TWINNING PROJECT NEWSLETTER

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Published by the Twinning project: "Further strengthening the capacities for effective implementation of the acquis in the field of air quality"

IN FOCUS

Twinning Project

The European Union, through the Instrument for Pre-Accession Assistance, is funding the Twinning Project "Further strengthening the capacities for effective implementation of the acquis in the field of air quality" (MK 12 IB EN 01). The project duration is 21 months (May 2015 – January 2017) with a budget of 1.1 million Euros.

The main purpose of the project is to strengthen the administrative capacities in the area of air quality management and health impact assessment of air pollution by implementing the appropriate EU acquis. The activities of the project will aid the beneficiaries in making the necessary reforms and improvements for the implementation of air quality legislation. This should ultimately lead to improved air quality and reduced impacts of air pollution to the human health. The project is jointly implemented by the Ministry of Environment and Physical Planning as the main beneficiary organization and Finnish Meteorological Institute and Environment Agency of Austria as the EU member state partners. During the project implementation newsletters will be prepared concentrating on specific themes covered by the project activities.

Emission inventory preparation obligations for parties of the Convention on Long-range Transboundary Air Pollution (UNECE/LRTAP)

The UNECE Convention on Long-range Transboundary Air Pollution was signed in 1979 to improve air quality on the local, national and regional levels. Over the years, it has been extended by eight protocols that identify specific measures to be taken by the parties of the convention to cut their emissions of air pollutants. The activities of the Twinning project support the MEPP to fulfill the requirements of the UNECE/LRTAP convention and the protocols related to the emission inventory and reporting of the following pollutants: nitrogen oxides (NOx), sulfur dioxide (SO_2), non-methane volatile organic compounds (NMVOC), ammonia (NH_3), persistent organic compounds (POPs) and heavy metals (HM).

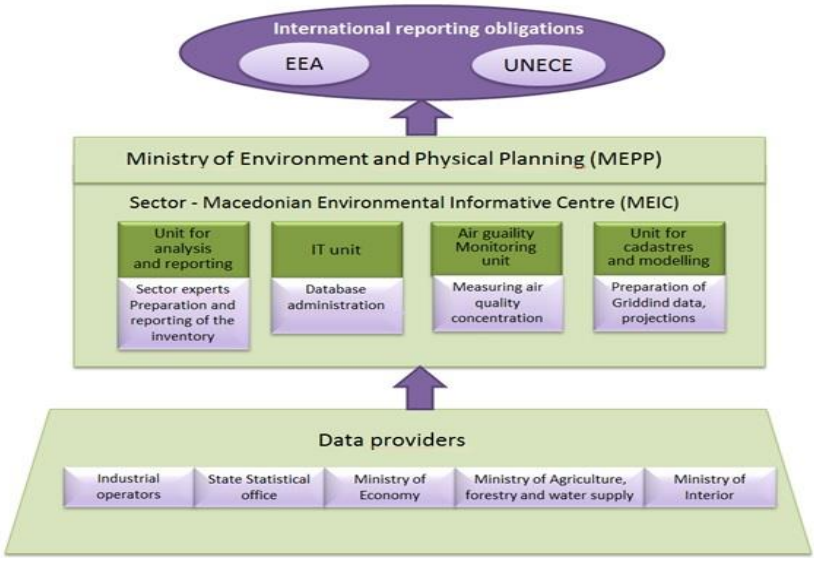

Figure 1. Iinstitutional arrangements for the inventory system currently used in BC

Preparation of the Informative Inventory Report (IIR) for 2014

With the support of the Twinning project the national emission inventory as well as the Inventory Informative Report (IIR) for the year 2014 were prepared and reported according to the obligations under the UNECE/LRTAP Convention. For the first time during this reporting round the historical emissions for the whole trend period of 1990-2014 were calculated and reported. The quality of the inventory and IIR were improved significantly. A number of missions by emission inventory experts from Environment Agency Austria were dedicated to improve the emission inventory methodologies (gap filling, gathering of proper activity data, and determination of emission factors) and to introduce key source analysis as well as trend analysis calculations. In addition the implementation of the QA/QC system in the preparation of the inventory was introduced.

