

TEAMS success

Setting up the Environmental Management Center in Serbia

emc
Environmental
Management Center
in Serbia

Key partners in the EMC project:

- Serbian Environmental Protection Agency (SEPA): www.sepa.gov.rs
- Ministry of Energy, Development and Environmental Protection of the Republic of Serbia: www.merz.gov.rs
- Regional Environmental Center for Central and Eastern Europe (REC): www.rec.org
- Emisoft AS, Norway: www.emisoft.com

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Acknowledgements

This publication was developed in spring 2013 to present the overall activities and results of the project "Setting up the Environmental Management Center (EMC) in Serbia" (SRB-10/0124), funded by the Royal Norwegian Ministry of Foreign Affairs. The main objective of the project was the establishment of the EMC in Serbia for efficient emissions monitoring and reporting within the Serbian Environmental Protection Agency (SEPA), connecting the business sector, environmental authorities and relevant EU institutions.

The REC would like to thank the staff of SEPA and other governmental bodies in Serbia for their thoughtful guidance and cooperation, as well as the many independent experts who provided excellent input during the project. A list of all EMC team members is provided in Chapter 6 of this publication.

The REC also expresses its gratitude to the Government of the Kingdom of Norway for its financial support to this project, and to SEPA, which enabled the setting up of integrated environmental electronic reporting in Serbia.

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Filip Radović
Director

The Serbian Environmental Protection Agency

In the late 1990s, awareness grew at international level of the urgent need to protect and enhance the environment. Recognising the global, transboundary threat of environmental pollution, the international community is aware of the need to ensure adequate, efficient and high-quality environmental protection.

The impact of industry on the environment, human health and quality of life is emerging as an important indicator of corporate responsibility, good business strategy and sound operational management. The world's leading companies recognise that, alongside economic indicators, the quantities and characteristics of released wastewater, flue gases and waste, as well as overall environmental management, should be decisive factors in the choice of future business partners. However, without adequate data and measuring methods, companies are unable to efficiently and effectively manage activities that have potentially negative environmental and health impacts.

The goal of the project "Setting up the Environmental Management Center (EMC) in Serbia", financed by the Government of the Kingdom of Norway and implemented by SEPA, is to provide support to businesses that operate facilities, and that are engaged in activities, that may be hazardous to human health and the environment. These businesses need assistance in establishing a system for internal data collection, preparing data for reporting, and submitting annual reports to the National Register of Pollution Sources.

Environmental reporting should be understood not as a cost, but as an investment. Big investors, primarily international donors, are setting ever stricter demands for environmental protection, and fulfilling these demands will lead to multiple benefits and enhance companies' market position.

The project involved 10 large state-owned, socially owned and private companies that were keen to find an efficient way to address their environmental impacts. In 2012, electronic reporting to the National Register of Pollution Sources was introduced using TEAMS software supplied by the Norwegian company Emisoft. This "green accounting" software produces data indicating the extent to which a company's activities and use of natural resources produce an environmental impact.

It is very important for the EMC to become self-sustaining once all the components are in place and after mastering all the system functions. If we are successful — as we are certain we shall be — this project will provide Serbia with a valuable tool for managing the environment and fulfilling EU demands in a field that is of such great significance for our common future. As the newly elected director of SEPA, I will continue to support the successful results of the project.

Finally, I would like once again to express my gratitude to the Government of the Kingdom of Norway for its financial support. My gratitude also goes to the representatives of Emisoft and the Regional Environmental Center for Central and Eastern Europe for their expert and logistic support, and to all the employees of SEPA for their contribution to the successful realisation of the project.



Márta Szigeti Bonifert
Executive Director

The Regional Environmental Center for Central and Eastern Europe

The Regional Environmental Center for Central and Eastern Europe (REC) is an independent international organisation with a mission to assist in addressing environmental issues.

The REC fulfils this mission by promoting cooperation among governments, non-governmental organisations, businesses and other environmental stakeholders. We also support the free exchange of information and public participation in environmental decision making. Through training programmes, pilot projects, environmental assessments, analytical studies, educational packages and grants, the REC supports sustainability solutions in countries in various political and economic situations. We are ready to work in partnership with stakeholders to change existing paradigms and build resilient communities for the present and future in line with key international processes such as the Rio+20 United Nations Conference on Sustainable Development.

Crucial to the success of any environmental action are the smooth and efficient operation of environmental institutions and the availability of the necessary human and financial resources. The strengthening of environmental institutions is therefore at the heart of the REC's assistance.

In the framework of its efforts in the fields of green economy and capacity building, the REC has already developed several projects, including "Setting up the Environmental Management Center (EMC) in Serbia". The EMC promotes efficient emissions monitoring and reporting within the Serbian Agency for Environmental Protection (SEPA), and connects the business sector, environmental authorities and relevant EU institutions. The project is financed by the Royal Norwegian Ministry of Foreign Affairs, in the context of the REC's cooperation with the Government of the Kingdome of Norway on a number of multiannual projects and the strong partnership that has been developed through joint events and stakeholder forums in various countries.

The REC's key partner in the project is Emisoft, a Norwegian company that supplies TEAMS software, a powerful accounting and management tool for environmental reporting adjusted to meet the requirements of Serbian reporting legislation. The REC has worked closely on this project not only with SEPA, but also with the participating companies, and has contributed to the design of good reporting systems for both parties.

The project goal is to increase the capacities of SEPA, the industrial sector, partners and clients through the development of organisational infrastructure and software support, using models and case studies of emissions monitoring and reporting in other countries. The aim is to reduce environmental pollution, provide EMC member companies with enhanced environmental management capabilities, and enable cost reductions. Based on the valuable experience acquired in Serbia, the project can potentially be replicated in other developing countries that do not have electronic reporting systems in place.



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About the EMC project

After the official launch of the project “Setting up the Environmental Management Center (EMC) in Serbia” almost two and a half years ago, we are now coming to the end of the project journey. It is a pleasure to be able to present in this publication the overall activities and achievements of all those who participated in the project. The two years of preparatory activities in the Balkans that paved the way for this project are also described in the section “How it all started”.

Setting up the Environmental Management Center in Serbia

The main objective of the project was to establish an environmental management centre in Serbia for efficient emissions monitoring and reporting within the Serbian Environmental Protection Agency (SEPA), connecting the business sector, environmental authorities and relevant EU institutions.

We believe that the EMC will continue to assist Serbia to meet its environmental priorities, in particular by supporting direct users of EMC services. The main project output is the establishment of the EMC as an integral part of SEPA, including the necessary computer hardware and software support with implemented models of emissions monitoring and reporting towards national institutions and the EU. Efficient and sound routines and practices were introduced to SEPA, and members of staff were trained in order to ensure the provision of competent and professional services to participating companies, and to provide industrial partners with enhanced environmental management capabilities resulting in pollution reductions and cost savings.

Premises were provided by SEPA for the EMC office at the start of the project, and SEPA staff worked with the project team on a daily basis. Thanks to donor funding, the office was fitted with modern equipment and tools.

The successful implementation of reporting practices used in EU countries was facilitated by the project implementing agency. The TEAMS Sustainability Reporting software was used for the collection, consolidation, calculation, quality assurance and reporting of companies' environmental and corporate social responsibility data in a single system. This system, provided through the EMC project to Serbia, covers the needs of SEPA related to regulatory monitoring and reporting as a competent authority, as well as the needs of the industrial clients and partners in the project.

Using TEAMS as a development platform, two new tools were developed for SEPA and for industrial clients in Serbia: the Competent Authority Solution and the Parent Client Solution (see Chapter 4). These tools enable integrated electronic environmental reporting in Serbia and support environmental management and the introduction of the Eco-management and Audit Scheme (EMAS). Capacity-building events and training opportunities were also organised during the project.

KEY EMC PROJECT PARTNERS

- **The Serbian Environmental Protection Agency (SEPA)** — contracting authority and main beneficiary
- **Ministry of Energy, Development and Environmental Protection of the Republic of Serbia** — key partner
- **The Regional Environmental Center for Central and Eastern Europe (REC)** — project implementing agency
- **Emisoft AS, Norway** — selected via an open procurement procedure to supply environmental accounting and reporting software
- **The Royal Norwegian Ministry of Foreign Affairs** — provider of financial support through a direct contract with SEPA

HOW IT ALL STARTED

In 2006, the Regional Environmental Center for Central and Eastern Europe (REC) established contacts with the Norwegian company Emisoft AS, based in Bergen. We expressed our interest in Emisoft's environmental management and information system TEAMS, and several possibilities for cooperation based on TEAMS in the fields of education and industry were discussed. As the REC is an international organisation with a network of offices across Central and Eastern Europe and Turkey, the possibility of cooperation throughout the entire geographical area covered by the REC — including the Western Balkans — could be considered particularly beneficial. During personal and online discussions it became clear that the Western Balkan countries face a number of specific environmental issues and must address a variety of related challenges. We concluded that the establishment of environmental management centres would be a good way to address these challenges.

Significant support for the idea of environmental management centres in the Balkans was provided by the Royal Norwegian Ministry of Foreign Affairs, which granted the Emisoft–REC consortium NOK 367,000 in 2007 to implement the project "Study on the Establishment of an Environmental Management Centre in a Balkan Country" (Project no: 2070401 – Western Balkans). During this project, all eligible countries (Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro and Serbia) were assessed in a desk study, which identified three countries as meeting all the requirements related to hosting and making efficient use of an environmental management centre: Croatia, the former Yugoslav Republic of Macedonia and Serbia. These three countries were further assessed during field visits, which included visits to relevant state institutions and discussions with national experts. After talks with the Hydrometeorological Service of Serbia, the Serbian Environmental Protection Agency, the Electric Power Industry of Serbia, the Croatian Environment Agency, the Croatian Cleaner Production Center and the Macedonian State Environmental Inspectorate it was confirmed that the concept of establishing an environmental management centre is in accordance with national priorities in the environmental sector.

In 2008, the project team reported that all three pre-selected countries met the requirements for hosting and making efficient use of an environmental management centre. All three countries submitted letters of commitment indicating that, if selected, they were prepared to cooperate with such a centre. It was assumed that the greatest likelihood was for the establishment of a centre in Serbia, due to the size of its industrial sector and the availability of donor funds.

