmental matters). The impacts of these activities were assessed by the national focal point, and the results of the respective assessment are listed in the box below.

|  |  |
| --- | --- |
| **National assessment of AIR-Q-GOV impact** | |
| **Overall impact:** | Positive |
| **Areas where impact is the most evident:** | * Policy and strategic level:   + National Action Plan for ratification and implementation of CLRTAP protocols under RPP1   + Georgian National Action Plan for Fulfilment of Commitments of EU-Georgia Association Agreement in the Field of Air Quality Management under RPP2 * Assessment:   + Electronic system for collecting information (based on experience gained from study tour to Latvia)   + Air quality model for Batumi under RPP3   + “Draft Programme for the National Ambient Air Monitoring Network in Georgia” under NPP * International issues:   + “National Action plan for joining CLRTAP protocols and meeting correspondent commitments” under RPP1 * General awareness raising:   + Involvement of all related stakeholders (including academic sector, NGOs, etc.) in preparation of documents under pilot projects (RPP1, RPP2, NPP) * General capacity building:   + Increased knowledge on European approaches in the field of air quality management. |
| **Abandoned projects:** | - |
| **Success story:** | * NPP – “Feasibility study on the introduction of an Air Quality Monitoring system in Georgia in compliance with EU requirements, including development of the Programme of the National Ambient Air Monitoring System and elaboration of relevant guidelines” is noted to be a highly successful project |
| **Further national plans:** | Implementation of the National Action Plans (National Action Plan for joining CLRTAP protocols; Georgian National Action Plan for Fulfilment of Commitments of EU-Georgia Association Agreement) and Draft Programme for the National Ambient Air Monitoring Network in Georgia, which are developed under the AIR-Q-GOV project. |
| **Priorities for further assistance:** | Drafting and adoption of new legislation on air quality including the setting of new standards, ensuring compliance of Commitments of EU-Georgia Association Agreement |

Though AIR-Q-GOV has either directly or indirectly (e.g. through capacity building) facilitated improvements in air quality assessment and management system in Georgia, still some issues (as insufficient coverage of automated stations, lack of dispersion models at national level, absence of air quality and emission projection, as well as absence of PM10 and PM2.5 standards, and technology based ELVs and BATs) are deterring Georgia from achievement of tangible results in terms of improvement of air quality and air quality management system.

Assessing available information, including, but not limited to progress reports, opinions of focal point, gap assessment and evaluation carried out by the independent expert, the conclusions on progress in reaching the project’s objectives is briefly outlined in the paragraphs below.

*Objective 1 – improve the convergence to European legislation and regulations*

Policy documents encompassing recommendations on development of legal acts on air quality ensuring convergence to the EU system are among outcomes of two RPPs, project Component 3 and NPP. Yet, considering that approximation with the EU legislation is currently among Georgia’s priorities (due to Association Agreement), identified gaps have to be tackled, addressing such issues as drafting comprehensive legal basis for introduction of IPPC system, drafting new air quality standards and ensuring actual implementation of the “National Action Plan for Implementation of the EU Harmonisation plan in the field of air quality governance and meeting correspondent international obligations for Georgia”.

*Objective 2 – improve the implementation of Multilateral Environmental Agreements*

Better compliance with international standards was addressed within the project Component 2, NPP and RPP3. Though, it has to be noted that the actual ratification of CLRTAP protocols is seen as achievable in the future. Due to conclusion of the Association Agreement, it can be expected that the development of air quality management system and permitting procedure in line with EU standards will be carried out as a priority, moving ratification of CLRTAP protocols to the second place.

*Objective 3 – raise environmental awareness*

Better environmental awareness and capacity-building were promoted through the training programmes under 3 project Components and RPPs. Increased knowledge and capacities of Georgian public officials and specialists are the main outcomes, achieved as the result of extensive involvement of different stakeholders in various activities under regional and national pilot projects.

*Overall objective*

According to the available information, all of the foreseen project activities were implemented in pursuance to the initial expectations. It can be deduced that the achievement of “reduced health and environmental risks from air pollution” can be achieved in long run, after the actual implementation of the developed instruments is ensured. The remaining essential gaps in air quality assessment and management system (e.g. lack of PM10 and PM2.5 standards, absence of BATs and technology based ELVs) are hindering the successful achievement of the objective. Yet the conclusion of the Association Agreement has marked Georgia’s determination to gradually implement all of the measures necessary for effective shift towards EU approaches, thus also aiming to continue ensuring the reduction of air pollution.

