

NATIONAL SYSTEM FOR ESTIMATION OF SOURCES AND SINKS OF GREENHOUSE GASES AND THEIR PRECURSORS

NS SR description

This document described the system of the national inventory processes in Slovakia under the Paris Agreement and Regulation (EU) on the Governance of the Energy Union and Climate Action

16.9.2024

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Key Message

According to the latest reports of international studies and the information distilled from the reports of the European Environmental Agency, climate change is accelerating rapidly. The global average temperature is the highest on record, with the past 12 months being 1.58°C above pre-industrial levels ([Copernicus Climate Change Service, 2024](#)), surpassing the target value of the Paris Agreement during this period. According to the recent EU Climate Risk Assessment ([EEA, 2024c](#)), Europe is the fastest warming continent in the world, warming twice as fast as the global average, with climate risks threatening its energy and food security, ecosystems, infrastructure, water resources, financial stability, and people's health. Many of these risks have already reached critical levels and could become catastrophic without urgent and decisive action. These findings stress the importance of enhancing societal readiness to confront these risks effectively.

At the same time, the accelerating pace of climate change underscores the imperative to reduce GHG emissions. Despite widespread recognition of global warming for many decades, global GHG emissions continue on an upward trajectory ([Crippa et al., 2024](#)). To reverse this trend, global action is essential, including a rapid phasing out of fossil fuels and a substantial transition across all sectors. To reduce its emissions in line with commitments to the Paris Agreement, the EU has embarked on a path towards climate neutrality. The European Climate Law ([EU, 2021](#)) sets a binding target for the EU to achieve climate neutrality by 2050 at the latest. The European Climate Law also sets a binding midterm target for the EU to reduce net GHG emissions by at least 55% in 2030 compared to 1990. In addition, in February this year, the European Commission recommended a 90% net GHG emissions reduction by 2040 compared to 1990 levels ([EC, 2024c](#)) to serve as the next important stepping stone towards achieving net zero emissions by 2050. The 90% recommendation reflects the minimum target level for 2040 advised by the European Scientific Advisory Board on Climate Change ([European Scientific Advisory Board on Climate change, 2023](#)). The current 2030 climate target is backed by a robust legal framework, including binding greenhouse emission reduction and removal targets for Member States, a European-wide Emissions Trading System, a detailed climate and energy governance framework and a comprehensive set of supplementary legislation addressing diverse sectors.

1. Introduction and purpose of the NS SR

Inventories of sources and sinks of greenhouse gases emission, their precursors and other pollutants for the Slovak Republic are prepared annually and emissions are prepared on a sectoral basis - energy, including transport, industry, land use, changes in land use and forestry (LULUCF), agriculture and waste. To ensure the preparation of inventories that meet detailed and demanding criteria, the NATIONAL SYSTEM FOR ESTIMATION OF SOURCES AND SINKS OF GREENHOUSE GASES AND THEIR PRECURSORS, in short just the National System of the Slovak Republic (NS SR), was created. The obligation to create and, in accordance with current requirements, to develop NS SR, is set for the Slovak Republic in the United Nations Framework Convention on Climate Change and the European law in climate change.

The system needs to be constantly improved, which is why its structure is designed in such a way that it flexibly allows for the inclusion of changes resulting from the requirements for continuous improvement of the quality of emission preparation, as well as the input data used, in compliance with all the rules that NS SR must follow.

Harmonization of the NS SR with international rules and decisions of the Executive Bodies of the UN Framework Convention on Climate Change (UNFCCC) and with the new transparency framework agreed at the 21st Conference of Parties to the UNFCCC (COP 21) in Paris in 2015 is essential. The binding, signed outcome of COP 21, which was subsequently ratified by the majority of UNFCCC participating parties, is known as the Paris Agreement (PA). NS SR will also integrate emissions and projections of air pollutants unify methodological procedures for individual economic sectors and emission categories.

The Slovak Hydrometeorological Institute - Department of Emissions and Biofuels ([SHMÚ - OEaB](#)) is authorised by the Ministry of the Environment of the Slovak Republic (MŽP SR) with the management and implementation of the NS SR according to Paris Agreement and COP decisions. Within the NS SR, the so-called Single National Entity (SNE)¹ was established as a coordinator of the NS SR. The SNE was officially appointed by the Decision of the Director General of the SHMÚ No 16/2011 in August 2011 and amended by the Decision of the Director General of the SHMÚ No 8/2012 in September 2012.

In connection with the finish of the Kyoto Protocol after 2020 and the ratification of the PA and the subsequent amendment of the European legislation (further on in the section Legislative framework), new requirements and challenges arise for the performance of the tasks of the NS SR. One of them is the harmonization of the institutional and substantive implementation of the NS SR with the new rules established after 2015, implemented by the end of 2023 and put in operation from January 2024.

It is necessary to continue to monitor the development of climate negotiations within the framework of the UNFCCC and actively participate in the negotiations, as well as to participate in joint EU activities in the field of climate change and air protection. Due to the cross-cutting nature of the air protection, climate change and emissions agenda, an interdepartmental approach and integrated planning,

¹ "Vestník" (Official Journal of the Ministry of Environment), XV, 3, 2007, page 19: National Inventory System of the Slovak Republic for the GHG emissions and sinks

including financial, material and capacity planning, are essential for the effective implementation of the Paris Agreement at the national level. For the Ministry of the Interior of the Slovak Republic and SHMÚ - OEaB, this results in the strengthening of interdepartmental and institutional cooperation.

Historically, the first draft law from 2023² on climate change and low-carbon transformation of the Slovak Republic and on amendments to Act no. 162/2015 Coll. The Administrative Court Code, as amended (Climate Act) in paragraph 12 establishes and limits the rights and obligations of the National Inventory System of the Slovak Republic as follows:

(1) National inventory system

- a) is a national system for policies, measures, monitoring of greenhouse gas emissions and their projections, sources and sinks of greenhouse gases and their precursors,
- b) is set for regular monitoring and preparing inventories of greenhouse gas emissions from sources and monitoring of carbon dioxide captures,
- c) is established for preparation of emission inventories of greenhouse gases from sources and monitor carbon dioxide captures,
- d) monitor the precursors of emissions of greenhouse gases and other pollutants,
- e) ensures performance in the field of reporting according to a special regulation³,
- f) administers a database of data used to ensure the fulfilment of the information obligations of the Slovak Republic related to the fulfilment of obligations in the field of climate change.

(2) The administration of the National Inventory System is provided by the Slovak Hydrometeorological Institute.

(3) The Slovak Hydrometeorological Institute verifies and supervises the quality of collected data in the National Inventory System. For this purpose, the Slovak Hydrometeorological Institute will prepare methodological guidelines for subjects providing data to the National Inventory System.

(4) The Slovak Hydrometeorological Institute publishes the following data on the website, in a form understandable to the public:

- a) annual inventory of the GHG by individual sectors,
- b) comparison of the achieved emission reduction in individual sectors with the planned reduction on an annual basis,
- c) annual trend of overall emission reduction.

(5) The structure of the National Inventory System will be established by the MŽP SR and published on its website.

² Draft law wasn't adopted by 09/2024

³ Articles 18 and 39 of the Regulation (EU) 2018/1999

(6) The calculation of the carbon footprint for public administration bodies, obligated persons in the Slovak Republic will be ensured by an authorized verifier according to a special regulation⁴, which will be guided by the methodology published on the website of the MŽP SR and the Slovak Hydrometeorological Institute. The conditions for granting, withdrawing and recognition of accreditation are governed by a special regulation.

2. Historical context of the establishment of the NS SR

Historically, the preliminary obligations given by the Kyoto Protocol (Article 5, Paragraph 1) was to create and, in accordance with current requirements, to develop national inventory systems for regular monitoring and reporting of greenhouse gas emissions and other relevant information related to climate change. The Slovak Republic responded to this obligation by creating NS SR in 2007¹ as part of SHMÚ - OEaB.

The Kyoto Protocol was approved at the Conference of Parties to the UNFCCC in 2005, subsequently ratified by a majority of the parties to the convention and entered into force in 2007. Its first binding period lasted from 2008 to 2012. The goal was to reduce total greenhouse gas emissions during this period by 8%.

Subsequently, the validity of the Kyoto Protocol was extended by an amendment from Qatar Doha until 2020. It expired at the end of 2020⁵.

In response to poor enforcement and conflicting international consensus related to the controversial Doha amendment to the Kyoto Protocol, the Paris Agreement was agreed at the 21st UNFCCC Conference of Parties (COP 21) in Paris in 2015⁶.