The REC continued intensive communications with Serbian stakeholders, and in particular with SEPA. On the basis of the Agreement between the Republic of Serbia and the REC on the Legal Status of the REC in the Republic of Serbia, a contract on technical cooperation with SEPA was signed in 2009. The contract defines five main areas for the establishment, development and improvement of direct technical cooperation: (i) the development of information systems for environmental protection; (ii) the development and refining of policies for environmental data management and reporting on the state of the environment; (iii) the development and improvement of procedures for environmental data processing and evaluation; (iv) the assessment of best available techniques and practices and their implementation in the field of environmental protection; and (v) the fulfilment of environmental reporting obligations defined by law and towards different international bodies, organisations and conventions. During an official signing ceremony at the REC on December 21, 2009, both parties expressed their hope that the international donor community would make possible the activities described in the agreement.

In 2010, the Royal Norwegian Ministry of Foreign Affairs agreed to the request of the Ministry of Environment and Spatial Planning and the Serbian Environmental Protection Agency, granting NOK 21,947,400 to implement the project "Setting up the Environmental Management Center (EMC) in Serbia" (Grant no. SRB-10/0124). As grant recipient, SEPA decided to appoint the REC as project implementing agency, in line with the technical cooperation agreement. Finally, after a public tender for the procurement of environmental accounting and reporting software, software installation and maintenance, and EMC consultancy services, the Norwegian company Emisoft AS was selected. The rest of the story is described in this publication.

Dr. Radoje Laušević, EMC Project Director

We offered our industrial partners, and made available to all other interested companies, a system solution that can be used as a management tool enabling them to:

- identify and control the environmental impact of their activities, products and services;
- improve monitoring and environmental protection;
- implement a systematic approach to accomplish their goals related to environmental protection and ensure evidence of goal achievement;
- achieve compliance with national and EU reporting requirements to local and central authorities and support reporting to shareholders, markets etc.;
- facilitate simulations and analyses, benchmarking, internal calculations and reports;
- explore potential for the reduction of taxes, costs and resource use; and
- improve data quality and reliability (traceability, revision history, access levels etc.).

Among the significant achievements of the EMC project is the active participation of all project team members, including an impressive pool of experts, professionals and dedicated environmentalists. The members of the EMC team are listed in Chapter 6.

The need to ensure the sustainability of project results has always been kept in mind. The sustainability study developed by SEPA in 2012 set the path for official EMC functioning as an integral part of SEPA, within the competences of the Department of the National Register of Pollution Sources (see Chapter 3). This function was adopted within SEPA's organisational structure later that year as a sustainable way to maintain the tools and functionalities developed during the project. After project completion, the EMC will continue to function under the Department of the National Register of Pollution Sources and will continue to enhance cooperation between the business sector, civil society and the government, thus fulfilling the primary goal of the project.

Ana Popović, EMC Project Manager

EMC INDUSTRIAL PARTNERS

- **Agroprodukt Šinković Ltd., Bečej** (poultry services, production and trade)
- **Beogradske Elektrane PUC,** Belgrade (district heating system)
- **Delta Agrar Ltd., Belgrade** (agribusiness, member of Delta Holding)
- **HIP-Petrohemija JSC, Pančevo** (production of petrochemical products, raw materials and chemicals)
- **Kolubara Ltd., Lazarevac** (coal production, processing and transport)
- **RTB Bor Ltd., Bor** (copper mining and smelting complex)
- **Sojaprotein JSC, Bečej** (soybean processing)
- **Tigar JSC, Pirot** (manufacture of rubber footwear, technical rubber and recycled rubber products)
- **Železara Smederevo Ltd., Smederevo** (steel production and processing)
- **Železnice Srbije JSC, Belgrade** (passenger and freight rail transport)

THE EMC PROJECT OFFICE

The EMC project brought together a group of committed people who share a common vision. At the heart of the project was the team at the EMC project office, which directed, connected and communicated with all the project partners.

The EMC project office ensured project management and implementation as an integral part of SEPA, using various communication channels with target groups and ensuring the visibility of the project. The EMC office also organised national and regional conferences, an international science conference and a number of training events, and produced brochures, newsletters and other EMC publications. Its motivated staff also supported the development of a sustainable organisational structure for the EMC in the future and provided support to the implementation of the TEAMS software with its applied models for emissions monitoring and reporting to national and EU institutions.

http://www.emc-project.gov.rs/

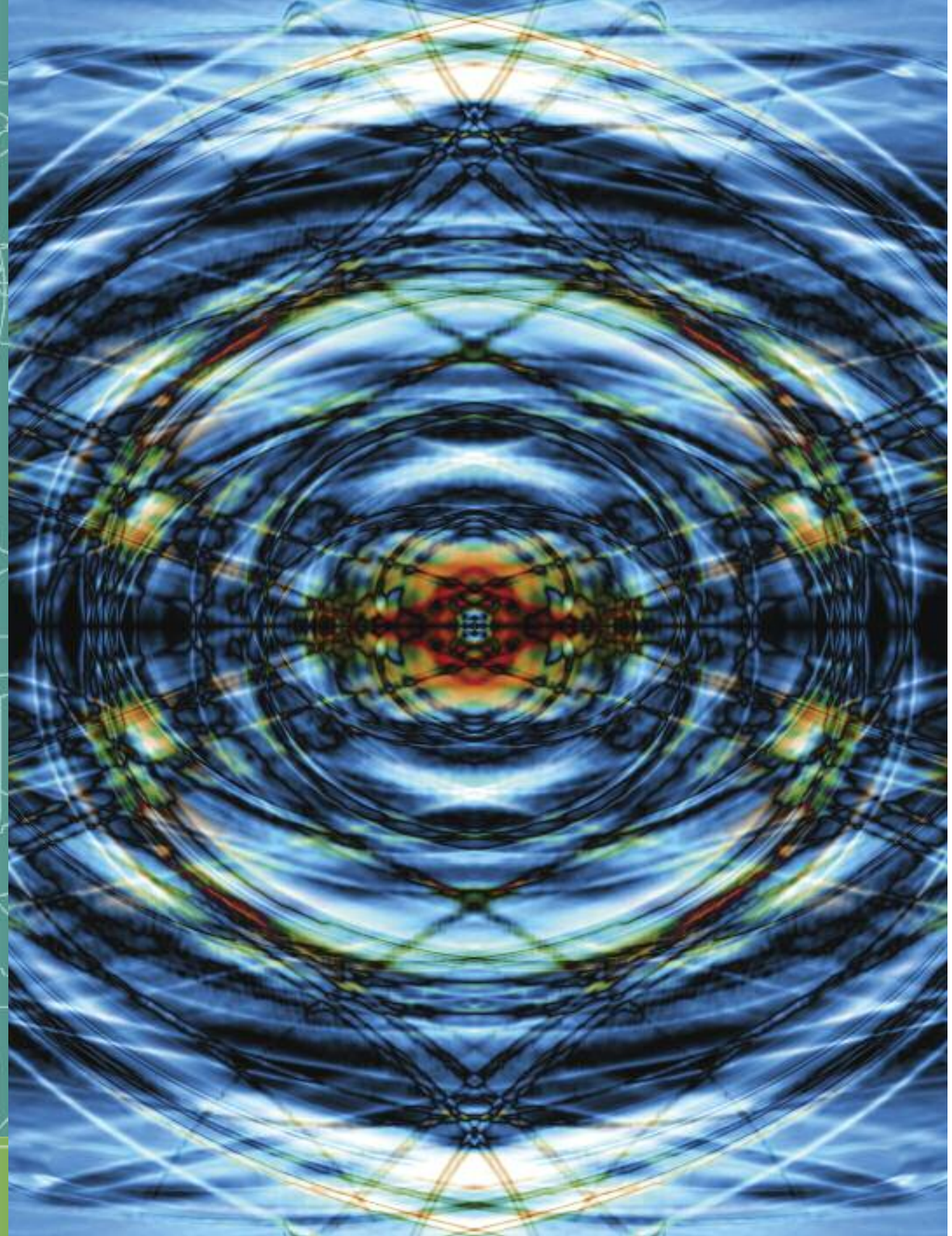
Serbian Environmental Protection Agency
Ruže Jovanovića 27a, 11160 Belgrade, Serbia











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Working partners

The success of the Environmental Management Center in Serbia is based on the contributions of the three working partners: the Serbian Environmental Protection Agency, which hosts the EMC; the Regional Environmental Center for Central and Eastern Europe, which was appointed by SEPA as project implementing agency; and the Norwegian company Emisoft AS, which won the tender to supply environmental accounting and reporting software.

The Serbian Environmental Protection Agency

The Serbian Environmental Protection Agency (SEPA), an administrative body within the Ministry of Energy, Development and Environmental Protection of the Republic of Serbia since 2004, carries out expert activities aimed at managing the national information system related to environmental protection. The aim is to monitor the status of environmental factors using environmental indicators, and to maintain the National Register of Pollution Sources. In addition, SEPA is responsible for the implementation of national air quality monitoring, including the automatic air quality monitoring country system and the National Programme for Research on Water and Sediment Quality. The activities of SEPA are carried out in cooperation with the European Environment Agency (EEA) and the European Environment Information and Observation Network (EIONET).

Using data on environmental parameters collected in the territory of the Republic of Serbia, SEPA elaborates annual reports on the state of the environment. These reports comprise a basic presentation of the environmental situation in the country, as well as recommendations and measures that should be implemented in the forthcoming period in order to enhance the environment in the Republic of Serbia. The Report on the State of the Environment is adopted by the government and submitted to the National Assembly of the Republic of Serbia. The data are also submitted to international organisations and institutions, in line with international obligations undertaken by the Republic of Serbia.

The Law on Ministries and the Law on Environmental Protection clearly recognise SEPA as the state institution competent for the establishment and management of the National Register of Pollution Sources. This means that SEPA implements the Protocol on Pollutant Release and Transfer Registers (PRTR Protocol), which is integral to the National Register of Pollution Sources. In addition, SEPA is responsible for controlling reports from facilities and for checking the accuracy of submitted data. Data for each year must be submitted by March 31 of the following year at the latest.

In 2011, in accordance with the recommendations of the European Commission, SEPA strengthened its capacities following the restructuring of the Government of the Republic of Serbia. In the same year, SEPA implemented air quality monitoring in operational terms through a national network of automatic monitoring stations for air quality surveillance at the level of the Republic of Serbia.

> The central EU body providing independent information on the environment is the European Environment Agency (EEA). Of the 32 EEA member countries, 23, including Serbia, have established agencies to implement environmental protection policy.