**Country-specific recommendations:**

I Development of policy documents and instruments:

1. Assistance in further harmonisation of national legislation on protection of ambient air with the EU legal requirements
2. Introduction of IPPC system, stemming from the recommendations on IPPC/BAT elements.

II Implementation of policy documents and instruments:

1. Implementation of the “National Action Plan for Implementation of the EU Harmonisation plan in the field of air quality governance and meeting correspondent international obligations for Georgia”
2. Support in implementation of “Programme of the National Ambient Air Monitoring System in Georgia”
3. Assistance in implementation of the “National Action Plans for ratification and implementation of CLRTAP protocols”
4. Air quality assessment based on modelling techniques complying with the EU principles
5. Introduction of emission estimation methodologies complying with CLTRAP requirements
6. Introduction of system to estimate emissions from the diffused sources complying with CLTRAP requirements

III Capacity building and pilot projects:

1. Capacity building and education of top-level decision makers on air quality issues
2. Promotion of education of general public and stimulation of private sector to use voluntary tools

## Republic of Moldova

Already in 1995 Moldova signed three of the eight CLRTAP protocols - Gothenburg, Heavy Metals and POPs, ratifying the latter two on October 1, 2002. Yet the actual implementation of the ratified protocols, as well as ratification of Gothenburg protocol has been hindered by the weaknesses in the national air quality assessment and monitoring system. To improve the national air quality governance system, such priorities as necessity for introduction of the IPPC concept, need for introduction of methodologies for emission inventories and emission projections, and need for wider use of modelling techniques had been identified, when initial assessment, prior to commencement of the AIR-Q-GOV project, was made.

The gaps in the air quality governance system in Moldova were addressed in a number of activities implemented under the three project Components, RPP1, RPP2 (activity – “Development of Strategy on Air Quality for the Republic of Moldova”), RPP3, as well as NPP – “Improving the national emission inventory system in the context of emissions reporting under the LRTAP Convention” - , which, as it can be deduced from the title, focuses on the facilitation of implementation of CLRTAP protocols, encompassing activities for improvement of national systems and methods, as well as carrying out institutional capacity building. The assessment of impacts of the abovementioned activities has been carried out by the focal point, and results of the assessment are provided in the box below.

|  |  |
| --- | --- |
| **National assessment of AIR-Q-GOV impact** | |
| **Overall impact:** | Positive |
| **Areas where impact is the most evident:** | * Policy and strategic level:   + Through RPP1, Republic of Moldova received support in elaboration of “National Action Plan for ratification of Gothenburg Protocol and fulfilment of obligation defined by the protocols to CLRTAP in the Republic of Moldova”. It has to be noted that assistance was important due of complex approach which included whole necessary elements: Developing Road Map for the ratification and implementation of Convention protocols, Feasibility study, cost-benefit analysis of consequences and risks.   + Through RPP2, Republic of Moldova received support in drafting policy documents - Strategy on air quality, including Action Plan to implement the mentioned Strategy. * Implementation and enforcement:   + Review of the system of environmental permits.   + Legal and regulatory analysis including overview of the IPPC/BAT elements in existing legal system of the partner countries   + Inventory of existing industrial installations.   + Training of specialists from Ministry of Environment, State Ecological Inspectorate. * Assessment:   + Development of emission inventories for CLRTAP for 1990-2012 and elaboration of Informative Inventory Report (NPP) * International issues:   + “National Action Plan for ratification of Gothenburg Protocol and fulfilment of obligation defined by the protocols to CLRTAP in the Republic of Moldova” (RPP1) * General capacity building |
| **Abandoned projects:** | - |
| **Success story:** | * National Pilot Project was the most effective and generated tangible results which correspond to country needs. |
| **Further national plans:** | * Adoption of Strategy on Air Quality (planned in 2015) (successful implementation requires external financial assistance) |
| **Priorities for further assistance:** | * Assistance in process of harmonization of national legislation with air quality directives included in the Association Agreement with the EU * Establishment of IPPC permitting system including development of legal acts introducing integrated permitting system, emission limit values, application BAT and monitoring and implement the new system (through assessment of the current situation, development of legal acts or amendments of the existing legislation, improvement of capacity of governmental institutions and operators) * Maintain emission inventory and ensure reporting to the Executive body of the Convention/EMEP * Development of emission projections * Integrate emission ceilings/emission reduction commitments in to the national legislation |

Even though Moldova had a slow start, the reaching of the objectives according to the review of 2013, gap analysis and information provided by the focal point, was steady. The actual progress, based on the available information, is provided in the paragraphs below.