In this issue:

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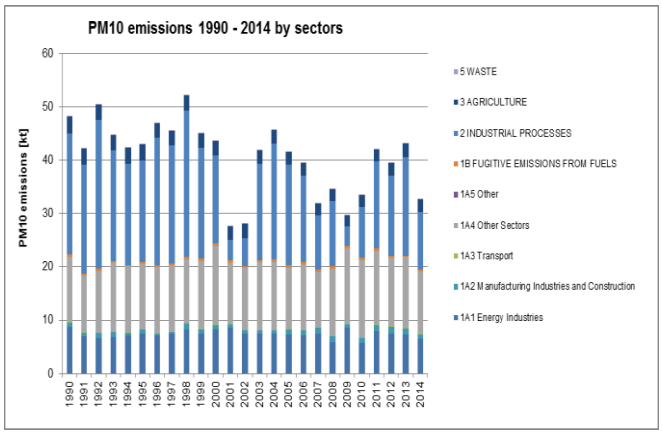

Figure 2. PM_{10} emissions by sectors 1990 – 2014

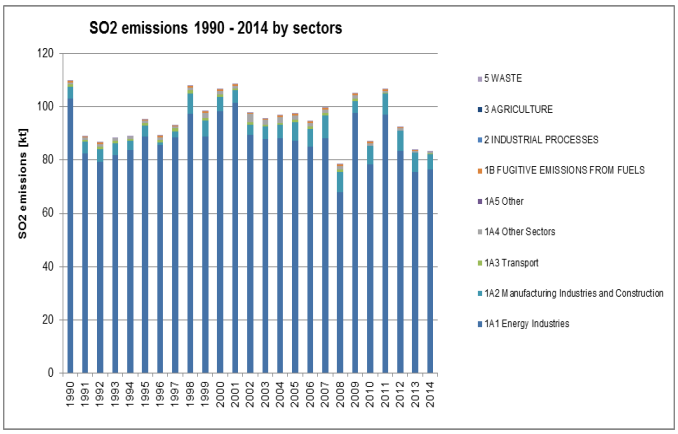

Figure 3. SO_2 emissions by sectors 1990 – 2014

Contribution of different sectors to emissions of main pollutants in 2014

The main contributors to NOx pollution in 2014 were the transport sector and power plants, which contributed to 40% and 41% of the national total NOx emissions, respectively. Manufacturing industries also contributed to 14% of the total NOx emissions.

Almost all SO_2 emissions in 2014 were created by the energy sector (public electricity and heat production) which contributed to 92% of the national total SO_2 emissions. Approximately 7% of the total SO_2 emissions originated from manufacturing industries.

The main sources of NMVOC emissions in 2014 were from so called other sectors (mainly residential heating), industrial processes and product use (mainly solvent use), which contributed to 31% and 21% of the national total NMVOC emissions, respectively. Transport also contributed to 19% of total NMVOC emissions. Agricultural NMVOC emissions, mainly resulting from agricultural soils, contributed to 14% of the national total emissions.

NH_3 emissions were mainly resulting from the agriculture sector contributing to 89% of the national total NH_3 emissions. Approximately 11% of the total emissions are originated from residential heating.

The main sources for CO emissions in 2014 were residential heating and transport, contributing to 61% and 27% of the national total CO emissions, respectively.

The main sources of heavy metal emissions were industrial processes, iron and steel production, manufacturing industries, construction and energy sector (public electricity and heat production and residential heating) depending on the heavy metal. The largest source of polycyclic aromatic hydrocarbons (PAHs) was the energy sector, mainly residential heating. For POPs emissions the aluminum production was the main source of HCB (hexachlorobenzene) emissions, and industrial processes, residential heating and iron and steel production were the main sources of PCB (polychlorinated biphenyls) emissions. Residential heating and iron and steel production were the main sources of dioxins.