> The European Network of the Heads of Environment Protection Agencies (EPA Network) is an informal grouping that enables the exchange of opinions and experiences on issues of common interest to organisations involved in the practical, day-to-day implementation of environmental policies.

In addition, SEPA plays an important role in monitoring allergenic pollen. The results of this monitoring served as the basis for identifying pollen released into the environment as a pollutant, due to its negative and harmful impact on human health.

By integrating the work of national expert, scientific and educational institutions, and by carrying out projects and programmes in cooperation with international organisations, SEPA ensures a centralised approach to data and information on the state of the environment. This has enabled it to become, in the relatively short period of its existence, the national focal point for the collection and exchange of environmental data. The activities of SEPA are an optimal demonstration of the implementation of the Aarhus Convention in Serbia, providing strong support to the process of Serbia's EU association.

At the end of January 2006, the establishment of an integrated cadastre of polluters was initiated within SEPA, which included activities related to the implementation of the PRTR Protocol to the Aarhus Convention in the Republic of Serbia. In 2009, the National Register of Pollution Sources replaced the integrated cadastre of polluters.

The National Register of Pollution Sources contains systematised data on pollution sources, types and quantities; the methods and locations of pollutant releases into the air, water and soil; and the quantities, types, composition, treatment and disposal of waste.

Data from companies that report in accordance with the PRTR Protocol are used by SEPA as the basis for drafting reports that are submitted to the EEA. The national register includes some 270 facilities, which report in compliance with the PRTR Protocol. These are the most significant pollution sources in the Republic of Serbia, categorised by industry and including the energy industry and the production and processing of metals.

In compliance with the Convention on Long-Range Transboundary Air Pollution (LRTAP), SEPA also prepares an emissions inventory that is submitted to the Centre on Emission Inventories and Projections (CEIP) within the European Monitoring and Evaluation Programme (EMAP), a cooperative programme for the surveillance and evaluation of the long-range transmission of air pollutants in Europe.

The Regional Environmental Center for Central and Eastern Europe

The Regional Environmental Center for Central and Eastern Europe (REC) is an independent international organisation that was established in 1990 by Hungary, the United States and the European Commission. Today, the organisation is legally based on a charter with over 30 signatories.

The REC builds bridges between stakeholders and countries in addressing environmental issues. Active in Central and Eastern Europe (CEE) and beyond, the REC has its head office in Szentendre, Hungary, and offices throughout the region.

The 2011–2015 REC Strategy identifies various beneficiary areas according to their particular environmental challenges and political status: EU countries; EU enlargement countries; Eastern Partnership countries; and other regions.

Mission and objectives

The REC's mission is to assist in addressing environmental issues by promoting cooperation among non-governmental organisations, private institutions, governments, businesses and other environmental stakeholders, and by promoting the free exchange of information and public participation in environmental decision making. Through activities such as training programmes, pilot projects, environmental assessments, analytical studies, educational packages and grants, the REC seeks to support countries in various political and economic situations. The REC also acts as a bridge for transferring regional experience to countries throughout the world.

The REC's objectives are to:

- provide relevant services to all stakeholders in addressing environmental issues related to EU accession and sustainable development;
- implement a multi-stakeholder approach to environmental challenges; and
- maintain both a local presence and a regional perspective on environmental issues.

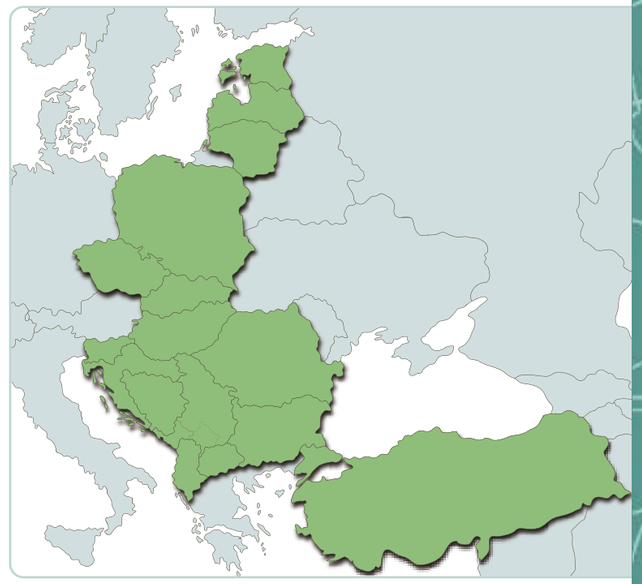
Structure

The REC headquarters in Szentendre, Hungary, has an international staff of over 90 people, most of them from CEE countries. In addition, the REC has offices throughout the region with a combined staff of over 100 people from 30 nationalities.

In harmony with its strategy for 2011–2015, the REC is committed to contributing to the further development of the outcomes of Rio+20, mainly in CEE, within two main directions of work: governance for sustainability and green economy. Within this framework, the REC carries out project activities in specialised working teams, or topic areas, which make use of the available expertise at all organisational levels of the REC (head office and country offices). The REC currently has 12 topic areas: Biodiversity; Climate Change and Clean Energy; Educational Tools; Environmental Financing; Environmental Management; Green Transport; Health and Environment; Law Development, Enforcement and Compliance; Local Governance; Participatory Governance; the Sustainable Development Academy; and Water Management. These topic areas have developed a range of products and services that are used in partner countries during the implementation of project activities.

The REC's topic area system provides a flexible framework for putting the knowledge and skills of our international organisation into practice across borders and disciplines. The system exploits the full potential of the REC network; our ability to work in local languages; our established contacts with high-level officials and experts; and our role as a neutral platform for the exchange of ideas and experience.

Two stable funds generously support the REC's efforts: the Japan Special Fund and the Italian Trust Fund, which focus on sustainability projects.



Major achievements

The REC implements around 200 projects annually. Recent projects include the Green Pack multimedia educational toolkit, which has now reached more than 3 million students and 30,000 teachers in 18 countries; capacity-building courses for senior officials through the Sustainable Development Academy; cross-border cooperation in the areas of environmental planning and investment; advancing sustainable urban transport in an enlarged Europe; capacity building for environmental inspectors; support to local initiatives; assistance in environmental law drafting; sustainable consumption and production; support to cooperation between the environment and health sectors by means of policy integration at international and national level; assistance in water management programmes; helping countries and communities on the path towards a low-carbon transition; and promoting climate change mitigation policies. The REC is also a partner in the Europe-China Clean Energy Centre.

The future

The REC has introduced innovative approaches to sustainable development in countries with diverse histories, cultures and levels of development. The organisation now aims to build on the experience acquired and to remain a solid partner to governments, businesses and civil society in Europe and beyond.

Emisoft AS, Norway

Emisoft's broad environmental competence is represented by the development and implementation of the TEAMS Sustainability Reporting environmental management and information software, and the provision of environmental consulting to a number of Norwegian and international companies and organisations.

Strong competence in environmental science and information technology has always been a core element of Emisoft's business in response to its customers' challenges related to environmental documentation and management. This has given Emisoft a unique market position in the delivery of sustainability competence and systems.

The company was founded in 1992 and has its head office in Bergen, Norway. It provides assistance to customers in the fields of sustainability reporting solutions and environmental management and advisory services.

In 1993, Emisoft released the first version of the TEAMS Sustainability Reporting environmental management and information software, and the system has since become robust and flexible. Today, TEAMS is used by many customers in more than 100 countries.

Ongoing development over the years has resulted in Emisoft being given an award as the world's best environmental management system (PricewaterhouseCoopers, 2001). The company has a substantial list of satisfied customers that have achieved compliance with the rules and regulations set by the authorities, and that have acquired a market position based on responsibility in the field of sustainable development.

Emisoft's clients represent several global industries, which allows for the sharing of environmental management best practices between different industries. This gives Emisoft the opportunity to maintain and continuously develop TEAMS SR as the leading environmental management system.

Emisoft's reporting systems and competence are used across several industries, including the oil and gas, metallurgical, food production, petrochemical, mining, cosmetics, transportation and shipping industries. Working with leading companies in various industrial sectors and countries gives Emisoft a unique opportunity to apply knowledge of best practices from industries that are leaders in different areas of sustainability management and reporting.

Among the prominent companies that have implemented TEAMS software are:

Alcoa — the world's leading producer of primary and fabricated aluminium, and the world's largest miner of bauxite and refiner of alumina.

Borealis — which provides plastic materials for the infrastructure, automotive and advanced packaging markets in 120 countries across Europe, the Middle East and Asia.

BP — provider of fuel for transportation, energy for heat and light, engine lubricants, and petrochemical products used in manufacturing everyday items from paints to clothes and packaging.

Cermaq — an international fish farming and fish feed group with its head office in Oslo, Norway. Cermaq's vision is to be a global leader in the aquaculture industry, with a main focus on the sustainable production of feed to, and the farming of, salmonids.

Conoco Phillips — which explores for, produces, transports and markets crude oil, natural gas, natural gas liquids, liquefied natural gas and bitumen worldwide. Conoco Phillips conducts exploration activities in 19 countries and produces hydrocarbons in 13 countries, with proved reserves located in 15 countries.

Edison — Europe's oldest energy company, founded in 1884, which is currently the second largest energy company in Italy and a European leading operator in the supply, production and sales of electric power and hydrocarbons (natural gas and crude oil).

EMC — which increases the capacities of the Serbian Environmental Protection Agency, industries and other partners and clients through the development of organisational infrastructure and software support using models for emissions monitoring and reporting towards national institutions and the EU.

Hydro — a global supplier of aluminium with activities throughout the value chain, from bauxite extraction to the production of rolled and extruded aluminium products and building systems.

Lerøy Seafood Group — a leading exporter of seafood from Norway and the world's second largest producer of Atlantic salmon. The group's core activities are the distribution, sale and marketing of seafood, the processing of seafood, and the production of salmon, fjord trout and other species.

Loreal — the world's leading beauty group, which has over a century of experience in producing beauty products and services.

Qatalum — an equal joint venture between Qatar Petroleum and Hydro Aluminium of Norway. Qatalum's state-of-the-art cast-house products are value-added extrusion ingots and foundry alloys that meet the stringent quality standards of its global customer base.

Saint-Gobain Isover — which develops products and systems designed for thermal and acoustic insulation as well as fire protection for buildings and installations.

SSAB — a leading producer of high-strength steel, the largest manufacturer of strip products in the Nordics and the leading supplier of steel plate in North America.

Statoil — a long-term and reliable natural gas supplier that enjoys a strong position in some of the world's most attractive markets. The group is the second biggest gas supplier in Europe and the sixth biggest in the world.