According to Article 13 of the PA and according to paragraphs 84-98 of decision 1/CP.21 the obligations of the participating parties to submit regular reports and publish information about their emissions, as well as methodological guidelines for fulfilling their obligations, adjustments to methodological and institutional functions occurred of national systems for emissions and projections is set. Decision 1/CP.21 contains a detailed description of the modalities, procedures and guidelines for the Transparency Framework and for Actions and Support (hereafter MPG)⁷. The annex to the decision also contains modalities for accounting for financial resources provided and mobilized in accordance with Art. 9, par. 7 of the Paris Agreement. Furthermore, in Decision 19/CMP.1, guidelines for national systems were established in order to ensure rules regarding inventory systems for reporting data on emissions, projections, indicators and policies and measures in the field of climate change.

Another important milestone in the transformation of national inventory systems to the new regime under the PA was the 24th global climate conference COP 24 to the UNFCCC in December 2018, which was held in Katowice, Poland. The conference in Katowice was a breakthrough meeting for the

⁴ Law no. 505/2009 Coll. on accreditation of conformity assessment bodies and on amendments to certain laws as amended.

⁵ The second binding period established by the amendment ended in 2020 and aimed to reduce greenhouse gas emissions by a further 20% compared to 1990. Since few contracting parties have ratified the amendment, this reduction in emissions does not have a significant effect on the course of climate change.

⁶ [Paris Agreement on Climate Change](#)

⁷ [Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement](#)

implementation of the PA and for meeting its goals, with the ambition of limiting the increase in global temperature to 1.5 °C compared to pre-industrial levels. The goal of the conference was to adopt a set of rules for the implementation of the so-called PA. "Rulebook", which confirmed the international commitment in the fight against climate change. SHMÚ - OEaB experts, among many other professional events, followed the agenda of Article 13 of the Paris Agreement and paragraphs 84-98 of Decision 1/CP.21 dealing with the reporting obligations of the participating parties and methodological guidelines for reporting the fulfilment of their obligations.

3. Current status

The smooth progress of the implementation of the PA into international rules binding across all UNFCCC parties was affected by the COVID-19 pandemic and with it the difficulty of negotiation processes. The postponed COP 26 conference, which was supposed to take place in 2020 in Glasgow, has been moved to the end of 2021. From this conference was expected the overall approval of the rules for ETFs in the MPG as part of decision 1/CP.21 and finally the whole of Article 13 of the PA. The rules will change the overall functions and processes that occur within the institutionalized national inventory systems of stakeholders today. The rules for ETFs given in the MPG were subsequently entered into force on January 1, 2023, so they must be fully reflected and implemented by delivering the first Biennial Transparency Report in December 31, 2024 by all country parties considering their flexibilities.

In addition to the legislative, institutional and procedural functions of the NS SR, the transformation process is complicated in relation to the methodological, validation and reporting processes, which need to be adjusted and subsequently adjusted also in terms of the flow of funds, the allocation of suitable and sufficient capacities and ensuring a smooth transition from the original system to the new system.

One of the duties is to ensure the implementation of new methodological guidelines for inventorying greenhouse gas emissions. Currently, the [2006 IPCC Guidelines](#) for National Greenhouse Gas Inventory are used until the end of 2022. These will be replaced by the new methodological guideline [2019 IPCC Refinements](#). In addition, there will also be a change in the global warming potentials for individual greenhouse gases⁸.

4. Legislation

4.1 International legislation:

- United Nations Framework Convention on Climate Change (UNFCCC);
- Kyoto Protocol (KP);
- Paris Agreement (PA).

⁸ Transition from the GWPs 4th IPCC Assessment Report to the GWPs 5th IPCC Assessment Report. More information on the site <https://www.ipcc.ch/ar6-syr/>

4.2 European legislation:

- European Green Deal;
- Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action;
- Implementing regulation EU) 2020/1208 on structure, format, submission processes and review of information;
- Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement;
- Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework;
- Regulation (EU) 2018/842 of the European Parliament and of the Council of 6 July 2011 on European environmental economic accounts.

4.3 National legislation:

- Law no. 309/2009 Coll. on the promotion of renewable energy sources and highly efficient combined production, which implements the EP and Council Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources;
- Draft law on climate change and related decrees;
- Law no. 137/2010 Coll. on air, as amended;
- Decree of the Ministry of the Slovak Republic no. 411/2012 Coll. on monitoring emissions from stationary sources of air pollution and air quality in their surroundings;
- Law no. 17/1992 Coll. on the environment, as amended by Act no. 127/1994 Coll., no. 287/1994 Coll., no. 171/1998 Coll., no. 211/2000 Coll. and no. 332/2007 Coll.

4.4 Related information systems

- NEIS – National emission inventory system; IS managed by SHMÚ (<https://neispz.shmu.sk>)
- IS SK BIO – Information system on biofuels and bioliquids: <https://isbio.shmu.sk/>
- Information system on emissions and emission projections: <https://oeab.shmu.sk/>
- [Model TIMES](#) – preparation of emissions projections from energy and industry
- [Model COPERT](#) – preparation of emissions projections from road transport
- More information in Annex 1

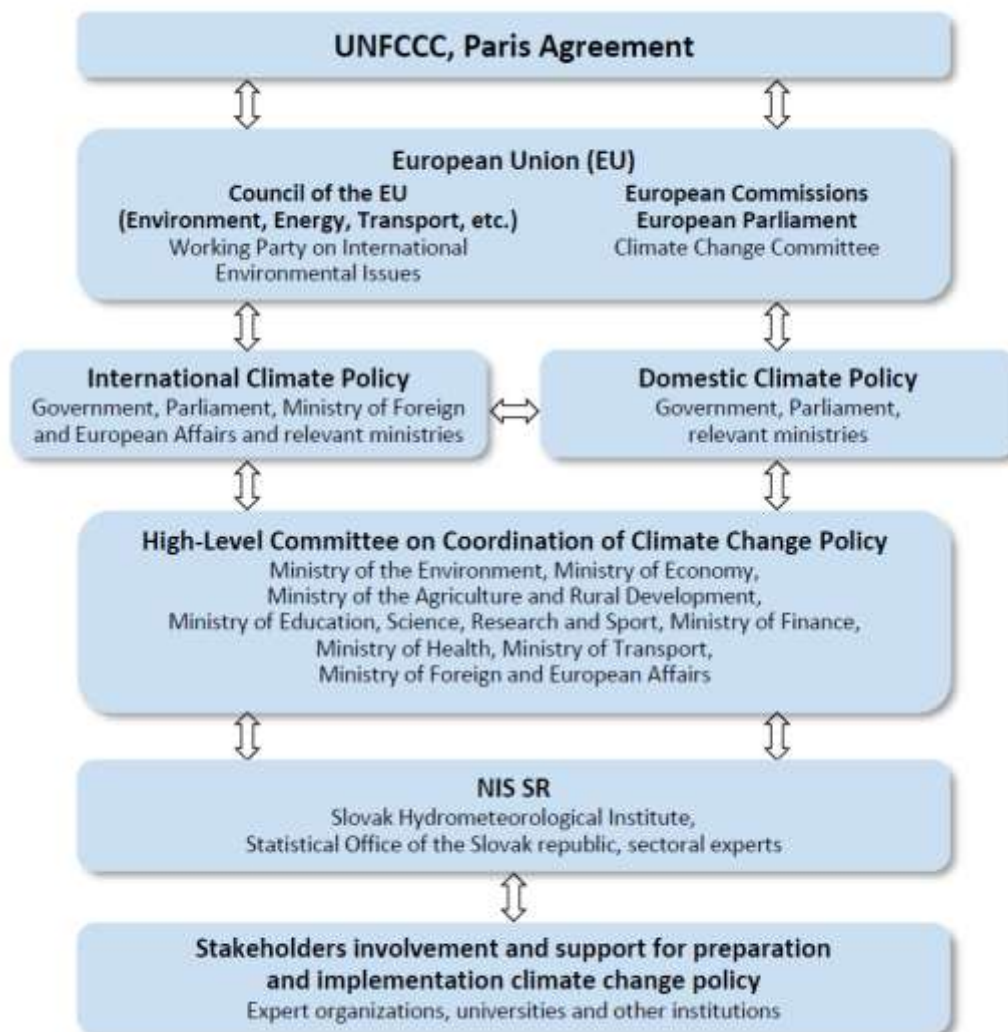
5. NS SR structure

According to Article 13 of the Paris Agreement and paragraphs 84-98 of Decision 1/CP.21 and further guided in the MPG, each party included in the PA must have a national system for determining anthropogenic greenhouse gas emissions. According to Decision 1 / CP.21 the NS SR must be managed in such a way that it can include a transparent, consistent, comparable, complete and accurate inventory of greenhouse gas emissions. At the same time, the NS SR must meet the quality of planning, preparation and management of activities related to the inventory, including assessment of uncertainty and the plan for quality assurance and quality control (QA/QC). The internal and external plans of QA/QC activities for both GHG and air pollutants are listed in Annex no. 3. Characteristics, general and specific functions and principles are further defined in detail:

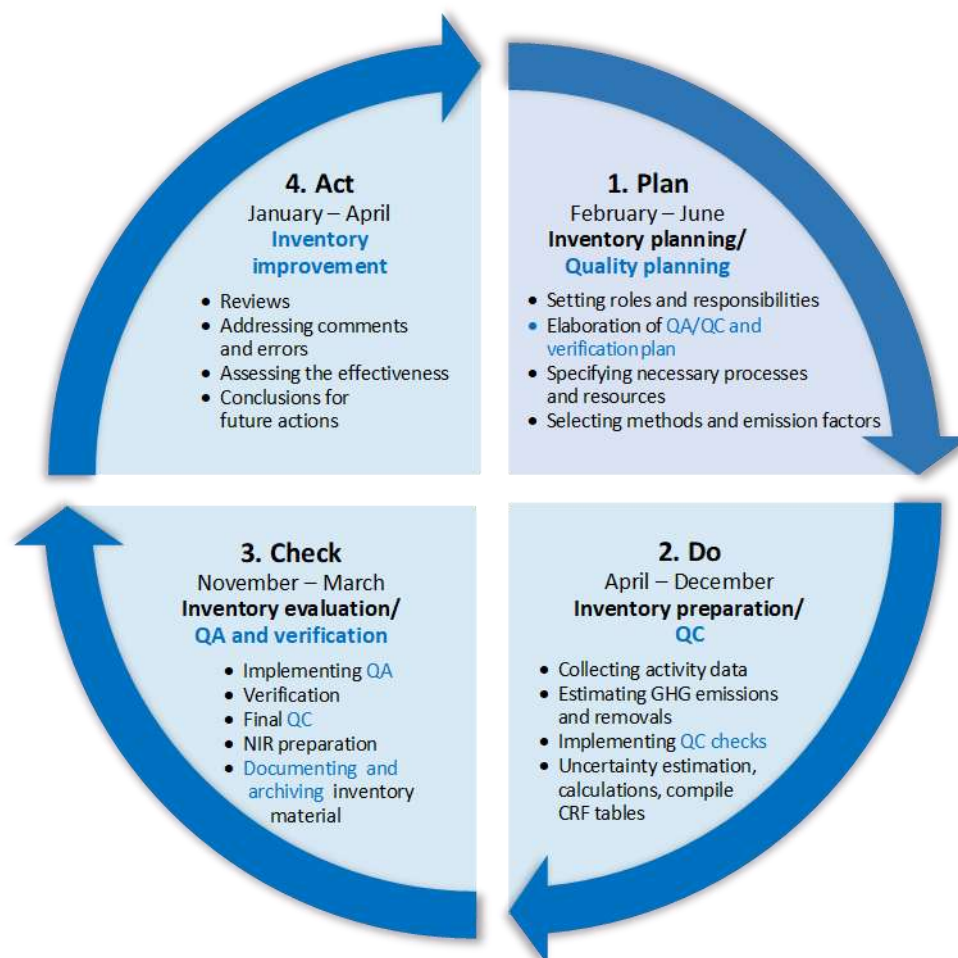
- create and ensure the functionality of the legal and institutional framework, including accepted procedures, necessary for the implementation of general and specific activities within the NS SR between management (government) and other interested responsible entities;
- ensure the necessary capacities (financial, material and human resources) for the ongoing functions within the NS SR, including the collection of data for emissions and sinks of greenhouse gases;
- create conditions to support the professional growth of employees involved in the emission inventory process;
- ensure the necessary financial resources for the fulfilment of obligations;
- define the rights and obligations of interested entities for the publication of data and the provision of information at the national and international level.

More information about structure of processes is in Annex no.2 (in Slovak language).

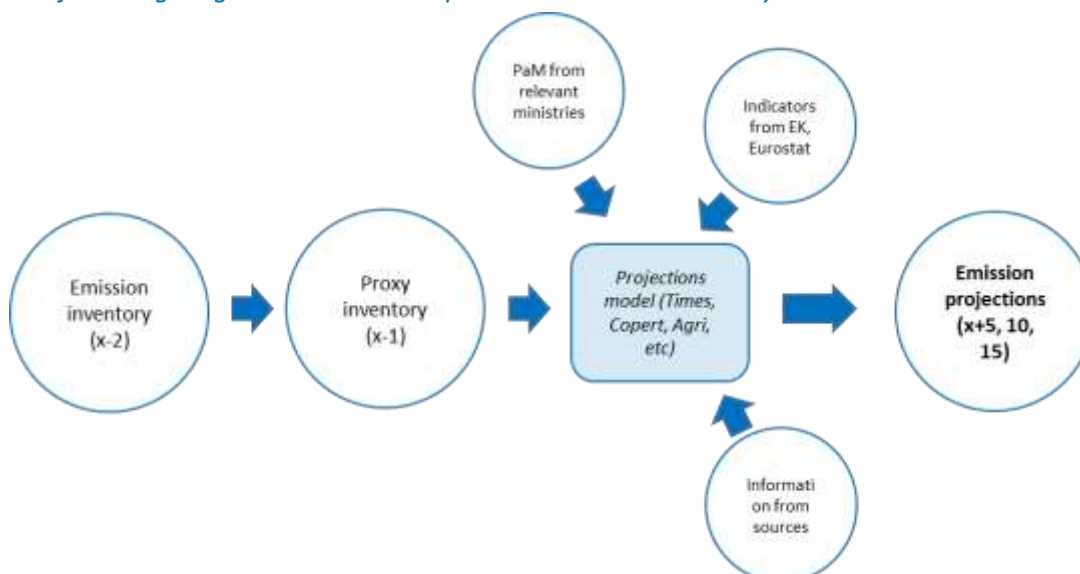
Institutional arrangements in climate change policy and its implementation:



The time management and data flow and information during the annual cycle of preparation of emissions inventories is shown in the following diagram:



The following diagram describes the processes in the emission system:



6. Sectoral emissions distributions

The inventory sources and sinks of emissions of greenhouse gases and their precursors is processed in accordance with the international methodological manuals of the IPCC (part 3) and EMEP/EEA in accordance with the sectoral principle (bottom-up) in the following sectors:

6.1 Energy and activities related to fuel combustion

The energy and fuel combustion sector is an important source of emissions in the Slovak Republic. This sector includes all economic activities that use or burn fossil fuels, including the energy industry (production of electricity and heat), fuel combustion in the manufacturing industry (industrial production and construction), transport (road and other modes of transport), households (heating and preparation of hot water), services and other small sources as well as fugitive emissions from fuels.

Emissions from the energy sector are estimated and reported in both inventories – greenhouse gases and air pollutants. Despite the fact that the separate calculation models were used, the harmonization of input and output data is at a high level.

The energy industry is a significant source of air pollution in the Slovak Republic. In the energy sector, the sources of emissions from the production of electricity and steam (power plants and central sources of heat supply), oil refining and the production of solid fuels (coke) are accounted for. The air pollution inventory is prepared using the methodology described in the EMEP/EEA Air Pollutant Emission Inventory Guidebook 2019.

The inventory of greenhouse gas emissions in the energy sector is estimated based on the methodology described in the IPCC methodological guidelines from 2006. Within the methodology, emissions are estimated using two approaches – reference and sectoral. The energy balance methodology using the reference approach, also called the top-down approach, is based on simple balance calculations that are based on energy statistics, which are prepared and published annually by the ŠÚ SR. The estimation takes into account mining, production, import, export and stocks of the given commodity.