*Objective 1 – improve the convergence to European legislation and regulations*

The contribution to the improved convergence to the European legislation and regulations (air quality related legislation and IPPC) can be observed through activities under RPP2 and RPP3. Adoption of air quality standards in accordance with the EU standards is realistic in the transport sector, provided that the draft Resolution of the Government of the Republic of Moldova “On Adoption of Rules Related to Harmonization of National Standards and Ecological Requirements to Emissions and Noise from Motor Vehicles with EU Standards” will be implemented. It is expected that more attention to this objective shall be put in the future, since in June 2014 Moldova signed the Association Agreement with the EU.

*Objective 2 – improve the implementation of Multilateral Environmental Agreements*

Improved implementation of Multilateral Environmental Agreements (CLRTAP and related protocols) is the objective prioritised by the Moldovan partner through NPP and RPP1. As a result, methodologies for assessment of emissions have been improved, national emission factors database - revised, and reporting under CLRTAP protocols and institutional capacity-building – strengthened, thus marking the high potential for achievement of the objective, if the developed instruments and capacities will be deployed.

*Objective 3 – raise environmental awareness*

Even though raising environmental awareness through cooperation at national, regional and sub-regional levels among decision makers, industry and civil society has been noted as the priority at several instances and was included as a component in various AIR-Q-GOV activities, the actual realization of potential was noted as insufficient during the evaluation carried out in 2013. In 2014 several sub-regional training events took place, with participation of Moldova, among other partner countries. These trainings (particularly in the framework of the Component 1) promoted environmental awareness and ensured capacity-building of relevant institutions.

*Overall objective*

The project deliverables and outcomes may well contribute to achievement of the overall objective - the improved and sustainable management of natural resources, including nature protection, reduced effects of climate change and increased environmental cooperation – with precondition that these results will be actually implemented and used in practice. Yet it is important to note, that the implementation of the new Strategy on Air Quality for the Republic of Moldova, new legal instruments, and European standards, as well as introduction of new reporting system under CLRTAP protocols in line with international requirements require allocation of additional human and administrative resources to address environmental commitments at the national level. The lack of prioritisation of the air protection issues in Moldova has been mentioned at several instances, thus implying possible lack of budgetary allocations for further development and practical application of the newly introduced instruments, thus jeopardizing sustainability of the results.

In addition it is noteworthy to mention that some of the gaps identified prior to the commencement of the AIR-Q-GOV as priority, still remain. These include introduction of IPPC system, wider use of modelling techniques, and use of emission estimation techniques complying with CLRTAP requirements. Following recommendations address these gaps to ensure the effective tackling of air pollution problems in Moldova, as well as convergence with the EU requirements.

**Country-specific recommendations:**

I Development of policy documents and instruments:

1. Integration of emission ceilings/emission reduction commitments in to the national legislation
2. Assistance in process of harmonization of national legislation with air quality directives included in the Association Agreement with the EU
3. Elaboration of Preliminary Air Quality assessment and designing of the air quality monitoring network in accordance with the EU principles
4. Introduction of IPPC system stemming from the recommendations on IPPC/BAT elements

II Implementation of policy documents and instruments:

1. Implementation of recommendations provided in the NPP “Improving the national emission inventory system in the context of emissions reporting under the LRTAP Convention”
2. Implementation of the National Actions Plan for ratification and implementation of CLRTAP protocols
3. Implementation of the Strategy on Air Quality for the Republic of Moldova
4. Improvement of air quality monitoring system (incl. increase of number of properly equipped monitoring stations (especially in the Southern region))
5. Application of modelling techniques for air quality assessment purposes on national and sub-national level complying with the EU principles

III Capacity building and pilot projects:

1. Capacity building and education of top-level decision makers on air quality issues
2. Promotion of education of general public and stimulation of private sector to use voluntary tools

## Russian Federation

Being successor of the Soviet Union, Russia took over the obligations on meeting the requirements of the CLRTAP and three protocols that the Soviet Union was a party to (EMEP protocol of 1984, Sulphur protocol of 1985, and NOx protocol of 1988).Yet in order to comply with the reporting commitments under CLRTAP and its protocols, and thus facilitate the process of signing and ratifying the remaining protocols, a well-founded need to review the reporting system and introduce changes necessary for effective functioning and compliance with the requirements established by the Convention was identified prior to commencement of the AIR-Q-GOV project.