Total — which provides its customers with a comprehensive range of products and services, including service stations; fuels and biofuels; gift, fuel or credit cards; lubricants; liquefied petroleum gas (LPG); jet fuel; special fluids; bitumen; base petrochemicals; specialty chemicals; and solar panels.



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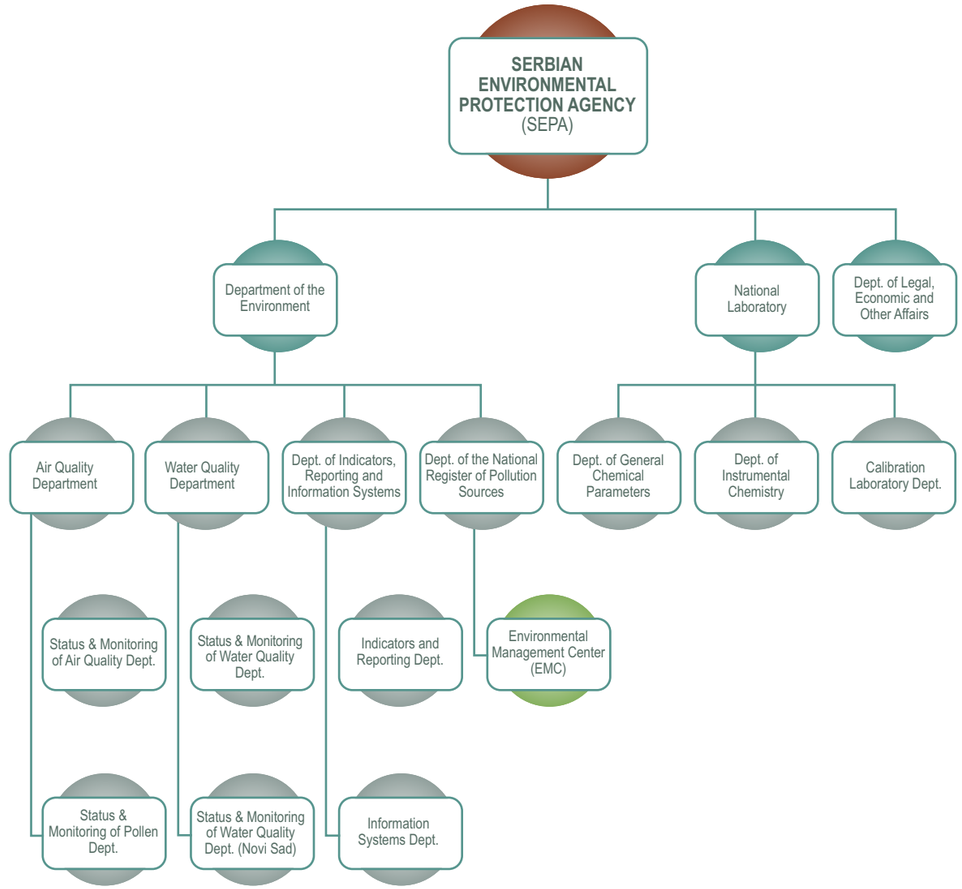
The role of the EMC

During the implementation of the project “Setting up the Environmental Management Center (EMC) in Serbia”, several options were discussed regarding the future status of the body. The decision was made to integrate the EMC within the organisational structure of SEPA, ensuring the sustainable contribution of the EMC to environmental reporting in Serbia.

EMC integration in SEPA

The study on organisational sustainability, developed by the project team and adopted by SEPA, envisages the EMC functioning as an organisational unit of SEPA, within the state of the environment sector and as an integral part of the Department of the National Register of Pollution Sources (see Figure 1).

FIGURE 1 **STRUCTURE OF SEPA, INCLUDING THE EMC**



TEAMS software tools

Competent Authority TEAMS SR Solution

The EMC will use the Competent Authority TEAMS SR Solution (CAS) as its main tool. The CAS is an information system developed on the TEAMS platform in line with the requirements of SEPA and designed according to PRTR rules. Annual reports from all companies that have an obligation to report according to Serbian legislation will be submitted to SEPA through the CAS. The CAS comprises annual facility reports from operators, including pollution release quantities; master data with lists of code to be assigned to the reported quantities; incorporated data logic; administration and data monitoring; the Web Report Designer; a flexible report library; as well as output tables together with the assigned master data. It is a robust solution that meets the current and future needs of SEPA.

Parent Client TEAMS SR Solutions

The EMC will also run 10 parent client solutions (PCSs), which were developed during the project. These PCSs were built, customised, altered, adapted and tailored to the individual needs of 10 selected companies in order to help them meet their environmental priorities. The solutions enable companies to document and report efficiently using a single, integrated system throughout all levels of the organisation. This approach ensures easier, more secure and more efficient use, and allows for the straightforward implementation of changes according to customers' needs.

The EMC will host PCSs for new companies that express an interest in investing in the creation of their own system. With their own PCSs, these companies will have a robust, flexible, state-of-the-art environmental management reporting system that will help them to achieve compliance with EU regulations and to manage their environmental data in a transparent, traceable and consistent way.

EMC staff

It is envisaged that the EMC will have three permanent employees and a number of subcontracted experts. Support will also be provided by an IT administrator from SEPA's Department of Indicators and Reporting and Information Systems Department.

Additional experts will be subcontracted as and when needed. For the further development and customisation of required software solutions, IT experts will be subcontracted as and when needed for the following roles:

- IT (release management and test management)
- Consulting (solution management, senior expertise)

Other experts will also be subcontracted to offer various environmental management consulting services to EMC clients/users of the environmental accounting and reporting system, as and when needed.

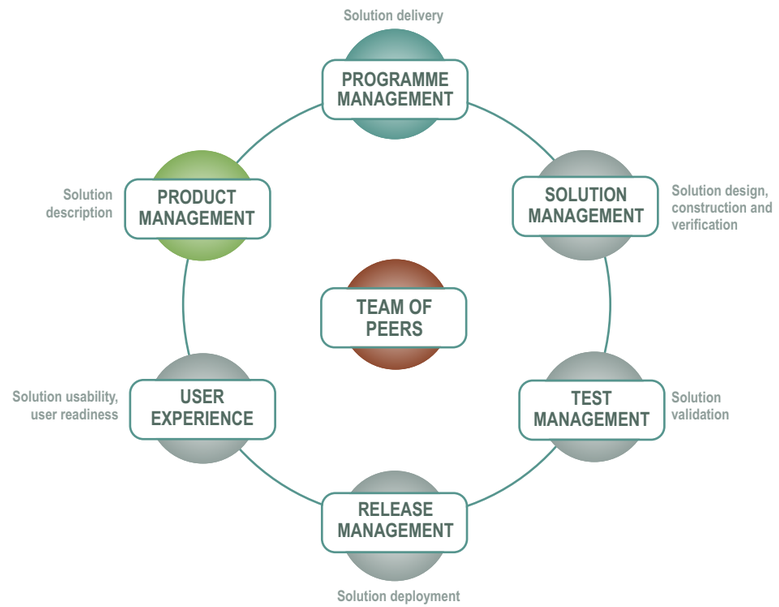
The roles described in brackets correspond to the roles defined within the framework of the EMC project for the implementation of the environmental accounting and reporting system (see Figure 2).

EMC PERSONNEL

Department	National Register of Pollution Sources
Unit	Environmental Management Center
Personnel	• Head of Unit (Programme Manager) • Reporting Expert 1 (User Experience) • Reporting Expert 2 (Product Manager)
Departments	Indicators and Reporting; Information Systems • IT support (Administrator)

Note: The functions given in brackets correspond to the roles defined within the framework of the EMC project

FIGURE 2 **FUNCTIONAL ROLES IN REPORTING SYSTEM**



Partnerships

In order to further upgrade and develop the system, the EMC will use two main types of partnership: (i) public–private partnerships, in line with the current Serbian legal framework; and (ii) contracts with legal and physical entities. These partnerships will make available additional finances for further development and for technical and expert resources.

Sustainability

The integration of the EMC as a part of SEPA represents a sustainable solution for the maintenance of the tools and functionalities developed during the EMC project. The two main tools, the CAS and PCSs, make possible integrated electronic environmental reporting in Serbia and the introduction of the Eco-management and Audit Scheme (EMAS) in interested industrial companies.

SUCCESS STORY

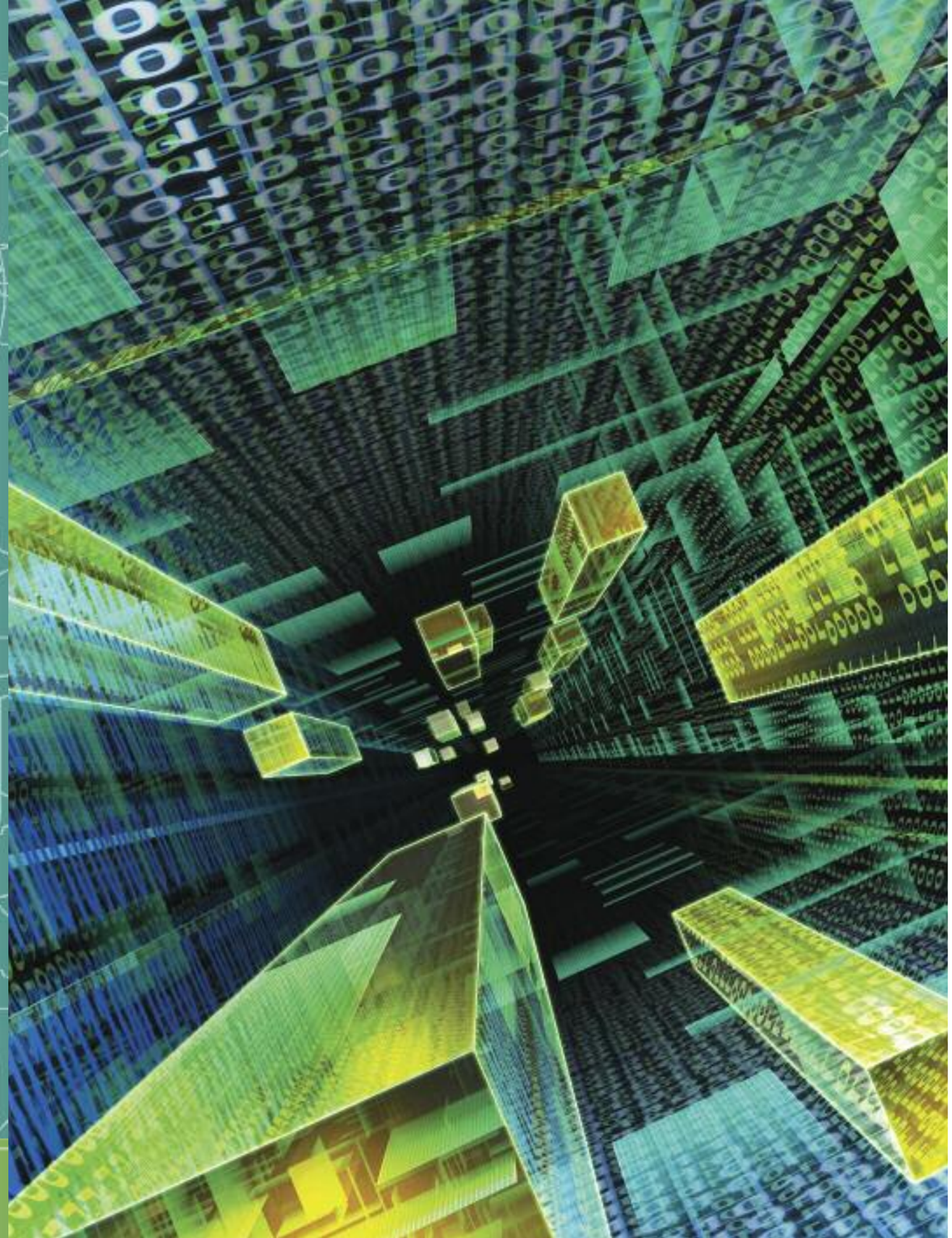
The setting up of the Environmental Management Center within the Serbian Environmental Protection Agency was an innovative and pioneering undertaking in South Eastern Europe. It fosters a holistic approach to servicing client industries with legal reporting obligations towards the state, and to improving the capacities of the national authorities to provide timely, accurate and up-to-date information on the state of the environment in Serbia.