The sectoral approach is referred to as a bottom-up approach and is based on data directly from the operations themselves with a more detailed distribution:

Category 1.A.1 Energy industries

- 1.A.1.a Public electricity and heat production
- 1.A.1.b Petroleum refining
- 1.A.1.c Manufacture of solid fuels and other energy industries

Category 1.A.2 Manufacturing industries and construction

- 1.A.2.a Iron and steel
- 1.A.2.b Non-ferrous metals
- 1.A.2.c Chemicals
- 1.A.2.d Pulp, paper and print

1.A.2.e Food processing, beverages and tobacco

1.A.2.f Non-metallic minerals

1.A.2.g Other

Category 1.A.3 Transport

1.A.3.a Civil aviation - domestic aviation

1.A.3.b Road transportation

1.A.3.c Railways

1.A.3.d Domestic navigation - domestic shipping

1.A.3.e Other transportation

Category 1.A.4 Other sectors

1.A.4.a Commercial and institutional building, hospitals, schools

1.A.4.b Residential buildings

1.A.4.c Agriculture/Forestry/Fishing

Category 1.A.5 Other

Category 1.B Fugitive emissions

1.B.1 Solid fuels

1.B.2 Oil and natural gas and other emissions from energy production

6.2 Industrial processes and product use

Industrial processes in Slovakia have been traditionally represented by industries such as metallurgical production, iron and steel production, production of coke and refinery products, chemical production, paper and food industry, production of mineral products and others. This sector also includes the use of solvents and other products (such as fireworks).

Category 2.A Mineral products

Category 2.B Chemical industry

Category 2.C Metal industry

Category 2.D Non-energy Products from Fuels and Solvent Use

Category 2.E Electronics Industry

Category 2.F Product Uses as Substitutes for ODS

Category 2.G Others

6.3 Agriculture

Agriculture sector is composed of:

Category 3.A Enteric fermentation

Category 3.B Manure management

Category 3.C Rice cultivation

Category 3.D Agricultural soils

Category 3.E Prescribed Burning of Savannas

Category 3.F Field Burning of Agricultural Residues

Category 3.G Liming

Category 3.H Urea Application

6.4 Land Use, Land-Use Change and Forestry (LULUCF)

The LULUCF sector is the only one in which carbon sequestration occurs in biomass. Individual categories are linked to all relevant processes in changes in carbon stocks in all five main storages (living biomass, above-ground and underground, dead biomass, soil carbon). A special category within all processes in the country are greenhouse gas emissions from biomass burning, which represent controlled burning and uncontrolled burning (e.g. forest fires). Combustion of biomass affects the emissions of all greenhouse gases.

Categories 4.A, 4.B and 4.C indicate permanent capture of carbon emissions in aggregate terms. Other parts of the landscape that are capable of sequestering carbon emissions are forest land (forest) and wood products. Other parts of the country, such as settlements, emit the emissions.

The LULUCF sector is balanced only in terms of greenhouse gases (mainly CO₂) and consists of the following categories:

Category 4.A Forests

Category 4.B Cropland

Category 4.C Grassland

Category 4.D Wetlands

Category 4.E Settlements

Category 4.F Other Land

Category 4.G Harvested Wood Products]

6.5 WASTE

The most common disposal methods are landfills and, to a lesser extent, incineration. When landfill waste decomposes, non-methane volatile organic compounds (NMVOCs) and methane are released. During the handling with waste, particulate matter (PM) emissions are released.

The waste management sector consists of the following categories:

Category 5.A Solid Waste Disposal

Category 5.B Biological Treatment of Solid Waste

Category 5.C Incineration and Open Burning of Waste

Category 5.D Wastewater Treatment and Discharge

7. Capacity

NS SR is managed by an authorized organization - SHMÚ, coordination and management is ensured by the head of the Department of Emissions and Biofuels of SHMÚ. All the above-mentioned facts have an increased demand for capacities (professional, financial, time) for internal and external experts of the NS SR.

The NS SR is responsible for the overall fulfilment of the tasks given by the legislative measures mentioned in part 4 in terms of ensuring impartiality, correctness and transparency. Therefore, it is necessary to ensure that capacity requirements are covered by an independent process or a system of funds from the state budget or a separate budget scheme (for example, in the sense of the Act on trading emission quotas as a percentage of revenues).

The coordinator of the NS of the SR is responsible for the performance of the tasks of the NS SR, the state (MŽP SR) is responsible for the financial security of the NS SR according to the requirements and the plan presented by the coordinator of the NS SR for the determined period.

The list of necessary input data and their sources are listed in Annex no. 1.

7.1 Internal experts

Internal experts of SHMÚ – OE&B, responsible for tasks fulfilment within the NS SR:

Name	Responsibility	Capacity
Ing. Janka Szemesová, PhD.	NS SR coordinator	100 %
Mgr. Lenka Zetochová/Mgr. Alexandra Nadžadyová	Manager quality of the NS SR	100 %
Ing. Kristína Tonhauzer, PhD.	Sector agriculture	100 %
Ing. Zuzana Jonáček/Mgr. Petra Kršáková	Preparation of emission inventories of precursors and other pollutants	100 %
Mgr. Ján Horváth, PhD.	Sector transport Sector fugitive emissions	100 %
Mgr. Marcel Zemko	Emission projections for energy and IPPU	60 %
Ing. Jozef Orečný	Emission projections for energy and IPPU	100 %
Ing. Monika Jalšovská	Database NEIS	100 %

Name	Responsibility	Capacity
Mgr. Michaela Campian, PhD.	Database NEIS	100 %
Mgr. Roman Mach	Uncertainty by model Monte Carlo	100 %

7.2 External capacity

External capacities are represented by experts involved in the fulfilment of the tasks of the NS SR, who have contracts with the SHMÚ - OEaB and/or MŽP SR:

Organization	Responsibility	Capacity
National Forest Centre Zvolen, MPRV SR	GHG inventory in Forest Land, HWP and determination land-use matrix	
Animal Production Research Centre VÚŽP – NPPC, MPRV SR	Activity data and analyses for animal production in agriculture sector	
Research Institute on Soil Protection VÚPOP – NPPC, MPRV SR	Inventory from cropland and wetland	
Central Control and Testing Institute in Agriculture, MPRV SR	Data provider in the Agricultural sector – soil nutrition	
Grassland and Mountain Agriculture Research Institute VÚTPHP – NPPC, MPRV SR	Inventory from grassland	
Faculty of Chemical Technology of the Slovak Technical University Bratislava	Experts on emission from energy, IPPU and wastewater	
State Nature Conservancy of the Slovak Republic	Activity data for wetlands and land-use matrix	
Waste department of the MŽP SR	Waste statistics and activity data	
Statistical Office of the Slovak Republic	Statistical data provider	
ICZ Slovakia a.s.	National Registry focal point	

8. Definitions and abbreviations

COP	Conference of the parties
CRT	Common Reporting Tables under MPG
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LULUCF	Land Use, Land-Use Change and Forestry
MPG	Modalities, Procedurals and Guidelines
MS	Member State
MŽP SR	the Ministry of the Environment of the Slovak Republic
NID	National Inventory Document
ETF	Enhanced Transparency Framework
NS SR	National system of Slovak Republic
OEaB	Department Emissions and biofuels
PA	Paris Agreement

SHMÚ	Slovak Hydrometeorological Institute
SNE	Single National Entity
SR	Slovak Republic
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change

Annex No. 1: Activity data for NS SR

LULUCF sector			
Data	Type of data	Units	Source
Acreage	Individual categories of land use Individual permanent cultures (vineyards, orchards, gardens) Transfers of land between individual categories of land use	ha	Statistical yearbook on the soil fund SR http://www.skgeodesy.sk/
	Afforestation	ha	NLC-ULZI, LHE, ŠÚ SR
	Reforestation by regions	ha	Statistical yearbook on the soil fund SR
	Forest Fires	ha	NLC-FRI
	Landscape size, soil in use [pl5001rr]	ha	http://datacube.statistics.sk/#/view/sk/VBD_SK_WIN/pl5001rr/v_pl5001rr_00_00_00_sk
Tree species	Extensive representation of individual trees	%	NLC-ULZI, SISL tab. M SR
	Total normal growth of individual trees	m ³ /ha/y	NLC-ULZI database
Logging	Total Coniferous Deciduous Renewal intentional (OÚ) + Accidentally carried out (NV) coniferous Renewal intentional (OÚ) + Accidentally carried out (NV) deciduous	m ³	NLC-ULZI, LHE
	Individual trees	m ³	NLC-ULZI, LHE, ŠÚ SR https://slovak.statistics.sk/
Stock	Total Coniferous Deciduous	m ³	NLC-ULZI, LHE
	Spruce, beech, oak, pine by age	m ³	NLC-ULZI, SISL tab. N, SR
	Average stock of coniferous and deciduous trees in individual regions	m ³ /ha	NLC-ULZI, SISL tab. N, SR
HWP	Input data for the category Products from harvested wood	m ³ , t	FAO, http://faostat3.fao.org/download/F/FO/E "Items Aggregated"
Bonita	Average "bonita" for spruce, fir, pine, beech, oak, poplar		NLC-ULZI, SISL tab. M SR
Age	Average age for spruce, fir, pine, beech, oak, poplar		NLC-ULZI, SISL tab. M SR
Soil	The percentage of agricultural soil cultivation	%	ŠÚ SR
Permanent grasslands	Average harvest	t/ha	http://datacube.statistics.sk/#/view/sk/VBD_SK_WIN/pl5001rr/v_pl5001rr_00_00_00_sk