Russia took part in a number of activities under the three project Components, RPP3 (partially) and NPP, which focused on facilitation for joining CLRTAP protocols – “Support in creating national emission inventory system needed for joining CLRTAP protocols and meeting corresponding reporting commitments”. Though implementation of the activities at issue had a high potential for improvement of national air quality governance system, the results in Russia were rather limited (see assessment by the national coordinator in the box below).

|  |  |
| --- | --- |
| **National assessment of AIR-Q-GOV impact** | |
| **Overall impact:** | Limited positive impact  Explanation: rather limited positive impact identified mainly from NPP – the information collected might be further used when developing new national legal acts. |
| **Areas where impact is the most evident:** | * Legislation:   + AIR-Q-GOV results will be used in development of new legal acts, based on the Law No 219-FZ of 21.07.14. |
| **Abandoned projects:** | - |
| **Success story:** | - |
| **Further national plans:** | * Implementation of the Law No. 331-FZ of 2011 setting united system of environmental monitoring * Reforming Hydromet * Involvement of federal subjects (i.e. Federal districts of Russia) in environmental monitoring |
| **Priorities for further assistance:** | Not identified |

The achievement of objectives set for the project was analysed based on other information, which includes progress reports, deliverables and evaluation of 2013.

*Objective 1 – improve the convergence to European legislation and regulations*

The objective regarding the improved convergence to the European legislation and regulations is not immediately evident, notwithstanding that the issue was addressed in a number of activities. Though the National Pilot Project for Russia produced detailed proposals for the improvement of the legal environment regarding statistics on industrial pollution and reporting under the CLRTAP convention (also see objective 2), according to the information provided by the national coordinator, the results of AIR-Q-GOV activities might be used sometime in the future when new legal acts or amendments to existing legal acts are made.

*Objective 2 – improve the implementation of Multilateral Environmental Agreements*

As it has already been mentioned in the previous paragraph, the NPP activities focused on support in creating national emission inventory system needed for joining CLRTAP protocols and meeting corresponding reporting commitments, yet the project results have not been implemented in practice. Experts from Russia also took a part in training activities that aimed at increase of capacities in implementation of Multilateral Environmental Agreements (Component 1, Component 2). Implementation of results and deployment of capacities in the future depends on the initiative and willingness of the government.

*Objective 3 – raise environmental awareness*

The third objective, aiming at raising environmental awareness through national, regional and sub-regional cooperation and involvement of civil society and private sector is a cross-cutting issue for the above two objectives. It is realised through collaboration of participants of regional and sub-regional workshops, use of project web-site and newsletters. The training activities were provided in the framework of RPP3, yet Russia failed to take active part in this regional pilot project, which was indicated to be partly affected by significant political barriers.

*Overall objective*

Based on the information provided in the evaluation carried out in 2013, the activities implemented in Russia had a potential to contribute to better management and monitoring of air quality, effective emission prevention, adoption of air quality standards and improved air quality in long term, thus also facilitating the achievement of the overall objective, which includes improved management of natural resources. Yet the current information indicates that the project results might not be actually used in practice, thus significantly reducing the possibility of achievement of the objective. Considering that the financing for air quality management measures is foreseen in the federal budget, the actual implementation of project results depends on willingness of the government.

**Country-specific recommendations:**

I Development of policy documents and instruments:

1. Development of BATs reference documents and integration into national permitting system

II Implementation of policy documents and instruments:

1. Improvement of emission databases according to recommendations provided as the result of the National pilot project
2. Introduction of system to estimate emissions from the diffused sources complying with CLTRAP requirements

III Capacity building and pilot projects:

1. Capacity building and education of top-level decision makers on air quality issues
2. Promotion education of general public and stimulation of private sector to use voluntary tools

## Ukraine

Ukraine acceded to the CLRATP in 1987, and signed the Sulphur protocol in 1994, and the Heavy metals and POPs protocols in 1998, though the protocols are still not ratified by the country. While Ukraine had previously also expressed the willingness to sign and ratify Gothenburg Protocol, the lack of reliable data crucial for reporting purposes has been affecting the political decisions related to the compliance with the CLRTAP protocols and obligations under the protocols. During the analysis of the situation in the country prior to commencement of the project, also such issues as need to harmonize national legislation with the EU legislation, underdeveloped monitoring network, and need to introduce IPPC in all of the relevant sectors were identified.