As a successful example of efficient coordination between government institutions, donors (in this case the Royal Norwegian Ministry of Foreign Affairs), implementation agencies (REC, Emisoft) and the business sector (10 EMC client industries), the project is unique in the field of environmental protection. The work was carried out by a team comprising an impressive pool of experts, professionals and dedicated environmentalists.

Having had the privilege of being part of this success, I would like to stress my full commitment to continued support to the future development of the EMC in Serbia and to ongoing REC support towards SEPA through future fundraising efforts. It is also very important to make accessible all the collected information to environmental authorities, international institutions and, above all, members of the public. In line with the provisions of the Aarhus Convention, and respecting legitimate classified business information, the EMC should in future be accessible by citizens and should enhance cooperation between the business sector, civil society and the state (SEPA). I am convinced that the network of client companies will grow steadily, as the system becomes widely recognised as user friendly, easy to apply and beneficial to industries in terms of their increased competitiveness.

Jovan Pavlović, Acting Director of EMC

The integration of the EMC as a part of SEPA is a sustainable solution for the maintenance of the tools developed during the EMC project.



4

Software for sustainability reporting

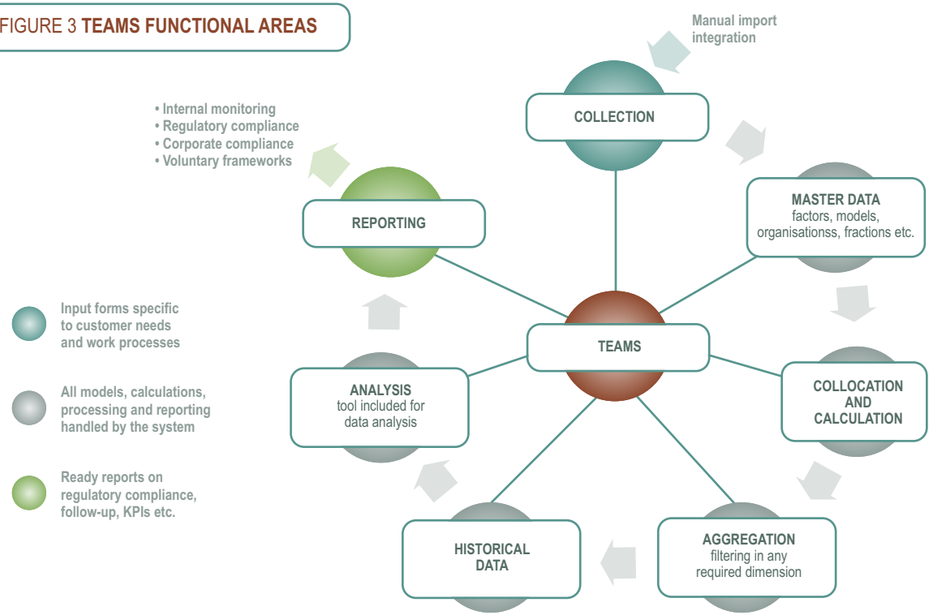
Following a public tender for the procurement, installation and maintenance of environmental accounting and reporting software, the Norwegian company Emisoft was selected to supply two new tools for SEPA and industrial clients in Serbia, based on the TEAMS Sustainability Reporting software:
the Competent Authority Solution; and
Parent Client Solutions.

The TEAMS solution

TEAMS Sustainability Reporting (TEAMS SR) is a flexible and efficient software tool for the collection, consolidation, calculation, quality assurance and reporting of companies' environmental and corporate social responsibility (CSR) data in a single system. The system is appropriate for regulatory monitoring and reporting in relation to single processes, or to the operations of entire factories. The first version of TEAMS was launched nearly 20 years ago, and today the software is being used by leading companies in several countries.

TEAMS is based on modern and mainstream technology, with user friendliness as one of the priorities in its development. End users require virtually no training, as the system has exclusively company-specific parameters and structures. Customised user pages ensure that each individual need only navigate in areas of TEAMS that are relevant to them. Different levels of security are provided for users of the system. Only those with the appropriate level of permission can view information or register and change data. Permission levels can easily be managed by an administrator through a single module that controls what end users can view and what they can work with. To make use of all these possibilities, customers require only a computer with Internet connection and web browser. Operating systems must be based on Microsoft platforms.

FIGURE 3 **TEAMS FUNCTIONAL AREAS**



TEAMS FUNCTIONAL AREAS

Data input/ registration	• Manual registration of data through the user's web client • Integration with other systems • Decentralisation in the organisation according to needs • Master data maintained in the same system through integration • Multiple languages, unit conversions, help text, min/max values, restrictions on overlapping periods etc.
Data collocation and aggregation	• Data combined for any report and time period required • Ready models for data processing
Reporting	• Flexible report generation • Options for aggregation and filtering according to required dimensions • Definition of roles and permissions ensures flexible reporting at all levels of the organisation • Reports viewed in TEAMS can be saved or opened directly as PDF, Excel, Image etc.
Analysis and follow-up	• Monitoring of trends and relations • Monitoring of critical limits, incidents etc. • Analysis of data within any area per reporting unit, area of reporting, source of information, time interval etc.
Historical data/ documentation	• Logging of all transactions (what, where, when, who) • Changing log (for calculations, emissions factors etc.)

In addition to meeting a range of functional and technical requirements (see Figure 3), TEAMS fulfils three key criteria of corporate sustainability reporting:

- Transparency
- Traceability
- Compliance

During the development of TEAMS, emphasis was placed on ease of use without compromising the software's ability to meet complex reporting needs. The user interface (see Figure 4) is web based and does not require installation on the part of end users or user administration. The system can handle all unit conversions and up to seven languages. Users can enter numbers in the unit of their choice and navigate in their preferred language. For the final report, units and language will be automatically converted to the requested format.

The TEAMS software ensures complete traceability, not only of all transactions but also of factors and calculations. All data entries and changes are logged, and all information is recorded, making the system easily accessible for data auditing. Information containing both text and numbers can be reported and handled by the system.

Partners in the supply chain may also be granted access to register data directly in the system on behalf of a customer. TEAMS functionality ensures that registered data must be approved in order to become a valid transaction in the system.

TEAMS user interfaces

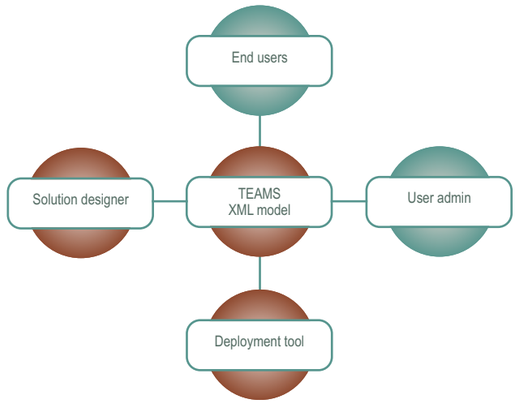
TEAMS contains an XML solution model that defines the customer's configuration. The solution designer provides a robust interface for configuring the complete customer solution. This configuration is stored as a compact and well-defined XML file that will be used when deploying the solution, or changes to an existing solution, to testing and production servers. The separation of model and data ensures flexibility when configuring, and minimises the risk of human error when deploying changes to production servers.

TEAMS contains four user interfaces, all connected to the same XML model.

- Web based:
  - end user
  - user administration
- Windows based:
  - solution designer
  - deployment tool

The end user and user administration interfaces are web based and use Microsoft Silverlight. This allows rich Internet application functionality (RIA) for web applications with a look and feel that is superior to standard web pages.