Agriculture sector			
Data	Type of data	Units	Source
Number of livestock per regions	Cattle	head	ŠÚ SR, CRZ
	Swine	head	
	Sheep	head	
	Other animals	head	
	Harvested area per crop	ha	
Breeding parameters cattle per region	Interim period (Dairy cows)	days	PLIS/ Information System about Breeds
	First calving age (Dairy cows)	days	
	Mortality of calves (Dairy cows)	%	
	Average daily gain (Dairy cows)	kg	
	Weaning weight (Dairy cows)	kg	
	The average daily gain in fattening bulls	kg	ŠÚ SR
	Average daily gain in heifers	kg	PLIS/Information System about Breeds
	Heifers' weight during weaning	head	
	Heifer weight at calving	head	
	Lactation length (Dairy cows)	days	
	Fat content in milk (Dairy cows)	%	
	Protein content in milk (Dairy cows)	%	
	Slaughter weight of bulls	kg	
	Grazing cows number	Number of livestock	
	Grazing heifer number	Number of livestock	
	Share of calving cows to the herd	%	
	Breed structure of milk cattle	%	
	Breed structure of beef cattle	%	
	The proportion of non-pregnant heifers	%	
	The proportion of pregnant heifers	%	
	Gross birth rate (Dairy cows)	%	
	Interim period (Suckled cow)	days	

Agriculture sector

Data	Type of data	Units	Source
	Mortality of calves (Suckled cow)	%	
	Weaning age of calves at weaning	days	
	Weight of calves at weaning	kg	
	First calving age (Suckled cows)	days	
	The proportion of non-pregnant heifers	%	
	The proportion of pregnant heifers	%	
	Gross birth rate	%	
	Net birth rate	%	
	Age at first calving	day	
	Average daily milk yield per cow (Suckled cows)	Kg/day	
	The proportion of calved dairy cows	head	
	The proportion of calved beef cows	head	
	Grazing share	%	
Breeding parameters swine per regions	Number of breeding. (from 1 sow/year)		PLIS/Information System about Breeds
	Number of births per year		
	Grazing share	%	
Breeding parameters sheep per regions	Breeding period	Year/day	PLIS/Information System about Breeds
	Weight gain of lambs	kg	
	Weight of lambs at entry	kg	
	Weight of lambs at admission	kg/day	
	Wool production	kg	
	Proportion of twins from a litter	%	
	Weight of rams	kg	
	Live weight of ewes	kg	
	Milk production	l	
	Grazing share	%	
	Gross energy intake	MJ/day	

Agriculture sector			
Data	Type of data	Units	Source
Feeding rations all animals per regions	Digestibility of feed	% DE	NPPC/Department of Animal Nutrition
	Share of cereal in feeding doses	%	
	Metabolizable energy	MJ/day	
	Crude protein	g/day	
	Maximum volume of fibre in feeding doses	g/day	
	Cereal share in feeding doses	%	
	Type cereals in feeding doses	kg/day	
Manure management systems	Manure management (solid manure)		NPPC/VÚŽV
	Manure management (slurries)		
	Biogas station		
	Abatement technics (method of manure storage and manure application to the soil)		PPA
Activity data of agriculture soils – all regions	Harvested area	ha	ŠÚ SR
	Crop yield	t/ha	
	Inorganic fertilization consumption	kg of nitrogen/applied to the soil	UKSÚP
	Sewage sludge applied to the soils	kg of nitrogen/applied to the soil	VÚVH/ŠUSR
	Other organic fertilizers (compost, digestate and other)	kg of nitrogen/applied to the soil	UKSÚP
	Limestone and dolomite consumption	t	
	Average temperature of climate	°C	
	Precipitation	mm	SHMÚ
	Evapotranspiration	mm	
	Histosols area	ha	VÚPOP
Information are not available			

IPPU sector			
Data	Type of data	Units	Source
Cement production	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ETS reports + additional data from operators
	EF (C)	t/t	
	The content of oxides originating from carbonates or the content of carbonates	%	
Lime production	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ETS reports + additional data from operators
	EF (C)	t/t	
	The content of oxides originating from carbonates or the content of carbonates	%	
Glass production	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ETS reports + additional data from operators
	EF (C)	t/t	
	The content of oxides originating from carbonates or the content of carbonates	%	
Ceramics	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ETS reports + additional data from operators
	EF (C)	t/t	
	The content of oxides originating from carbonates or the content of carbonates	%	
Magnesite production	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ETS reports + additional data from operators
	EF (C)	t/t	
	The content of oxides originating from carbonates or the content of carbonates	%	
Desulphurisation of coal	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ETS reports + additional data from operators
	EF (C)	t/t	
	The content of oxides originating from carbonates or the content of carbonates	%	
Ammonia production	Type and amount of fuel	thousand m ³	ETS reports + additional data from operators
	EF (C)	kg/TJ	
	Lower calorific value (NCV)	GJ/ tis. m ³	
	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	
Production and use of urea	Production of urea	kt	Data from operators + ŠÚ SR
	CO ₂ used to produce urea	kt	
	Import of products containing urea	kt	
	Export of products containing urea	kt	
	Amount of urea used for DeNOX application	kt	

IPPU sector			
Data	Type of data	Units	Source
Nitric acid production	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ETS reports + additional data from operators
	Emissions of N ₂ O	kt CO ₂ eq.	
Carbide production	Type and amount of fuel	kt, thousand m ³	ETS reports + additional data from operators
	EF (C)	t/t	
	Lower calorific value (NCV)	GJ/ thousand m ³ , GJ/t	
	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	
	EF (C)	t/t	
Petrochemicals	Type and amount of fuel	kt, thousand m ³	ETS reports + additional data from operators
	EF (C)	t/t	
	Lower calorific value (NCV)	GJ/ thousand m ³ , GJ/t	
	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	
	EF (C)	t/t	
Iron and steel production	Type and amount of fuel	kt, thousand m ³	ETS reports
	EF (C)	t/t	
	Lower calorific value (NCV)	GJ/ thousand m ³ , GJ/t	
	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	
	EF (C)	t/t	
Ferroalloys production	Type and amount of fuel	kt, thousand m ³	ETS reports + additional data from operators
	EF (C)	t/t	
	Lower calorific value (NCV)	GJ/ thousand. m ³ , GJ/t	
	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	
	EF (C)	t/t	
Aluminium production	Type and amount of fuel	kt, thousand m ³	ETS reports + additional data from operators
	EF (C)	t/t	
	Lower calorific value (NCV)	GJ/ thousand m ³ , GJ/t	
	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	
	EF (C)	t/t	

IPPU sector			
Data	Type of data	Units	Source
Lead production	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	Data from operators
Zinc production	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	Data from operators
Non-energetic use of lubricants	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ŠÚ SR
	EF (C)	t/t	
Non-energetic use of paraffin	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ŠÚ SR
	EF (C)	t/t	
Use of N ₂ O for medical purposes	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	Distribution companies
Use of data in aerosols	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	Distribution companies
Medical aerosols	Type and amount of material (product, by-product, intermediate product, waste, raw material)	kt	ŠÚKL
Use of F-gases	Type of F-gases		SZCHKT
	Amount of new F-gases	t	
	Amount of purchased recovered F-gas	t	
	New filling of F-gases	t	
	Added filling of F-gases	t	
	Recovered amount of F-gases	t	
	Regenerated amount of F-gases	t	
	Discarded amount of F-gases	t	
	Leakages of new F-gases	t	
	Leakages of recovered F-gases	t	
	Category of use of F-gases		
Import, export of F-gases	Type of F-gases		SZCHKT; MŽP SR
	Imported amount of new F-gases	t	
	Imported amount of recovered F-gas	t	
	Exported amount of new F-gases	t	
	Exported amount of recovered F-gas	t	
	Purchase of new F-gas in Slovakia	t	
	Purchase of recovered F-gas in Slovakia	t	

