



REPUBLIC OF BULGARIA  
MINISTRY OF ENVIRONMENT AND WATER  
EXECUTIVE ENVIRONMENT AGENCY

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# National Inventory System of Bulgaria

Zagreb,  
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## Bulgarian National Inventory System

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## Bulgarian National Inventory System

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### DEFINITIONS

- The Bulgarian National Inventory System (BGNIS) includes all **institutional, legal and procedural arrangements** made within a country for estimating anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and for reporting and archiving inventory information;
- The NIS defines the “**road map**” in which Bulgaria prepares its inventory.



## Bulgarian National Inventory System

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### OBJECTIVES

The overall objectives of the BGNIS are:

- annually to produce a **high quality inventory** for compliance with Kyoto commitments;
- to **submit** CRF tables and National Inventory Report by the **required deadline** under the UNFCCC and EC;
- to ensure the **transparency, consistency, comparability, completeness** and **accuracy** of inventories.



## Bulgarian National Inventory System History

BG NIS until 2007 (submission 2007)	Present BG NIS (submission 2008-2015)	Prospected BGNIS
←	Centralized inventory	→
Single institute	Single agency	→
Out-sourced inventory	In-sourced inventory	→
Private consultants	<b>Public/Governmental</b> (submission with cooperation of consultants)	→
National Inventory Focal Point: Private consultants	National Inventory Focal Point: ExEA	→
←	National Focal Point: MoEW	→

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## Bulgarian National Inventory System Legal aspects

The legal basis for BGNIS is provided in:

- **Environmental Protection Law** (State Gazette No. 91/25.09.2002; corrected, SG No. 96/2002; last amendment November 2012):

- establish the National Environmental Monitoring System and lists all of its tasks;

- **Regulation on the organization and structure of ExEA:**

- regulate the responsibilities for monitoring of environment as well as the responsibility for preparation of emission inventories.

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## Bulgarian National Inventory System

### Legal aspects

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Agreements between MoEW/ExEA and the main data provider have been signed in 2010:

- National Statistic Institute (February 2010)
- Ministry of Agriculture and Food (March 2010)
- Ministry of Economy and Energy (June 2010)
- Ministry of Internal Affairs/Road Control Department (June 2010)



## Bulgarian National Inventory System

### Legal aspects

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- **Regulation of the Council of Ministers 216** (State Gazette No. 21.09.2010; last amendment 5 September 2014)

- to establish and maintain the institutional, legal and procedural arrangements necessary to perform the functions of BGNIS, as defined in Decision 20/CMP.7

- to reinforce the institutional agreements by specifying the roles of all data providers

- to ensure QA/QC activities



## Bulgarian National Inventory System Legal aspects

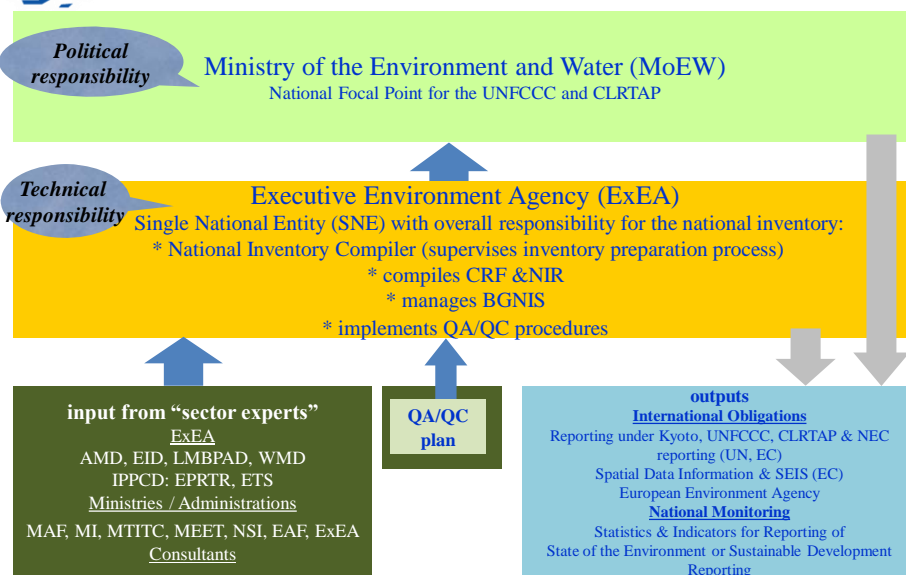
Orders related to the establishment of a National Inventory System for GHG emissions :

- Order № 150/01.07.2013 by the Executive Director of ExEA:
  - to increase the capacity in ExEA for adequate planning, preparation and management of emissions inventory;
  - to define the names and responsibilities of experts from different departments within the ExEA, which are engaged in preparation of National GHGs emission inventory (Sector experts/QC experts).
- Order № RD-218/05.03.2010 by the Minister of Environment and Water:
  - to assure the quality of information reported to UNFCCC and UNECE and to support the single national entity;
  - to define the names and responsibilities of the MoEW and ExEA as QA experts for implementation of the requirements of National QA/QC Plan in emission inventory of sectors Energy, Industry, Solvents, Agriculture, LULUCF and Waste.