FIGURE 4 **TEAMS USER INTERFACES**



TEAMS USER INTERFACES

End user (Web)	**Able to:** • register and modify transactional data • view dashboard • drill down • generate reports • audit/track data (log) • manually run imports, exports and queries • register and modify master data (according to assigned permissions)
User administration (Web)	**Responsible for:** • users and roles (assigns permissions) • user tasks • system messages
Solution designer (Windows)	**Used to build and maintain the configuration:** • structure of master data • structure of transactions • forms • calculations • queries • advanced reports

TEAMS operational architecture

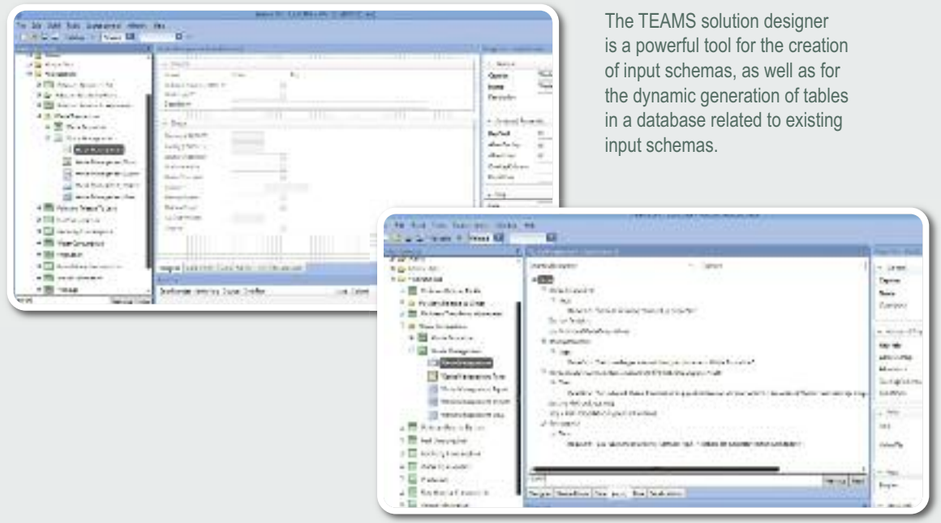
The solution designer and deployment tool are Windows based and use the Windows Presentation Foundation. The solution designer is a user-friendly configuration tool that provides a robust interface for building and maintaining configurations.

The solution designer is also a very powerful development tool designed for the creation of input schemas in a very easy way, as well as for the dynamic generation of tables in a database related to any existing input schema. The solution designer is based on object-oriented programming with integrated C# functions and possibilities.

The system provides well-separated environments for configuration, testing and production (see Figure 7). The solution designer is a stand-alone Windows client, and each client is able to simulate the whole solution for development purposes.

Every element/object in the existing input schema has a set of events that are used for the implementation of states or actions for any of the elements/objects (Figures 5 and 6).

FIGURES 5 AND 6 **CREATION OF AND EVENTS USED IN WASTE MANAGEMENT INPUT SCHEMA**



The TEAMS solution designer is a powerful tool for the creation of input schemas, as well as for the dynamic generation of tables in a database related to existing input schemas.

The versioning of the solution is handled through a source control server. Once a configuration phase is completed, the solution is deployed to a test server. After testing and approval, the configuration, or any change to the configuration, is automatically deployed to the production environment, minimising downtime in production.

Deployment between the configuration, testing and production environments is managed through the solution deployment tool (Figure 7).

Technical development tools

TEAMS was developed using the following technologies:
Visual StudioNET version 4.5, Windows Presentation Foundation 3.5 (WPF), Silverlight 5, Windows Workflow Foundation 3.5 (WF), Windows Communication Foundation 3.5 (WCF), Controls and report builder from DevExpress, Oracle 10g/11g and Microsoft SQL Server 2008.

Hardware and software requirements:

Database server:
Windows Server 2003 or 2008, Microsoft SQL Server 2008 or Oracle version 10g or 11g

Application server:
Windows Server 2003 or 2008, Internet Information Services (IIS) version 6.0, 7.0 or 7.5, Microsoft.NET 3.5 and 4 runtime

Solution designer client environment (configuration):
System: Windows XP, Windows Vista, Windows 7 or Windows 8. Browser: Internet Explorer 7+. Runtime: Microsoft .NET 3.5 and 4

End user client environment (Web):
System: Windows XP, Windows Vista, Windows 7 or Windows 8. Browser: Internet, Explorer 7+ with Silverlight 4+

TEAMS offers flexible reporting tools to meet the requirements of a diverse group of customers. The reporting tool in TEAMS is based on DevExpress XtraReports. This is a professional reporting tool allowing flexibility of reporting across areas and across the organisation, based on all available information in the database.

In TEAMS, information and data from several areas can be combined in one report. This can be a one-page overview containing a range of performance indicators, or spread over several pages with a mix of numbers, text and graphics (see Figures 8 and 9).

Reports are always directly available in TEAMS and ready for viewing or printing. In addition, all reports can be instantly exported or saved in various formats, including PDF, Excel, Image etc. This means that reports can easily be incorporated in e-mail messages as attachments, reports or presentations (Figures 10 and 11).

FIGURE 7 **OPERATIONAL ARCHITECTURE AND PHASES IN TEAMS IMPLEMENTATION**

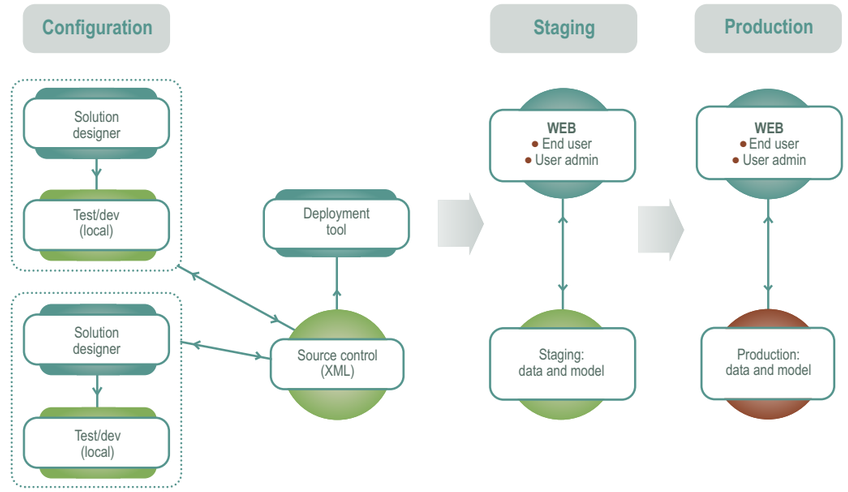


FIGURE 8 **GRAPHICS AVAILABLE IN TEAMS**

With this flexible system, a perfect solution for corporate sustainability reporting, companies have a powerful tool for strategy development and decision making. TEAMS provides a user-friendly solution for environmental management.



FIGURE 9 **EXAMPLE OF TEAMS REPORT PRESENTED AS A MIX OF NUMBERS, TEXT AND GRAPHICS**

With TEAMS, more time is available for environmental management and less time is spent on collecting and organising data. Traceable and transparent solutions for documentation ensure that companies produce accurate reports.



Benefits of TEAMS

The overall corporate objective of implementing TEAMS in an organisation is to achieve the compliance, traceability and transparency of sustainability reporting. The benefits include:

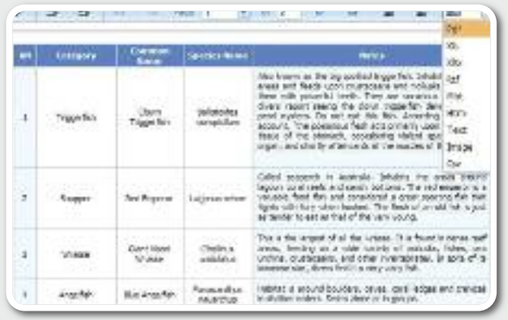
- A complete solution — All areas of reporting are included in one system, as defined by the customer.
- Rapid development — A flexible solution, it enables the implementation of changes and new areas of reporting.

FIGURE 10 **EXAMPLE OF A TEAMS REPORT**



TEAMS SR can be adapted to the specific needs of a company's business and organisational structure. Different kinds of reports are available, and users are able to filter according to specific criteria so as to select the required amount of information.

FIGURE 11 **EXAMPLE OF A TEAMS REPORT**



When competing with others for access to resources, a good track record is essential. Transparent documentation ensures added value for companies and inspires greater trust on the part of investors.

- Known costs — The cost model provides a good basis for decision making and predictability for the future.
- Resource efficiency — Routines, information and reporting are coordinated in one system.
- Customised user interfaces — The system is easy to use and minimal training is required.
- Flexibility — Reporting is based on available information and changes can be implemented when needed.

Competent Authority TEAMS SR Solution

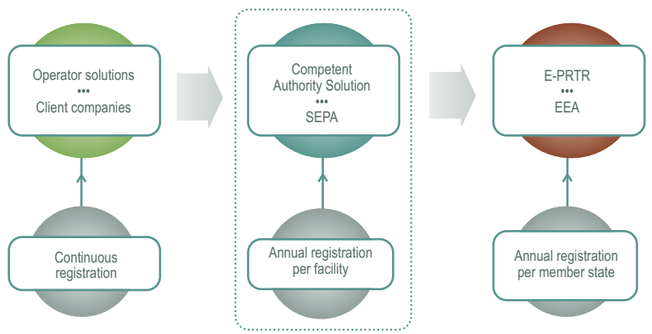
The Competent Authority Solution (CAS) provides Serbia with a state-of-the-art environmental management system ensuring compliance, transparency and traceability with regard to the country's reporting to the EU. With the building of the CAS, which receives data from reporting companies, Serbia may become one of the global frontrunners in environmental reporting.

The CAS is an information system designed according to the rules on pollutant release and transfer registers (PRTR). It has been built in order to receive the annual PRTR reports from companies that have an obligation to report according to Serbian legislation. The CAS links data from companies to SEPA and relevant EU institutions. Some of the reporting companies have their own solutions, but the CAS enables SEPA to register the annual data (manually or by import) and to report historical data in the same structure for companies that do not have their own client solutions (Figure 12).

The CAS comprises annual facility reports from operators, including pollution release quantities; master data with lists of code to be assigned to the reported quantities; incorporated data logic; administration and data monitoring; the Web Report Designer; a flexible report library; as well as output tables together with the assigned master data.

A robust solution that meets the current and future needs of SEPA, the CAS is able to import annual reports based on the European Pollution Release and Transfer Register (E-PRTR) framework from individual client companies. As the CAS has been built in compliance with the E-PRTR, this allows the aggregation and processing of relevant information, and enables reporting to the EU according to the specifications given in the E-PRTR framework.