IPPU sector			
Data	Type of data	Units	Source
	Sale of new F-gas in Slovakia	t	
	Sale of recovered F-gas in Slovakia	t	
Production and import of equipment containing F-gases	Type of F-gases		SZCHKT; MŽP SR
	Category of use of F-gas		
	Number of equipment produced	pc	
	Number of equipment imported	pc	
	Exported number of equipment	pc	
	Gas filling in one equipment	kg	
Production and registration of cars	Number of cars produced	pc	ZAP SR
	Registration of new cars and light commercial vehicles in Slovakia	pc	
	Registration of individually imported cars in Slovakia	pc	
Import and export	Amount of perfumes and toilet waters (330300)	kg	ŠÚ SR
	Amount of hair lacquers (33053000)		
	Amount of pre-shave, shaving or aftershave preparations (33071000)		
	Amount of personal deodorants and antiperspirants (33072000)		
	Amount of polishes, creams and similar preparations, for footwear or leather (34051000)		
	Amount of polishes, creams and similar preparations, for the maintenance of wooden furniture, floors or other woodwork (34052000)		
	Amount of polishes and similar preparations for coachwork, other than metal polishes (34053000) and hydraulic brake fluids and other prepared liquids for hydraulic transmission (38190000)		
	Amount of fungicides (380892), herbicides (380893), insecticides (380891)		
	Amount of liquid soaps		
	Amount of windscreen wipers, defrosters and demisters for motorcycles or motor vehicles (29312370)		
Liquid soaps	Liquid soaps production (20413180)	kg	Eurostat
Asphalt	Data on released solvents from road paving with asphalt	t	Balance sheets NEIS
	Data on the amount of asphalt used		VUIS-Cesty
	Data on the amount of solvents released during the production of asphalt shingles		Balance sheets NEIS
	Data on the amount of production asphalt shingles		Operator- Icopal

IPPU sector			
Data	Type of data	Units	Source
Coating applications	Data on the amount of solvents released during the coating applications of car paints from large and medium sources	t	Balance sheets NEIS
	Data on the amount of solvents released during the coating applications of car paints from small sources		FTP Server ŠÚ SR
	Data on the quantity applied during the coating application of car varnishes		
Emissions	Data on the amount of used/released emissions from degreasing from large and medium sources	t	NEIS
	Data on the amount of emissions used/released from degreasing from small sources		FTP Server ŠÚ SR
	Data on the amount of used/released emissions from dry cleaning from large and medium sources		NEIS
	Data on the amount of used/released emissions from chemical products		
	Data on the amount of emissions used/released from the printing		
	Data on the amount of emissions used/discharged from other use of solvents		
Fireworks and tobacco	Data on the amount of fireworks and tobacco consumed	kg	FTP Server ŠÚ SR
Data for air pollutants inventory			

Transport sector			
Data	Type of data	Units	Source
Transport	Consumption of fossil fuels in transport	t, m ³	SHMÚ
	Consumption of biofuels in transport	tonnes (kt)	
	Content of C, H, O in fuels		VÚRUP a.s.
	Calorific value of fuels	TJ/kt	ŠÚ SR
	The proportion of biofuels in the fuel	%	SHMÚ
Aviation	Consumption of fuels	kg	EUROCONTROL
	Emissions of greenhouse gases and air pollutants		
Road transport	Number of vehicles	pc	PP SR - IS EVO
	Annual mileages	km	MDV SR - STK
	CNG consumption in road transport	kg	Annual report under FQD 7a, FR SR
	LPG consumption in road transport		

Transport sector

Data	Type of data	Units	Source
	Minimum and maximum temperatures by month	°C	SHMÚ
	Average air humidity	%	
	Average length of one ride	km	MDV SR - mobility survey 2014
	Average time of one ride	min	
	CO ₂ corrector factor	g/km	EEA database (Decision (EÚ) 2019/631)
	ETBE share	%	Annual report under FQD 7a
	Fossil share C in FAME	%	Annual report under FQD 7a
	Share of heavy metals in fuels and oils	mg/kg	VÚRUP a.s.
	Share of aromatics hydrocarbons in gasoline	%	Annual report under FQD 8
	Share of olefins in gasoline	%	
	Share of PAU in diesel oil	%	
	Cetin number of diesel oil	-	
	Share of sulphur in fuels	mg/kg	
Railway	Consumption of fuels	liters	ŽSSR, Cargo Slovakia, CER Slovakia
	Fuel consumption by locomotives/engine units	liters	ŽSSK
Navigation	Consumption of fuels	t	Slovenské plavby a prístavy a.s., TAM s.r.o.
Data for air pollutants inventory			

Energy sector

Data	Type of data	Units	Source
Fugitive emissions – Solid fuels	Coal mined	t	Hornonitrianske bane Prievidza a.s.
	Termination of mining		
Fugitive emissions – oil and natural gas	Oil extraction	t	ŠÚ SR
	Oil transportation		
	Oil processing		
	Extraction of NG	m ³	

Energy sector			
Data	Type of data	Units	Source
	Processing of NG		
	Storage of NG		
	Distribution of NG		SPP-distribúcia a.s.
	Transit of NG		Eustream a.s.
	Leaks during transit of NG		SPP-distribúcia a.s.
	Leaks in the distribution of NG		
Fugitive emissions - charcoal	Production	t	FAOSTAT
Reference approach	Natural gas	m ³	Energy balance ŠÚ SR
	Solid fuels	t	
	Liquid fuels	t	
	Renewable resources	t	
	Calorific value	TJ/t	ŠÚ SR, SPP
	EF	tCO ₂ /TJ	
Liquid fuels - Refinery gases	Composition	-	Operator
	NCV	TJ/t	
	EF	tC/TJ	
	OXF	-	
	Carbon content	weight %	
Liquid fuels - Coke	NCV	TJ/t	Operator
	EF	tC/TJ	
	OXF	-	
	Carbon content	weight %	
Liquid fuels – heating fuels	NCV	TJ/t	Operator
	EF	tC/TJ	
	OXF	-	
Liquid fuels	NCV	TJ/t	ŠÚ SR
	NCV	TJ/t	EU-ETS reports

Energy sector			
Data	Type of data	Units	Source
	EF	tC/TJ	
	OXF	-	
Solid fuels	NCV	TJ/t	ŠÚ SR
	NCV	TJ/t	EU-ETS reports
	EF	tC/TJ	
	OXF	-	
Gaseous fuels	Composition	-	SPP-distribúcia a.s.
	NCV	kWh/m ³	
	EF	tCO ₂ /TJ	
	Density	kg/m ³	
Biomass	NCV	TJ/t	ŠÚ SR
	NCV	TJ/t	EU-ETS reports
	EF	tCO ₂ /TJ	
	OXF	-	
Industrial waste	Biological carbon content	weight %	EU-ETS reports
	Fossil carbon content	weight %	
	NCV	TJ/t	
	EF	tC/TJ	
	OXF	-	
Activity data – Liquid fuels	Consumption	t	ŠÚ SR ENER 724, ENER 723, ENER 725
			EU-ETS reports - 1A1 a 1A2
			NEIS small sources <20 employees
Activity data – Solid fuels	Consumption	t	ŠÚ SR ENER 724, ENER 723, ENER 725
			EU-ETS reports - 1A1 a 1A2
			NEIS small sources <20 employees
Activity data – Gaseous fuels	Consumption	thousand m ³	ŠÚ SR ENER 724, ENER 723, ENER 725
			EU-ETS reports - 1A1 a 1A2

Energy sector

Data	Type of data	Units	Source
			NEIS small sources <20 employees
Activity data – Biomass	Consumption	t	ŠÚ SR ENERG 724, ENERG 723, ENERG 725
Activity data of operators with AMS	Consumption	thousand m ³	Operators/verifiers ETS
Activity data from the refinery	Consumption		Slovnaft
Activity data from iron production	Consumption		NEIS database, EU-ETS
Stationary combustion in manufacturing industries	Data on fuels for the production of electricity and steam and for combustion in stationary sources in industry, services, agriculture, and other sources	TJ	NEIS
Waste	Amount of incinerated and co-incinerated waste	t	NEIS
Cement	Amount of cement clinker	t	Cement production facilities
Households	Data on household fuels	t	SHMÚ
Data for air pollutants inventory			