Ukraine took part in a number of activities carried out under the three project Components, RPP2 (“Support for drafting the ozone protection legislation for the government of Ukraine” and “GAINS model training and support for Ukrainian experts”), RPP3 and the NPP – “Compliance with international commitments under CLRTAP and its Protocols” – , which focused on two elements – improvement of emission reporting and registration system, and revision and update of national emission factors’ database, thus facilitating compliance with the commitments under CLRTAP and its protocols. The national assessment of the impacts from above-mentioned activities is provided in the box below (as identified by the national focal point).

|  |  |
| --- | --- |
| **National assessment of AIR-Q-GOV impact** | |
| **Overall impact:** | Positive |
| **Areas where impact is the most evident:** | * Legislation * Assessment |
| **Abandoned projects:** | - |
| **Success story:** | The NPP provided good grounds to improvement of reporting system in accordance with the CLRTAP requirements. With the support of AIR-Q-GOV experts, the Draft Law “On Ozone Protection” was drafted, which integrated principles and requirements stemming from international treaties and the EU documents (the government is reviewing the draft law).  Also the GAINS trainings had promising results, improving the capacity of national experts to assess the pollution and make future projections in accordance with the system practiced in the EU.  Overall project results improved Ukraine’s capacity to ratify CLRTAP protocols. |
| **Further national plans:** | * Implementation of IPPC * Introduction of the EU legal concepts into national legislation |
| **Priorities for further assistance:** | * Harmonisation of national legislation on protection of ambient air with the EU legal requirements * Assessment of Ukraine’s capacity to join remaining 3 CLRTAP protocols |

Signing of the Association Agreement with the EU implies the need to address the legislative and system gaps in a manner to ensure the approximation of the legal system with the EU requirements. Though the project has facilitated improvements in the various aspects (see gap assessment), still some considerable system gaps remain. The gaps include the insufficient number of automated stations, and the absence of PM10 and PM2.5 standards (as well as absence of respective measurements).

Notwithstanding the current political situation in the Ukraine, the state has managed to achieve progress in relation to the project objectives. The observations stemming from the review of 2013, gap assessment, progress report and other sources of information are provided in the following paragraphs.

*Objective 1 – improve the convergence to European legislation and regulations*

The improved convergence to the European legislation and regulations is facilitated through RPP2, which resulted in the Draft Law “On Ozone Protection” (currently undergoing adoption procedure). Approximation of the Ukraine’s legal system to the EU regulations and directives is particularly important due to Association Agreement signed by the parties in 2014. Based on information provided within GAP assessment AIR-Q-GOV has impact on development of other legislation, including, air protection, environmental monitoring and air and fuel quality standards.

*Objective 2 – improve the implementation of Multilateral Environmental Agreements*

The fulfilment of objective on better compliance with international standards and convergence towards European policy principles has been addressed in NPP, which focused on two elements – improvement of emission reporting and registration system, and revision and update of national emission factors’ database. Once implemented, the project results will significantly improve the Ukraine’s capacity to ratify the protocols at issue. Significant impact towards reaching the objective can be observed in the framework of RPP2 (training and application of GAINS). In addition to improvement of implementation of CLTRAP requirements Ukraine covered also other Multilateral Environmental Agreement – Montreal Protocol (see Objective 1).

*Objective 3 – raise environmental awareness*

The third objective, aiming at raising environmental awareness through national, regional and sub-regional cooperation and involvement of civil society and private sector is cross-cutting. It is realised through transparent decision making process and output quality assurance procedure, collaboration of participants of workshops, use of project web-site, newsletters, publications and other measures. The representatives from Ukraine have taken part in a number of capacity building activities and one of the RPP2 aspects was training of the relevant personnel on application of GAINS model. The overall conclusion in regards to achievement of the objective 3 can be noted as positive.

*Overall objective*

Achievement of OVIs related to the reduced health and environmental risks from air pollution and more sustainable use of natural resources was rated as realistic in 2013, as air quality issues in conjunction with climate change issues were among environmental policy priorities in Ukraine. The current political situation makes it harder to predict if the results will actually be sustained, considering that the country has undergone a radical change in strategic priorities during the last year. However, the current position reflects the determination to actually implement the project results, providing grounds for assumptions that the overall objective will be achieved.