FIGURE 12 **INFORMATION FLOW IN THE COMPETENT AUTHORITY SOLUTION**



THE MAIN ELEMENTS OF THE CAS

Input	• Annual facility reports from operators, with pollution and release quantities. The input schemas can be based on the Excel specifications already prepared by SEPA.
Master data	• Code lists and other properties assigned to registered quantities. The master data library is in compliance with, and always updated according to, the E-PRTR. It contains all the data necessary for the National Register of Pollution Sources.
Data logic	• The automatic handling of data within the system, which is incorporated into the solution. It ensures consistency and compliance with predefined procedures and E-PRTR.
Administration	• Data management • User management • Access management
Monitoring/follow-up	• One-click status reports and quality control follow-ups; ad-hoc reporting.
Output	• Provision of the aggregated and quality-controlled data required for reporting to the National Register of Pollution Sources and the EU.
Reports	• Reports library

Benefits of the CAS:

- Improved regulatory compliance with EU and domestic standards
- Operational streamlining
- Time and cost savings for SEPA
- Registrations and changes are logged and coupled to a user, leading to transparency and traceability
- Uniform code lists and master data tables, ensuring consistent reporting, limiting errors and improving data quality
- Efficient monitoring and follow-up on reporting client companies
- The robust solution meets the current and future needs of SEPA, enabling SEPA to register (manually or by import) and report historical data in the same structure

> The CAS provides SEPA with a state-of-the-art environmental management system, ensuring compliance, transparency and traceability with regard to reporting to the EU. This is a robust solution that meets the current and future needs of SEPA.

FUNCTIONALITIES PER ROLE IN THE CAS

Master data	Administrator (SEPA)	Configurator (EMC)
Enters CAS using assigned username and password	Administers the user library (adds, edits, deletes profiles)	Builds input schemas (adds, edits, deletes)
Adds, edits or deletes reported data	Assigns a role to a user	Builds data logic (adds, edits, deletes)
Views history of their data	Administers the role library (adds, edits, duplicates or deletes roles)	Builds output tables (adds, edits, deletes)
Builds favourite list of menu items	Assigns access to menu items to the role	Builds report library (adds, edits, deletes)
Views yellow tips and help text configured into the solution	Assigns access to menu items to the role	Adds yellow tips and help text to fields and schemas
Reads system messages	Assigns tasks to users	Sets optional and mandatory fields
Sees tasks assigned to their user profile	Modifies master data (adds, edits, deletes, imports, exports)	Sets min. and max. values to fields
Runs reports based on chosen criteria	Runs reports based on chosen criteria	Edits unit system
Imports data	Views monitoring reports	Integrates solutions with other information systems

Parent Client TEAMS SR Solutions

In addition to improving environmental reporting for Serbian companies, Parent Client Solutions (PCSs) have been built, customised, altered, adapted and tailored to each company's needs. These PCSs help companies to meet their environmental priorities by allowing them to document and report efficiently using a single, integrated system throughout all levels of the organisation. The system is defined and configured according to the customers' organisational and specific needs, ensuring easier, more secure and more efficient use, and allowing the straightforward implementation of changes according to customers' needs.

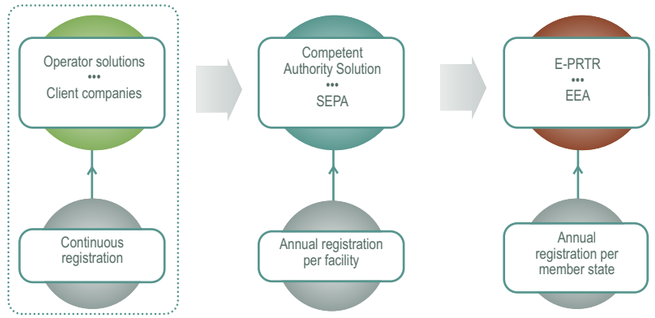
By providing companies with a robust, flexible, state-of-the-art environmental reporting system, PCSs help them to achieve compliance with EU regulations and to manage their environmental data in a transparent, traceable and consistent way (Figure 13).

Together with the company's customised data logic, organisational structure, and data and administration elements, all functionalities have been incorporated into the system design along with transactions, a report library and output tables with master data and code lists assigned.

The PCS information system is designed according to the PRTR Protocol and domestic legislation, and it is defined and configured according to customers' organisational and specific needs. In PCSs, reports are defined according to specific needs and parameters across the organisation. They might typically be internal compliance reports, reports on key environmental indicators, or management or corporate reports. Flexibility in data structure and relations makes it possible to benchmark between facilities and units across the organisation.

Figure 13 shows the PCS in individual TEAMS implementation for a specific company. In addition to continuous reporting on the company, environmental management and compliance monitoring, PCSs enable annual reporting to the competent authority (SEPA) in accordance with the E-PRTR framework, as well as with Serbian legislation.

FIGURE 13 **INFORMATION FLOW IN THE PARENT CLIENT SOLUTION**



THE MAIN ELEMENTS OF THE PCS

Input	• Pollution to air, water and land • Annual information • Wastewater transfer, waste formation and waste management • Production volumes, consumption of fuel, water, electricity and raw materials
Master data	• Code lists and other properties assigned to registered quantities. The master data library is in compliance with, and always updated according to, the E-PRTR. It contains all the data necessary for the National Register of Pollution Sources.
Data logic	• The automatic handling of data within the system, which is incorporated into the solution. It ensures consistency and compliance with predefined procedures and E-PRTR.
Administration	• Data management • User management • Access management
Monitoring/follow-up	• One-click status reports and quality control follow-ups; ad-hoc reporting.
Output	• Provision of the aggregated and quality-controlled data required for reporting to the National Register of Pollution Sources and the EU.
Reports	• Reports library

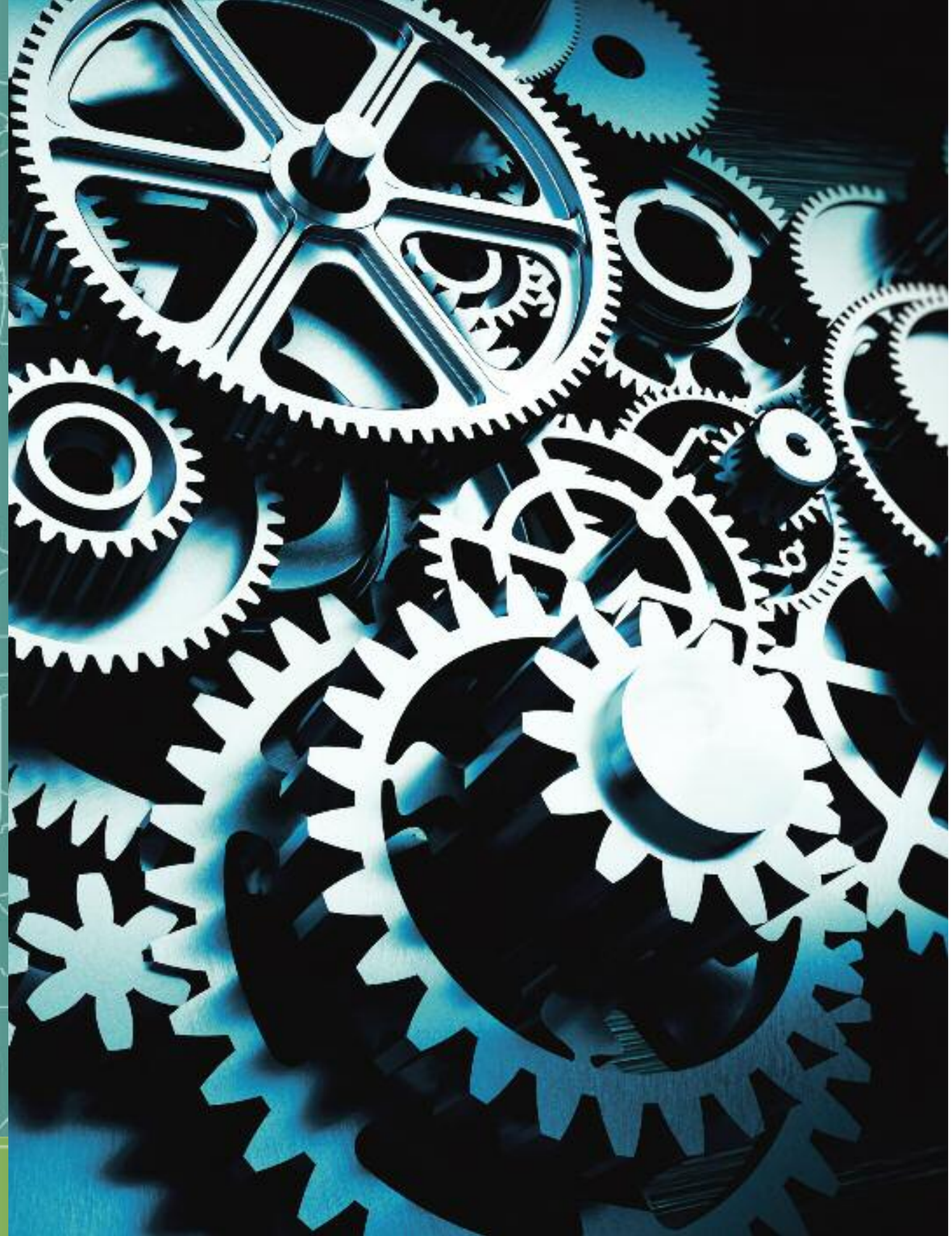
Benefits of the PCS:

- Possibility to collect environmental data in one place
- Time saving for annual reporting to SEPA (ready reports)
- Key performance indicator (KPI) and quality control reports
- Improved regulatory compliance with EU standards
- Cost savings
- Transparency, traceability (all registrations and changes logged and coupled to users)
- Uniform code lists and master data tables, ensuring consistent reporting, limiting report errors and raising data quality
- Threshold value comparisons
- Reduced time and complexity of compliance monitoring and follow-up
- Flexibility, allowing adaptation to the future needs of each individual client company

FUNCTIONALITIES PER ROLE IN THE PCS

End user (Client)	Administrator (Client)	Configurator (EMC)
Enters the solution using the assigned username and password	Administers the user library (adds, edits, deletes profiles)	Builds input schemas (adds, edits, deletes)
Adds, edits or deletes their reported data	Assigns a role to a user	Builds data logic (adds, edits, deletes)
Views history of their data	Administers the role library (adds, edits, duplicates or deletes roles)	Builds output tables (adds, edits, deletes)
Builds their favourite list of menu items	Assigns access to menu items to the role	Adds yellow tips and help text to fields and schemas
Views yellow tips and help text configured into the solution	Sends system messages to roles or users	Adds yellow tips and help text to fields and schemas
Reads system messages	Assigns tasks to users	Sets optional and mandatory fields
Sees tasks assigned to their user profile	Modifies master data (adds, edits, deletes, imports, exports)	Sets min. and max. values to fields
Runs reports based on chosen criteria	Runs reports based on chosen criteria	Edits unit system
Imports data	Views monitoring reports	Integrates solutions with other information systems

With PCSs, companies can document and report efficiently by using a single integrated system throughout all levels of the organisation. A PCS is defined and configured according to the customers' organisational and specific needs.