Waste sector

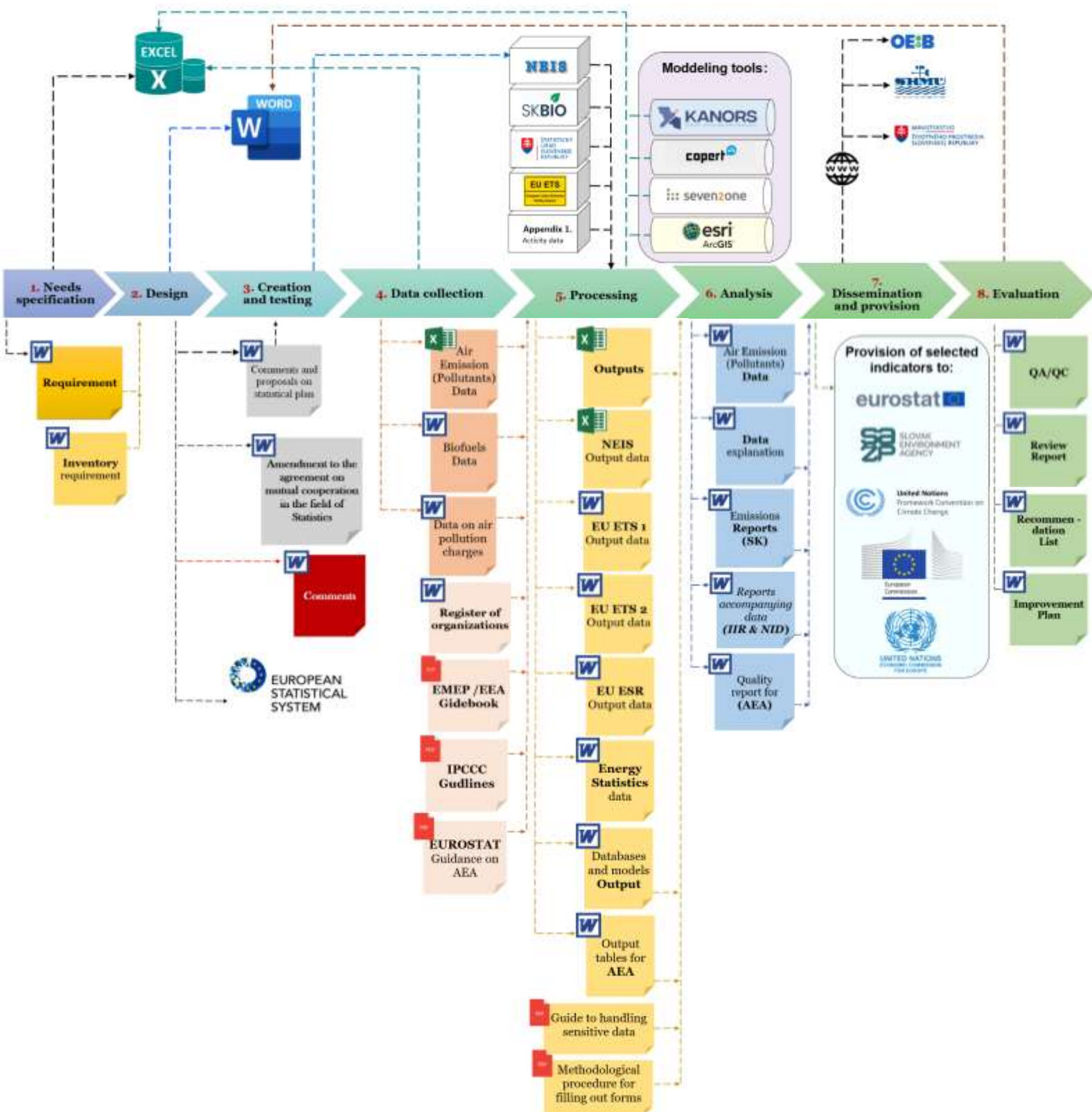
Data	Type of data	Units	Source
Real wage index	Statistical data for the current year	HDP/capita	ŠÚ SR
Amount of municipal waste	Data on the amount and method of disposal of produced municipal waste according to waste codes and method of disposal/recovery	kt	MŽP SR, Waste department
Landfills database	Number and nature of landfills in Slovakia	number	Web page ŠGÚ DŠ
Amount of industrial waste	Data on the quantity and method of disposal of produced industrial waste according to waste codes and method of disposal/recovery	kt	MŽP SR, Waste department
Consumption of biogas for energy purposes	Data on the total electricity produced and the composition of the burned landfill gas	MWh/m ³	ÚRSO
	In total		ŠÚ SR

Waste sector			
Data	Type of data	Units	Source
Number of inhabitants of the Slovak Republic	Connection to the sewage system	%	MŽP SR / VÚVH / SAŽP
	Connection to sewerage and wastewater treatment plant (WTP)	%	
	No connection	%	
	Using septic tanks	%	Expert judgment
	Using a domestic sewage treatment facility	%	
Production of waste water (WW) Municipal WW	Municipal WW		ŠÚ SR
	Quantity and composition of WW - input	m ³ /year, kg/year	SHMÚ
	Quantity and composition of WW - output	m ³ /year, kg/year	
	WW treatment technology		VÚVH Bratislava
	Amount and composition of sludge	ton/year	
	Sludge handling methods		
	Nitrogen content in sludge	%	ŠÚ SR
	Protein consumption per capita	g/inhab. day	
Production of waste water (WW) Industrial WW	Industrial WW		SHMÚ / SAŽP
	Quantity and composition of WW - input	m ³ /year, kg/yea	
	Quantity and composition of WW - output	m ³ /year, kg/yea	
	WW treatment technology	ton/year	ŠÚ SR
	Amount and composition of sludge		
Composting	Recovery of municipal waste – Reclamation of organic substances and composting	%	ŠÚ SR
	Recovery of industrial waste (Other thermal processes, pyrolysis...)	%	
Waste incineration	Amount of incinerated municipal waste	t	NEIS
	Amount of incinerated industrial waste		
	Amount of hazardous waste burned		
	Amount of incinerated hospital waste		
	The number of bodies burned in the crematorium		
Other waste	Number of burned cars, houses, industrial buildings		Fire Engineering and Expertise Institute of the Ministry of the Interior of the Slovak Republic

Waste sector			
Data	Type of data	Units	Source
Anaerobic digestion	The amount of nitrogen entering the biogas plant	kt	SHMÚ
Data for air pollutants inventory			

Residential sector			
Data	Type of data	Units	Source
Heat supplied via CHS for apartments and non-residential buildings	Number of apartments connected to CHS	pc	Veolia Energia Slovensko, a.s. SPRAVBYTKOMFORT, a.s. Prešov Nitrianska teplárenská spoločnosť, a.s. STEFE Zvolen, s.r.o. Popradská energetická spoločnosť, s.r.o. TEPELNÉ HOSPODÁRSTVO spoločnosť s ručením obmedzeným Košice Trnavská teplárenská, a.s. STEFE Banská Bystrica, a. s. Byterm, a.s. Osbd Žilina Martinská teplárenská, a.s. Bardterm, s.r.o. TEPLÁREŇ Považská Bystrica, s.r.o. CZT Ružomberok Energobyť s.r.o. Humenné
	Heat sold/supplied apartments CH	kWh	
	Sold/supplied heat for DHW apartments	kWh	
	Sold/supplied heat of non-residential buildings CH	kWh	
	Sold/supplied heat of non-residential buildings DHW	kWh	