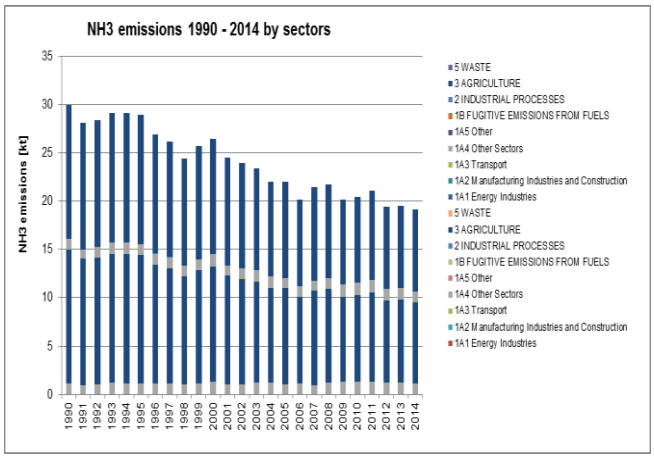

Figure 4. NH_3 by sectors 1990-2014

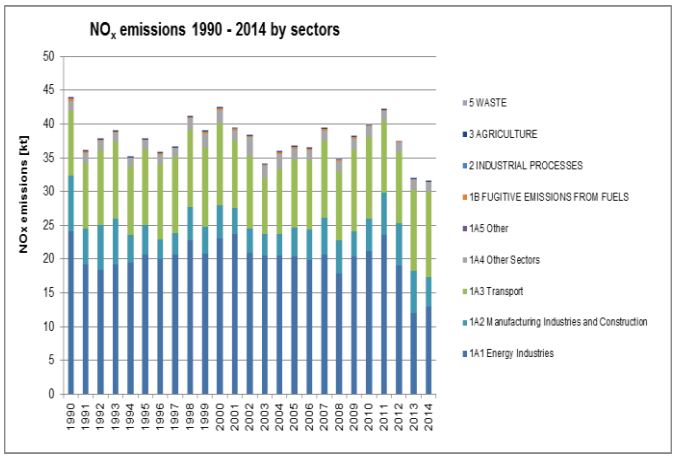

Figure 5. NOx emissions by sectors 1990-2014

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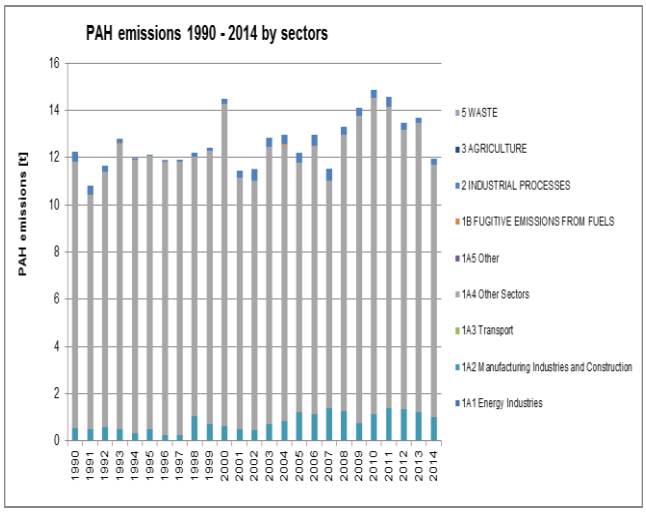