**Country-specific recommendations:**

I Development of documents and instruments:

1. Assistance in harmonisation of national legislation on protection of ambient air with the EU legal requirements
2. Application of GAINS in evaluation of different emission reduction policies
3. Assistance in development of IPPC system

II Development and/or implementation of instruments:

1. Ensure implementation of requirements stemming from the newly introduced legislation regarding aspects of protection of ambient air (namely - the Draft Law “On Ozone Protection”)
2. Ensure practical application of modelling techniques for air quality assessment purposes on national and sub-national level in compliance with the EU principles
3. Assistance in implementation of the IPPC system
4. Development of emission inventories’ system following the recommendations of the NPP “Compliance with international commitments under CLRTAP and its Protocols”

III Capacity building and pilot projects:

1. Capacity building and education of top-level decision makers on air quality issues
2. Promotion of education of general public and stimulation of private sector to use voluntary tools

# Conclusions and further general recommendations

After assessment of existing information of the possible impacts of the AIR-Q-GOV project in the partner countries, several conclusions can be drawn. The further paragraphs will provide a brief overview of the conclusions, as well as general recommendations for further possible activities in the partner countries, drafted based on implications stemming from the gap assessment and information provided by independent auditor and local experts and focal points.

As far as it goes to overall conclusions, it can be observed, that while a lot of system recommendations, policy instruments, as well as legal acts were developed in the framework of the AIR-Q-GOV project, in some cases the actual implementation did not follow or is delayed. Such situation can be described by several factors, as lack of financial resources for implementation and enforcement, different priorities in the countries, resulting in lack of budgetary allocations for air quality governance, lack of knowledge among decision makers on importance of air quality issues, lack of understanding from society or pressure from the private sector. Therefore it is particularly important that prior to developing project ideas the possible sustainability and obstacles for implementation are assessed.

After analysis of available information, which includes previous gap analysis (2012), information provided in the chapters of this report, as well as actual project deliverables and reports, the following observations in relation to existing gaps in the assessed countries (with exception of Russia, where gap assessment for 2014 has not been made) are made:

* Legislative level:
  + As it can be derived from both – previous and current gap analyses, all of the observed countries have legal bases for air governance measures. Yet the qualitative assessment of the legislation has led to the conclusion that the countries’ laws and regulations significantly differ from the EU approaches. When addressing the legislation governing air quality standards [[2]](#footnote-2), it can be derived that partner countries’ legal acts do not correspond to the current WHO and EU approaches (different limit values, limit values applied over different averaging periods). The lack of PM10 and PM2.5 standards has also been identified as a considerable gap, not only in the current analysis, but also in previous assessments. Such situation prevails due to the fact that the partner countries’ legislation governing concentrations has been developed based on the Soviet standards, therefore it does not correspond to the modern approaches practiced in the EU.
  + Similar situation can be observed in the case of the legislation governing emissions[[3]](#footnote-3) - the absence of national emission ceilings indicated a considerable gap in the national air quality governance systems. Also other elements of emissions-governing legal system are lacking, including absence of technology based ELVs (with few exceptions), absence of GBRs for stationary emission sources, absence or fragmented application of IPPC, as well as lack of emission standards for vehicles (Georgia, Moldova) and non-road machinery (Azerbaijan, Georgia, Moldova).
  + Legal harmonization/approximation has already been defined among recommendations that resulted from 2012 gap analysis. While many activities under the project indirectly facilitate development of new legal acts that would assist the progress towards convergence with the EU system, the major problem lies in the lack of tangible results, as the actual draft legal acts have been made just at several instances (e.g. Ukraine, Armenia, Belarus), while in the majority of cases recommendations for introduction of particular legislation have been provided in action plans or other deliverables of recommendatory nature.
* Assessment:
  + When discussing the issue of air quality assessment, several aspects have to be addressed – air quality monitoring, emission inventory, and air quality modelling. Prior to turning to these specific elements, it is crucial to note that all of the observed countries, with exception of Georgia (designation of zones facilitated by the AIR-Q-GOV), have not delimited air quality assessment agglomerations and zones, which represent basic areas for which assessment and management provisions are prescribed.
  + Underdeveloped monitoring system, manifesting *inter alia* in lack or insufficient number of automated monitoring stations, lack of PM2.5 and PM10 measurements has been identified as a gap in air quality assessment systems already in 2012. Though the number of automated monitoring stations in some countries has increased since 2012, the current number, as well as requirements regarding QA/QC, is not sufficient to ensure adequate data in existing networks. Also the gap regarding measurements of *inter alia* such substantial pollutants as PM2.5 and PM10 persists in 2014. Notwithstanding the fact that improvement of monitoring system was included in some activities (e.g. Georgian NPP), there is a need for additional resources to ensure tangible results in the partner countries.
  + Several insufficiencies were identified in the partner countries’ emission data inventory in 2012. Among these gaps the incomplete emission inventories with missing data on fugitive emissions from diffused sources was identified. In addition also the approaches for data collecting and calculating used in the partner countries do not fully correspond to the EMEP/CORINAIR methodology. The problem was partially addressed by such activities as training on use of COPERT 4 and emission inventory according to EMEP/CORINAIR emission inventory guidebook, as well as through NPPs addressing improvement of emission inventories (Republic of Moldova, Russian Federation, and Ukraine). Yet the gap still persists in 2014, as the situation regarding collection of data from diffused sources has not changed since 2012 and actual application of EMEP/CORINAIR inventory techniques is not fully ensured, though potential for improvements in long-term is high.
  + The third important stage in air quality assessment system is air quality and emission dispersion modelling. The modelling deficiencies (in particular lack of dispersion modelling at national and urban levels) were tackled through various activities focusing on trainings in application of modelling techniques used in the EU (i.e. THOR, ADMS). The capacity building providing knowledge and tools was carried out through these activities, yet it does not ensure systematic application of these techniques on a wide scale. At the same time it is very important to highlight that sophisticated modelling was applied for the first time in the partner countries, with exception of Georgia and Russia, and possibility of integration of such techniques in national systems is high.
* Management
  + In order to reduce adverse effects of air pollution on health and environment a number of management-related measures are undertaken in the EU including such aspects as existence of different standards, air quality plans or programmes and effective emission regulation through IPPC system. Gaps in relation to all of the named aspects have been identified in the previous analysis, and the majority is still prevailing after the current review phase.
  + The majority of partner countries (with exception of Azerbaijan) lack a general policy document on air protection that would set country’s air quality management strategic framework. According to the most recent data, Moldova and Ukraine are preparing air protection policy documents. At the same time the situation in remaining countries is that some of them (Belarus, Georgia) have air protection provisions integrated in general environment policy documents, while Armenia currently has no air protection policy. The absence of “specialized strategic documents for air quality management” was identified as a gap in the previous analysis, marking the need for a comprehensive policy framework, which is not ensured with partial addressing of some air protection issues in general environmental policy documents. While many activities under the project facilitated development of new policy documents, the project impact can be considered as significant only with the precondition that draft documents will be adopted and implemented in practice.
  + Air quality and emissions’ projections are an indispensable element of air quality policy as practiced in the EU and prescribed by the international agreements. The lack of air quality projections in the partner countries was identified already in 2012, indicating a necessity to introduce advanced projections’ tools. Yet, while the trainings on application of such tools as GAINS and COPERT 4 for development of projections were provided in the framework of the project, and demonstrative projections have been made in Armenia, Belarus, Republic of Moldova and Russian Federation, the actual integration of tools into national air quality management system was not ensured. However the project provided a good background for improvements in a long-term.
  + Another important aspect in air quality management is realized through IPPC permitting. While all of the countries have environmental permitting system, it does not correspond to the IPPC principles. Some countries, as e.g. Belarus, have partially commenced establishment of IPPC system, yet none of the countries at issue have actual functioning integrated permitting system. This was identified as a considerable gap already in previous stages of the project, and has also been identified among the priorities by the partner countries. While project provided a solid basis for introduction of IPPC system, it did not actually ensure the application in practice.
  + When observing a sophisticated air quality management system, several other elements are usually present, particularly referring to instrumental level. The first group encompasses command-and-control instruments as BAT, ELVs, specific fuel quality standards and emission standards for vehicles (see paragraph on legislation gaps above). Such tools are still not sufficiently developed in the majority of the observed countries, though they have also been identified as important elements by the countries at issue. Another important element is economic and voluntary instruments, which are usually practiced in countries with well-developed air quality governance system, while in the partner countries such tools are used rarely or not at all. Voluntary instruments can be particularly important if their use is established in air protection policy or legislation. In the majority of cases the deliverables of recommendatory nature have been provided by the project, the actual impact depends on the countries’ political will and capacities to consider and implement provided recommendations.
* Public information:
  + Provision of information regarding the environment to the public is one of the core elements in the field of environmental protection in the EU, which is included in the legislation and policy documents of various levels, and foresees participation of the general public in decision-making process. Yet it can be concluded that while the project facilitated improvements, it did not fully eliminate gaps in the field of public information, and system for provision of environmental (air quality) information to public is still deficient in the majority of the observed countries (e.g. lack of on-line/near-to-real time data and websites with annual information).