Annex No. 2: Structure of processes of the NS SR



Annex No. 3: QA/QC plans

Internal QA/QC plan for GHG					
Activity		Responsible	Check	Time	Record
1.	Evaluation of Improvement plans	Sectoral experts NIS coordinator Deputy of NIS coordinator	Quality manager MŽP SR – NFP	15. 01.	Improvement plan for every sector
2.	Tasks and financial plan of NIS – preparation	NIS coordinator Deputy of NIS coordinator	MŽP SR – NFP Quality manager Head of the SHMÚ	12. 02.	Information on budget, capacity (personal, external, internal), training plan, meetings and business trips plan, plan of QA/QC activities for the inventory year.
3.	Update of capacity incorporating updates for each sector	Sectoral experts (SE) Deputy of SE	MŽP SR – NFP Quality manager Head of the SHMÚ	28. 02.	Responsibilities matrix Description of work activities
4.	Work assignment and contracts signing for each sector	NIS coordinator Deputy of NIS coordinator	MŽP SR - NFP Head of the SHMÚ	31. 03.	Frame contracts with the sectoral experts Specification of tasks for a given year (improvement plan) Nomination letters for sectoral experts
5.	Plan of QA/QC activities for the emission inventory on overall and sectoral level	Sectoral experts (SE) Deputy of SE	NIS coordinator Deputy of NIS coordinator Quality manager	10. 03.	Description QA/QC activities in each sectoral chapters
6.	Key sources and uncertainty management for each sector	Sectoral expert for uncertainty Sectoral experts NIS coordinator	Deputy of NIS coordinator Quality manager	15. 03.	Report on key sources and uncertainty evaluation Template for the key sources and uncertainty evaluation
7.	Final evaluation of emission data on sectoral level based on the external audit of the European Commission	Sectoral experts NIS coordinator	Deputy of NIS coordinator Quality manager MŽP SR – NFP	31. 05.	Verification protocols Description of changes Updated sectoral report
8.	Workshop – meeting of experts, ministries, SNE; Program: evaluation of results, finding from the reviews, proposals for improvement, proposal for the inventory plan for next NIR	Sectoral experts NIS coordinator Deputy of NIS coordinator	MŽP SR – NFP Quality manager	April September December	Report from the meeting

Internal QA/QC plan for GHG

Internal QA/QC plan for GHG					
Activity		Responsible	Check	Time	Record
9.	Completeness check of emission inventory	Sectoral experts	NIS coordinator Deputy of NIS coordinator Quality manager MŽP SR – NFP	30. 09.	Report from completeness check
10.	Methodical updates, recalculation list on sectoral level, according to IPCC 2006 GL and IPCC 2019 Refinements	Sectoral experts	NIS coordinator Deputy of NIS coordinator Quality manager	31. 10.	Report of emission for each sector
11.	Sectoral final reports delivery	Sectoral experts	NIS coordinator Deputy of NIS coordinator Quality manager	30. 11.	Delivery protocols Drafts of sectoral reports
12.	Participation in individual evaluations and cooperation in preparing of view on the review assessment by the UNFCCC secretariat	Sectoral experts	NIS coordinator Deputy of NIS coordinator Quality manager	continuously	Sectoral assessment reports

External QA/QC plan for GHG

External QA/QC plan for GHG					
Activity		Responsible	Check	Time	Record
1.	SVK Annual Report submission	NIS coordinator Sectoral experts National administrator	Ministry of Environment of the Slovak Republic – NFP Deputy of NIS coordinator	15. 01.	Annual Report - draft Elements of NID SVK - draft CRT tables
2.	Revised Annual Report of the SVK	NIS coordinator Sectoral experts National administrator	Ministry of Environment of the Slovak Republic – NFP Deputy of NIS coordinator	15. 3.	Indicators CRT tables NID SVK
3.	Submission of the Report according to Article 27 (5) of Regulation (EU) 2018/1999	NIS coordinator Ministry of Environment of the Slovak Republic Ministry of Agriculture and Rural Development of the	EK	15. 3.	Initial, preliminary and non-binding annual estimates of emissions and removals from cropland management and grazing land Management.

External QA/QC plan for GHG

External QA/QC plan for GHG					
Activity		Responsible	Check	Time	Record
		Slovak Republic (National Forest Centre, Soil Science and Conservation Research Institute)			
4.	Report on Policies and measures and projections	Projection coordinator Ministry of Environment of the Slovak Republic NIS coordinator Sectoral experts	Ministry of Environment of the Slovak Republic – NFP Deputy of NIS coordinator	15. 3.	Report and tables
5.	ESR annual review	NIS coordinator Deputy of NIS coordinator Sectoral experts	Technical Expert Review Team	15. 2.-20. 4.	Report from the review until 30.6.(depending on the findings and their solution)
6.	Nomination letters for the sectoral experts	Ministry of Environment of the Slovak Republic – NFP	Deputy of NIS coordinator	15. 4.	Nomination Letters List of nominated sectoral experts
7.	National inventory submission to the UNFCCC - GHG emission inventory - National Inventory Document	NIS coordinator Sectoral experts National Registry	Deputy of NIS coordinator Ministry of Environment of the Slovak Republic – NFP	15. 4.	CRT tables NID SVK NID SVK published on the official web of the UNFCCC
8.	Publicity of the SVK NIR and emissions data on the official web of the SVK NIS	NIS coordinator Deputy of NIS coordinator	MŽP SR – NFP	15. 5. 2021	Update of data on https://oeab.shmu.sk
9.	Completion and updating of the NID SVK on the basis of Initial Assessment by the EU review.	NIS coordinator Sectoral experts	Deputy of NIS coordinator Ministry of Environment of the Slovak Republic – NFP	6 weeks after 15. 4.	Repeated Emission GHG inventory and NIR SVK submission (if relevant)
10.	Audit of the status of the preparation of the emission GHG inventory – check days.	NIS coordinator Sectoral experts	Deputy of NIS coordinator Ministry of Environment of the Slovak Republic – NFP	30. 6. 30. 9.	Report from the coordination meetings of the NIS
11.	Proxy Inventory SVK	NIS coordinator Sectoral experts	Deputy of NIS coordinator Ministry of Environment of the Slovak Republic – NFP	31. 7.	Proxy inventory of GHG

External QA/QC plan for GHG

External QA/QC plan for GHG					
Activity		Responsible	Check	Time	Record
12.	International review of the inventory coordinated by the secretariat UNFCCC	NIS coordinator Deputy of NIS coordinator Sectoral experts Ministry of Environment of the Slovak Republic – NFP	Expert Review Team coordinated by the secretariat UNFCCC	September	Preliminary Report from the International review of the NID SVK
13.	Data delivering to the Statistical Office of the Slovak Republic. Distribution of the SVK NIR to the relevant institutions.	NIS coordinator Sectoral experts	Deputy of NIS coordinator Ministry of Environment of the Slovak Republic – NFP	31. 10.	Statistical record Emission GHG inventory
14.	Measures and objectives for improvements in QA/QC procedure of GHG emission inventory for relevant sectors based on the preliminary results of the review NID SVK	Sectoral experts Deputy of NIS coordinator	NIS coordinator Ministry of Environment of the Slovak Republic – NFP	30. 11.	Report and Improvement plan for the inventory

QA/QC plan for air pollutant inventory

QA/QC plan for air pollutant inventory					
Activity		Responsible	Check	Time	Record
1.	Submission of emission balance results for emission inventories by sector	Sectoral experts	Quality manager Coordinator	15. 1.	Inventory of emissions in NFR 14 categorizations for the sector and for the inventory
2.	Evaluation of the improvement plan	Sectoral experts Coordinator	Quality manager	15. 2.	Improvement plan for each sector
3.	Reporting of the national inventory for all sectors to EC and UNECE	Coordinator	Quality manager SAŽP	15. 2.	Electronic confirmation for the MŽP SR and SAŽP on timely reporting of national inventories
4.	Assigning responsibilities to team members, incorporating updates for individual sectors	Sectoral experts	Coordinator Quality manager	28. 2.	Description of work activity
5.	Recalculations and correction of erroneous data	Sectoral experts	Quality manager Coordinator	22. 2.	Evaluation of control

QA/QC plan for air pollutant inventory

QA/QC plan for air pollutant inventory					
Activity		Responsible	Check	Time	Record
6.	Analysis of key categories - trend and level assessment	Coordinator	Quality manager Sectoral experts	22. 2.	Resulting evaluation of key categories
7.	Submission of sectoral reports	Sectoral experts	Quality manager Coordinator	1. 3.	Sectoral reports
8.	Compilation and reporting of a complete national inventory report	Coordinator	Quality manager SAŽP	15. 3.	Informative inventory report on the national inventory
9.	In-depth review of inventory under CLRTAP and NECD	Sectoral experts Coordinator	Coordinator	May - June	Draft review report
10.	In-depth review of the inventory report under NECD	Sectoral experts Coordinator Quality manager	Technical team of experts	November	Final report from the review process
11.	Preparation of the improvement plan	Sectoral experts Coordinator	Quality manager	September	Improvement plan for each sector according to recommendations from the review
12.	Coordination meeting - meeting of experts Program: evaluation of the results and conclusions of the emission inventory control, submission of a proposal for improvement for the current year, development of an improvement plan	Sectoral experts Coordinator	Quality manager	September November	Minutes of the meeting