Figure 6. PAH emissions in 1990-2014 by sectors

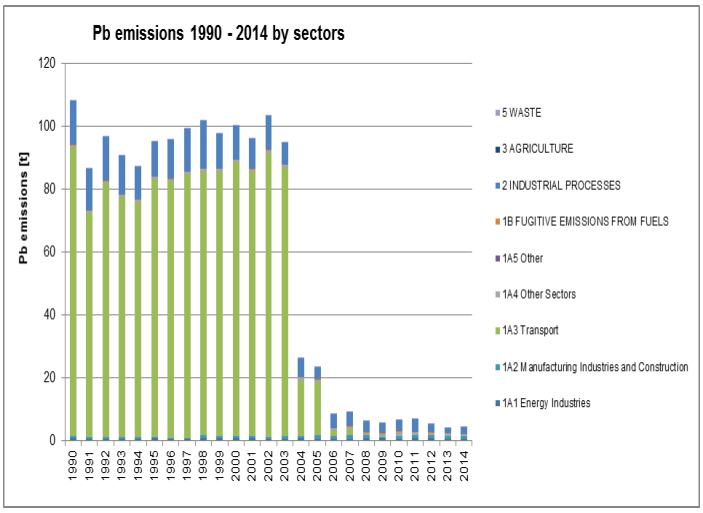

Figure 7. Lead (Pb) emissions in 1990-2014 by sectors

Emission trends in the period 1990-2014

The IIR report presents trend analysis in the country for the period 1990 – 2014. According to the emission inventory a decreasing trend is noticed in NOx emissions since 2011, which is a result of the shorter operation of power plant REK Oslomej in recent years, decrease in coal consumption and gasification of one heating plant. Lower NOx emissions in 2013 compared to 2012 are also a result of the modernization of the boilers in the major power plant REK Bitola, as well as gasification of the existing heating plants.

There is no clear trend in the SO_2 emissions as the annual emission amounts vary, depending on the coal consumption the electricity production being the main source for SO_2 emissions.

The trend on NMVOC emissions is variable. In the period from 2013 to 2014 emissions decreased by 16%, due to reduced use of solvents as well as slightly lower emissions from the residential sector.

The trend of NH_3 emissions is clearly decreasing, which is related to decreasing livestock numbers and implementation of best available techniques in the bigger farms.

Particulate matter emissions show no trend, due to variable annual operation of the installation for ferroalloys production as a major source in the national total particulates emissions. The contribution from residential heating has not changed significantly due to the fact that biomass is still the main fuel used in household heating.

The lead emissions have decreased significantly since 2003 as a result of the closure of a smelter company in Veles and use of unleaded gasoline in transport. The closure of the smelter company also reflects on the decline of mercury, cadmium and PCBs emissions. With regards to dioxins and PAHs the trend is not very clear, but nevertheless slightly decreasing trend can be noticed from 2011 onward. The higher emissions in 2013 compared to 2012 are due to the colder winter. A decline in biomass fuel consumption and increase of natural gas fuel combustion in the latest year results in lower emissions of these pollutants.

Further improvements of the emission inventory

Significant improvements were achieved in the emission inventory and IIR preparation with the support of the Twinning project. Nevertheless, due to limitation of qualified staff for emission inventory preparation and lack of national activity data the need remains for further improvement. The transport sector is a significant contributor of NOx and CO emissions, but the emissions are calculated using the most basic methodology. In future, first priority is to begin the utilization of Copert IV model for improving the calculation of emissions from this sector. The second priority is the improvement of the methodology for calculation of NMVOC emissions from solvent and other product use, which is already planned to be covered as part of the remaining activities of the Twinning project. Establishment of functional QA/QC procedures for emission inventory preparation is also essential to enable improved cross checking of data and data quality.

The emission inventory and the reports for 2014 and the previous years are available on the website of the European Environmental Agency:
http://cdr.eionet.europa.eu/mk/un/UNECE_CLRTAP_MK

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Twinning Programme

Twinning is an initiative of the European Commission launched in May 1998 in the context of the preparation for enlargement of the European Union. This Programme was conceived as an instrument for targeted administrative co-operation to assist Candidate Countries to strengthen their administrative and judicial capacity to implement EU legislation as future Member States of the European Union. The Twinning Programme provides the framework for administrations and semi-public organizations in the beneficiary countries to work with their counterparts in Member States. Together they develop and implement a project that targets the transposition, enforcement and implementation of a specific part of the acquis communautaire.

The key feature of Twinning is the concept of mandatory results. Both project partners commit themselves to work towards commonly agreed results in a joint project implementation process. Twinning projects should focus on limited and well-defined institutional targets. These mandatory results can represent an immediate benchmark, constituting a specific criterion in relation to administrative capacity, as long as there is a jointly agreed target.

At the completion of the EU-funded Twinning Project, the beneficiary country should have significantly improved organization enabling it to properly fulfil its objectives in relation to the EU acquis or in relation to the relevant area of co-operation with the EU.

The aim of EU-funded Twinning Projects is to produce operational outcomes in a particular field. Achieving these goals calls for a long and thorough cooperation between the beneficiary country and the member state, bringing into play whatever actions are required to achieve the desired results.

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