Taking into account all of the above-mentioned information, the following general recommendations can be provided for the region:

1. Capacity building and education of top-level decision makers on air quality issues – such measures are of crucial importance, as when the decision makers are not perceiving ambient air protection as a sufficiently important issue in the country (which often is a result of lack of knowledge on possible consequences in relation to environment, health and also implied financial losses), the sustainability of project results might be decreased. Favourable political support is one of the most important aspects in successful application of developed instruments.
2. Development of new legal acts – introduction of legislation that complies with the requirements set by the EU has proven to be a valuable type of projects and is still topical, especially in countries that have recently signed Association Agreements with the EU (Georgia, Moldova, and Ukraine).
3. Improvement of air monitoring system – as it was indicated in the Gap assessment most of the countries lack air monitoring system (including network) that would ensure data coverage and quality sufficient for effective air quality management. Therefore projects tailored to the specific needs of the partner countries are recommended to ensure gradual improvements of air quality monitoring systems.
4. Improvement of emission inventories and in particular introduction of the system to estimate emissions from the diffused sources – taking into account the number of pilot projects devoted to improvement of emission inventories and the results collected in the framework of the gap analysis, it can be derived that there is a considerable gap in terms of data collection and calculation approaches, including estimation of emissions from the diffused sources in the partner countries (except Belarus). Therefore it is particularly important to introduce and facilitate implementation of the systems ensuring that high quality emission data are collected and reported according to CLTRAP requirements and the EU best practices.
5. Use of air pollution dispersion models for air quality assessment and planning on national and urban level – in the framework of the AIR-Q-GOV the modelling tools were introduced to the stakeholders, emphasizing the importance of application of these techniques, if the convergence towards regulation and practices used in the EU is desired by the countries at issue. Yet the actual application of such modelling techniques is still not ensured, therefore this has been acknowledged as one of the necessities in all of the partner countries, with exception of Russia, which has been applying other modelling tools and is not planning to change its modelling system in the nearest future.
6. Implementation of IPPC system – in majority of cases it has been acknowledged that while a good background for introduction of IPPC system has been developed in the framework of AIR-Q-GOV , it might not lead to actual implementation of the system. Therefore projects ensuring not only development of recommendations for introduction of IPPC, but also assisting in drafting national legislation and implementation of pilot projects can be recommended.
7. Education of general public and stimulation of private sector to use voluntary tools – after assessment of air quality systems in the partner countries, it becomes evident that in majority of cases voluntary instruments are used very rarely or not used at all. The promotion of actual implementation of voluntary instruments, as well as wide educational campaigns can result in fundamental shift of attitudes in both private and public sectors, facilitating environment-friendly decisions and stimulating sustainable (“green”) economy.

# Annex 1 AIR-Q-GOV projects

Project Components, encompassing a number of thematic activities:

* Component 1 – “Common activities”
* Component 2 – “Activities addressing the Industrial Sector, including Energy”
* Component 3 – “Activities addressing the Transport Sector”

Regional pilot projects (RPPs):

* RPP1 – “Assessment and enhancement of national capacities for joining CLRTAP protocols and meeting corresponding commitments” (countries: Armenia, Azerbaijan, Georgia, Moldova)
* RPP2 – “Assistance to drafting policy papers and regulations in the field of air quality management” (countries: Azerbaijan, Georgia, Moldova, Ukraine)
* RPP3 – “Development and implementation of air pollution assessment system to estimate effects of different urban planning and transportation schemes in the partner countries” (countries: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russia, Ukraine)

National pilot projects (NPPs):

* Armenia – “Development of emission levels associated with the best available techniques and emission limit values for selected sectors and installations”
* Azerbaijan – “Improvement of legislation on assessment and management of ambient air”
* Belarus – “Development of technology-based emission limit values and a self-monitoring system in the cement industry”
* Georgia – “Feasibility study on the introduction of an Air Quality Monitoring system in Georgia in compliance with EU requirements, including development of the Programme of the National Ambient Air Monitoring System and elaboration of relevant guidelines”
* Moldova – “Improving the national emission inventory system in the context of emissions reporting under the LRTAP Convention”
* Russia – “Support in creating national emission inventory system needed for joining CLRTAP protocols and meeting corresponding reporting commitments”
* Ukraine – “Compliance with international commitments under CLRTAP and its Protocols”

1. The effectiveness of enforcement is not being assessed. [↑](#footnote-ref-1)
2. The legislation prescribes concentrations of air pollutants in ambient air that are designed to reduce harmful effects on health and the environment [↑](#footnote-ref-2)
3. Covers national emission ceilings, emerging from Gothenburg Protocol, emission standards for stationary and mobile sources, and fuel quality standards [↑](#footnote-ref-3)