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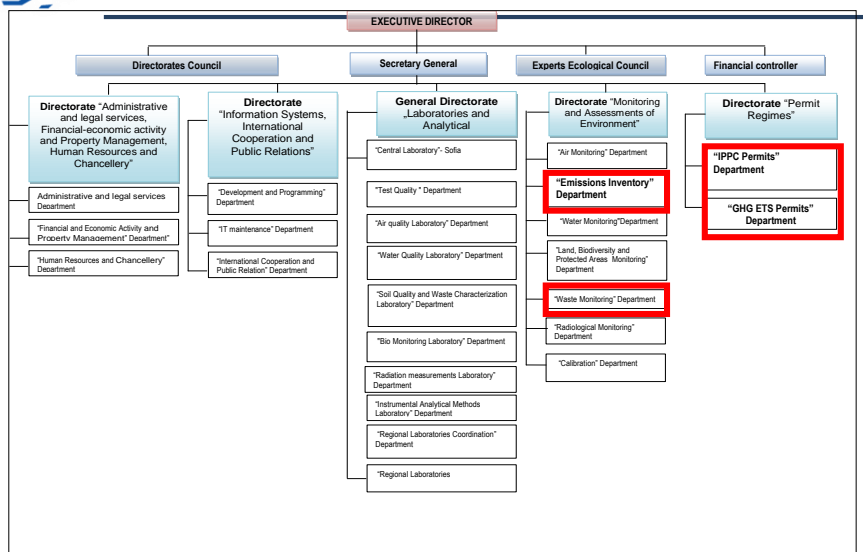


## National Inventory System - Organizational Chart





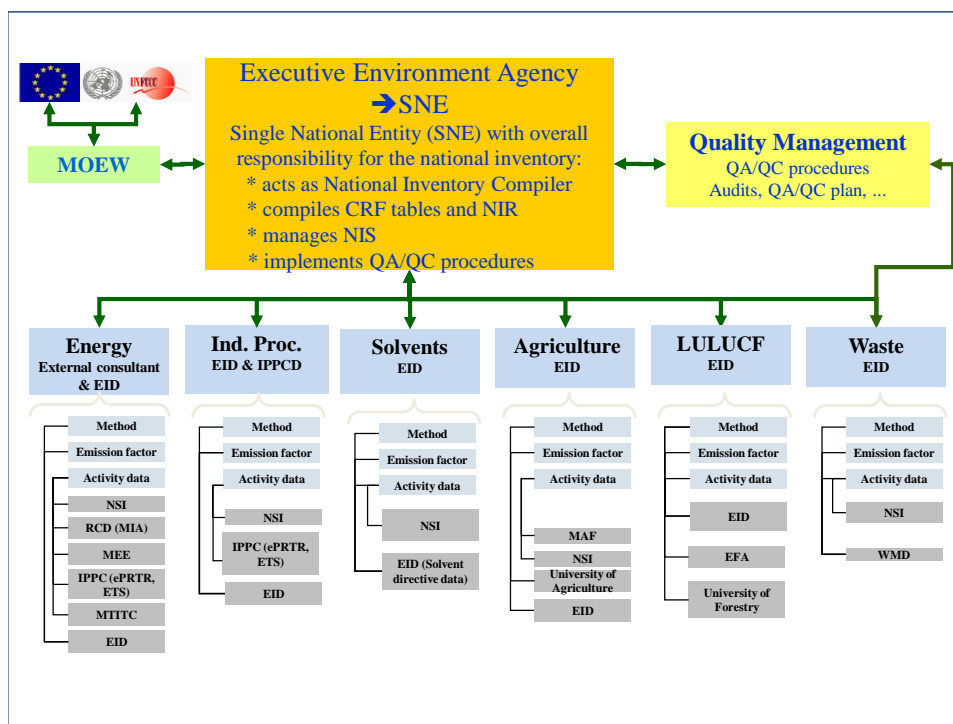
## Bulgarian National Inventory System Executive Environment Agency



## Tasks of the Single National Entity

ExEA has the **technical responsibility** for the national inventory with the following tasks:

- Manages National Inventory System (NIS)
- Acts as National Inventory Compiler (compiles GHG emission estimates produced by sector experts)
- Coordinates GHG inventory work (Inventory Planning) & ensures timely submission
- Informs relevant experts of changes & evolutions in guidelines
- Performs Key Source Analysis & Uncertainties Calculation
- Assists sector experts in their assignments and training
- Coordinates the work of engaged consultants for supporting inventory
- Defines and approves (with sector experts) AD, EF and methods
- Coordinates and implements the activity of National QA/QC Plan
- Prepares National Inventory Report (NIR) and compiles CRF
- Archives all information relevant to inventories and NIS



## Bulgarian National Inventory System Improvement of technical competence of the staff

- A **training programme** for Bulgarian inventory experts within the **Twinning project BG/07/IB/EN/07** with the Federal Environment Agency of Austria:
  - The program covered all inventory sectors in a series of workshops realised in the period December 2009 to September 2010.
- A project for “**Improvement of National Quality Management System for GHG Inventories**” had been performed together with the Austrian Environmental Agency. The project is funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and German Federal Environment Agency. The purposes of the projects are:
  - To analyze/review the current QMS (in accordance with the IPCC Guidelines);
  - Proposal on implementation of the improvements;
  - Training of the quality manager and the sectoral experts (within the QMS) according to 2006 IPCC GLs Chapter 6 and following the ISO 9000 standards.
- Online training by the UNFCCC and GHG Management Institute



## Bulgarian National Inventory System Use of external consultants

Consultants	Responsibilities
University of Forestry - Sofia	LULUCF and KP-LULUCF sector (Development of country-specific EF)
University of Agriculture – Plovdiv	Agriculture sector (Development of country-specific EF)
Sofia University “Kliment Ohridski” – Biostatistician expert	Uncertainty analysis of LULUCF sector (Tier 1 & Tier 2)
University of Chemical Technology and Metallurgy - Sofia	Waste sector (study for country-specific parameters)
Denkstatt Bulgaria	Energy sector (prepared CRF tables and respective chapters in NIR)
Geophysical Institute/Bulgarian Academy of Science	Non GHG gases reporting obligation



## Bulgarian National Inventory System Procedural arrangements (1)

The GHG inventory represents a process, covering the following main activities:

- **Collect sufficient activity data, process information, and emission factors** as are necessary to support the methods selected for estimating anthropogenic GHG emissions by sources and removals by sinks;
- **Prepare estimates** and ensure that appropriate methods are used to estimate emissions from key source categories;
- Identification **key source categories**;
- Make a **quantitative estimate of inventory uncertainty** for each source category and for the inventory in total recalculations of previously submitted estimates of anthropogenic GHG emissions by sources and removals by sinks.





## Bulgarian National Inventory System Procedural arrangements (2)

- **Compile the national inventory** in accordance with Article 7, paragraph 1, and relevant decisions of the COP and/or COP/MOP;
- Implement **general inventory QC procedures** (tier 1) in accordance with its QA/QC plan following the IPCC good practice guidance;
- Apply **category-specific QC procedures** (tier 2) for key source categories and for those individual source categories in which significant methodological and/or data revisions have occurred;
- Collection of all data together with emission estimates, where data sources are well **documented** for future reconstruction of the inventory.



## Bulgarian National Inventory System Activity data provider

Sectors	Data Source of Activity Data	Activity Data supplier	
<b>1. Energy</b>			
<b>1.A Fuel Combustion</b>	Energy balance (IEA - EUROSTAT – UNECE Energy Questionnaire)	NSI	National Statistical Institute
<b>1.A.3 Transport</b>	Energy balance (IEA - EUROSTAT – UNECE Energy Questionnaire)	NSI	National Statistical Institute
	Statistics vehicle fleet	MI/RCD	Ministry of internal affairs/ Road Control Department
	Country specific parameters used in the COPERT IV	MTITC	Ministry of Transport, Information Technologies and Communications
<b>1.B Fugitive emissions</b>	Energy balance (IEA - EUROSTAT – UNECE Energy Questionnaire)	NSI	National Statistical Institute
	National statistics	ME	Ministry of Energy
<b>2. Industrial processes and Product Use</b>	National production statistics	NSI	National Statistical Institute
	National registers (EPTR and EU ETS)	ExEA	Executive Environment Agency
	National studies	MoEW/ExEA	Ministry of Environment and Water/ Executive Environment Agency
	National VOC register	ExEA	Executive Environment Agency
<b>3. Agriculture</b>	National agriculture statistics	MAF	Ministry of Agriculture and Food/Statistics Department
<b>4. LULUCF</b>	National Forest Inventory	EFA	Executive Forestry Agency
<b>5. Waste</b>	National statistics	NSI	National Statistical Institute
	National studies	ExEA	EEA/ Waste Department



## Bulgarian National Inventory System IPCC Guidelines for National Greenhouse Gas Inventories

- Revised 1996 Guidelines
- 2000 Good Practice Guidance and Uncertainty Management (GPG2000)
- Good Practice Guidance for Land Use, Land-Use Change and Forestry (GPG-LULUCF)
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol (KP Supplement)
- 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (Wetlands Supplement).



## Bulgarian National Inventory System Emission factors

The emission factors are mainly from:

- IPCC Guidelines
- CORINAIR methodology
- Country-specific
- Plant-specific



## Bulgarian National Inventory System Quality Management System

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Bulgarian QMS was created on the basis of National Study of Bulgarian Academy of Science, Geophysical Institute according to Chapter 8, IPCC-GPG, 2000 and the IPCC 2006 Guidelines.

In addition, the outcome of the project “Improvement of Bulgarian Quality Management System of the Greenhouse gas (GHG) Inventory” is implemented in order to develop an efficient and optimal QMS, that fulfills every quality requirement of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Chap. 6).



## Quality Management System QA/QC Plan

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The QA/QC plan

- is a fundamental element of a QA/QC system.
- **outline QA/QC activities** that will be implemented and include a **scheduled time frame** that follows inventory preparation from its initial development through to final reporting in any year
- contains an outline of the processes and **schedule to review** all source categories.
- is an internal document to **organise, plan and implement** QA/QC activities.
- official QA/QC Plan for National emissions inventories was approved by the Ministry of Environment and Water, once developed, it has been updated regularly in order to implement the new established legal, institutional and procedural arrangements within the BGNIS.



## Quality Management System Quality Control

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- The QC procedures are performed by the sector experts, who are directly involved in the process of preparation of inventory with their specific responsibilities.
  - Checklist for general and specific procedures for QA/QC of emission inventory (part one)
- The QC procedures are implemented by all activity data provider and ExEA's sector experts and/or external consultants. (Order №202/29.09.2010 by the Executive Director of ExEA)

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## Quality Management System Quality Assurance

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### Requirements of QA experts:

- Sector experts from the MoEW, which are engaged through internal administrative order by the minister of environment and water;
- Experts from research institutes in accordance with their competence;
- Other external reviewer (national and/or international).

- QA conducted with
  - Checklist for general and specific procedures for QA/QC of emission inventory (part two)

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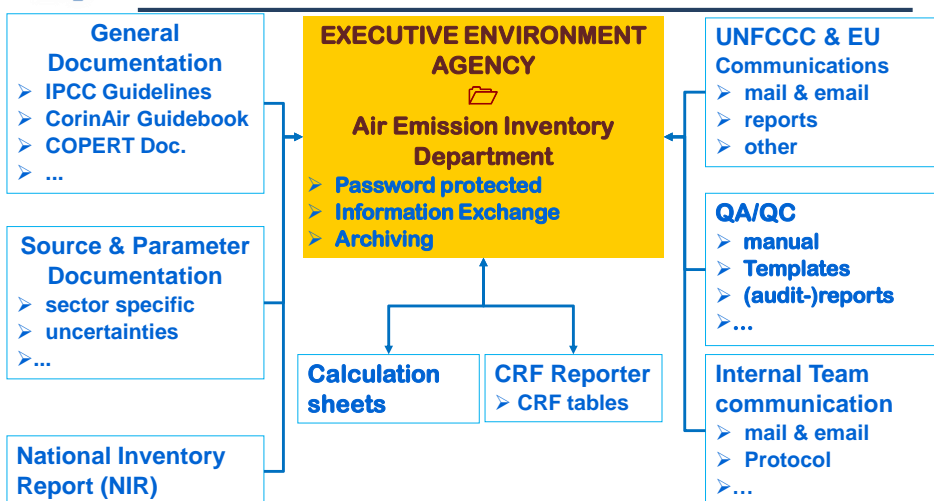
## Documentation and archiving

In order to reproduce inventory is followed the *good practice* for:

- annually document and archive all information necessary to reproduce inventory
- to document and archive all information relating to the planning, preparation, and management of inventory activities
- to report a summary and key findings of all implemented QA/QC activities as a supplement to the NIR



## Documentation and archiving





## Future Improvements

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- Further cooperation for studies (verification of EFs) with other non-governmental institutions and universities as National Forestry Institute, Bulgarian Academy of Agriculture, Bulgarian Academy of Science, Branch Business Association and etc.;
- Improvement of Data management in ExEA (Communication & Information Centre);
- Integrate GHG and Air pollutant together in a single inventory.



## Bulgarian National Inventory System

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**THANK YOU FOR YOUR ATTENTION!**