5

EMC industrial clients

In order to improve environmental reporting by Serbian companies, significant efforts were invested in the development of 10 unique Parent Client TEAMS SR Solutions (PCSs). These PCSs have been built, customised, altered, adapted and tailored to each company's needs and will continue to help them to meet their environmental priorities.

FEEDBACK FROM CLIENT-PARTNERS

Ample opportunities were provided during the project period for partner industries to share and discuss how their reporting obligations and environmental management were supported during project implementation.

At the **fourth EMC conference**, held in Belgrade in April 2013, companies that had introduced the TEAMS Sustainability Reporting solutions in the framework of the EMC project described the benefits of the software and their plans for its continued use.

The **fifth EMC conference**, held in Montenegro on May 7–10, 2013, back to back with the EMC international science conference "Reporting for Sustainability", provided a unique regional platform for networking, interaction and exchange among the environmental mangement community in Serbia and South Eastern Europe.

During the **sixth EMC conference**, which took place in Belgrade on May 27, 2013, discussions focused on electronic reporting in Serbia, and EMC client-partners gave feedback on their reporting using the TEAMS software.

COMMENTS FROM THE FOURTH CONFERENCE

Železara Smederevo Ltd.

TEAMS strengths:

- Fast data entry
- Automatic calculation of released pollutant quantities and other parameters
- Simple presentation of forms
- Easier identification and correction of possible mistakes
- Permanent database for different reporting years in one location
- Possibility for multiple users to simultaneously enter data to the application
- Developed and implemented under close, direct cooperation with the industry

Sojaprotein

Advantages of TEAMS for environmental management and reporting:

- Data integration across the organisation
- Availability of data
- Traceability
- Time saving
- Internal and external reporting
- Improvement of environmental management system

Kolubara Ltd.

Further use of TEAMS in the internal plans of Kolubara Ltd.:

- Coupling of TEAMS with GIS environment in Kolubara Mining Basin
- Data entry for noise monitoring
- Monitoring of the management of agricultural and forest land in reclaimed areas
- TEAMS as an integral part of the Environmental Monitoring Plan of Kolubara Ltd.

Client-partner profiles

By implementing PCSs, companies can document and report efficiently using a single, integrated system throughout all levels of the organisation. Through the EMC project, a number of trainings were provided, aimed at strengthening environmental management practices and reporting. The PCSs offer companies a robust, flexible, state-of-the-art environmental management reporting system that supports the management of environmental data in a transparent, traceable and consistent way, thus helping companies to achieve compliance with national and EU regulations.

The EMC project team worked directly with 10 industrial client-partners from various industrial sectors across Serbia: HIP-Petrohemija (producer of petrochemical products, raw materials and chemicals); Delta Agrar Ltd. (agricultural sector); Železnice Srbije JSC (Serbian Railways); Tigar JSC (manufacturer of rubber footwear, technical rubber and recycled rubber products); Kolubara Ltd. (coal production, processing and transportation); Agroprodukt Šinković Ltd. (poultry production and trade); Sojaprotein (joint stock company for soybean processing); Železara Smederevo Ltd. (a steel production and processing company); RTB Bor Ltd. (copper mining and smelting complex); and Beogradske Elektrane (public utility company providing district heating).

The following pages contain profiles of the 10 participating companies, outlining their activities and environmental impacts, and summarising how their reporting obligations are supported by the TEAMS software.

TEAMS IN ACTION








HIP-PETROHEMIJA JSC, PANČEVO
Petrochemical products, raw materials and chemicals

HIP-Petrohemija is the largest producer of petrochemicals in the Republic of Serbia, with a tradition that covers almost three decades. The company's manufacturing facilities occupy the industrial zone of Pančevo, Elemir, which lies near Zrenjanin and Crepaja.



Activities

HIP-Petrohemija produces nearly 700,000 tonnes of petrochemicals. In addition to HIPLEX®, HIPTEN® and HIPREN® polymers and PE pipes, products include:

- ethylene
- propylene
- pyrolysis gasoline
- pyrolysis oil
- C4-fraction
- chloralkali electrolysis products
- 1.3-butadiene
- methyl tertiary butyl ether

Environment

HIP-Petrohemija is committed to supporting sustainable development through systematic environmental management. Activities undertaken to control environmental impacts include:

- air emissions monitoring
- wastewater and groundwater quality control
- waste management
- chemical management

Reporting

The company reports to SEPA with regard to:

- general information about pollution sources
- emissions to air
- emissions to water
- waste management, specific waste streams and the management of packaging and packaging waste

Through the EMC project, the company uses TEAMS software for reporting.

DELTA AGRAR LTD., BELGRADE
Subsidiary of Delta Holding, Serbia

As a member of Delta Holding, Delta Agrar Ltd. has been present in the agribusiness community since 1993 and remains a leader in all aspects of agricultural operations.



Activities

Primary production:

- field crop production on 16,000 ha
- fish production on 600 ha
- 100,000 pigs per year on five farms

Cooperation sector and buy-up:

- fruits and vegetables
- meat and cattle

Agro-trade and distribution:

- pesticides, seeds, agro-mechanisation

Food production:

- Yuhor, Mioni, Danubius, Florida bel

Environment

Delta Agrar's "Environment and Ecology" sector is concerned with all aspects of environmental management, including:

- energy efficiency and conservation
- alternative energy sources
- GHG emissions reductions
- waste management
- the collection, storage and treatment of hazardous and non-hazardous waste
- education for employees

Reporting

Delta Agrar reports via SEPA to the National Register of Pollution Sources, as well as to the local government. The company also undertakes internal reporting using the TEAMS software.

ŽELEZNICE SRBIJE JSC, BELGRADE
Passenger and freight transport

The main activity of Železnice Srbije (Serbian Railways) JSC is the transportation of passengers and freight.



Activities

The company is responsible for:

- organising and controlling rail transportation (passengers and freight)
- maintaining rolling stock and railway infrastructure
- modernising and protecting rolling stock and railway infrastructure
- monitoring the construction and reconstruction of railway infrastructure
- assembling devices, plants and installations

Environment

As one of the most efficient and environmentally friendly ways to move people and goods, railways have tremendous potential to reduce the environmental impact of transportation and improve quality of life. Acting on this potential, Serbian Railways founded its Center for Sustainable Development on September 1, 2010, to promote rail transportation as an energy-efficient and environmentally friendly option.

Reporting

As a waste generator, Serbian Railways is obliged to maintain records and send annual reports to SEPA. After joining the EMC project, Serbian Railways began to use the powerful TEAMS software. The company now possesses a platform for submitting information to relevant national and international organisations, including SEPA and the European Bank for Reconstruction and Development.

TIGAR JSC, PIROT
Manufacturer of rubber footwear, technical rubber and recycled rubber products

Established in 1935, Tigar is a holding company with diversified lines of business. Environmental management according to ISO 14001 criteria was certified a decade ago, and continual improvements are being made to ensure sustainable development.



Activities

The company's core business is the production of:

- rubber footwear
- technical rubber products
- products made from recycled rubber

Non-core businesses include:

- the production of coatings and adhesives
- trade
- civil engineering design and construction
- waste management

Environment

The company's environmental performance is based on:

- controlling electric power, heat and water consumption
- controlling emissions into air and discharges
- waste and packaging waste management
- chemicals management
- achieving established environmental objectives and undertaking programmes for improvement

Reporting

In addition to providing regular annual reports to investors, customers and other stakeholders, following the establishment of the National Register of Pollution Sources in Serbia, Tigar has also reported to SEPA since 2007. Annual reporting is now supported by the TEAMS solution.

KOLUBARA LTD., LAZAREVAC
Coal production, processing and transport

Kolubara is Serbia's biggest producer of lignite, its main activities being open-pit coal excavation and lignite processing.



Activities

Pit mining began in 1896, and the first open-pit mine began operations in 1952. The four open-pit mines currently active cover nearly 80 square metres. With 10,000 employees, Kolubara produces an average of 30 million tonnes of lignite per year and provides 52 percent of Serbia's total annual electricity production. Other lignite processing activities include washing, drying and crushing. The company operates a 120 MW heating plant and IPPC facility and has its own integrated management system.

Environment

Notable achievements:

- establishment of the company's Department of Environmental Protection in 2010
- re-cultivation of more than 800 ha of devastated land
- systematisation of waste management
- installation of sanitary and industrial wastewater treatment facilities and ultrasound flow meters for mining wastewaters
- installation of two automatic weather stations with PM10 analysers
- installation of environmental noise measurement equipment
- documentation of potential for solar energy and biomass production

Reporting

In accordance with Serbian legislation, annual reports submitted to SEPA contain data for regularly monitored emissions to all environmental media, along with information on waste management. Since 2013, this reporting, along with internal reports, is managed through TEAMS software.

AGROPRODUKT ŠINKOVIĆ LTD., BEČEJ
Poultry services, production and trade

Agroprodukt Šinković was established in 1999. Its main line of business is poultry breeding and trading, and it also deals with the industrial cultivation of plants.



Activities

The company's main activities are:

- agricultural production
- production of fodder plants and fodder manufacturing
- production and incubation of fertile eggs
- selling day-old chicks
- poultry pre-breeding and cramming

Environment

The company's waste products include waste paper and poultry manure. In the interests of environmental protection, the company recycles waste paper via a contracted waste disposal company. It has recently started to compost poultry manure, with the help of a Hungarian company.

Reporting

Agroprodukt Šinković's environmental reporting obligations are defined under Serbian law. As an EMC client-partner, the company now uses TEAMS software for reporting.

SOJAPROTEIN JSC, BEČEJ
Joint stock company for soybean processing

Sojaprotein was established in 1977 and started production in 1983. Since 2004, the company has operated as part of a complete production system within the domestic company Victoria Group.



Activities

Sojaprotein produces a variety of safe and healthy products from non-genetically modified soybeans. The company aims to achieve a significant position on the EU, Russian, Central European Free Trade Agreement, European Free Trade Association, Turkish, Middle Eastern and North African markets, producing soybean foods for human and animal consumption.

Environment

Deeply committed to protecting the environment for future generations, Sojaprotein:

- monitors all environmental aspects of production
- takes measures to reduce environmental pollution
- implements internal environmental regulations
- educates and motivates employees to take preventive actions
- conserves resources
- has reduced the use of harmful materials and hazardous wastes
- strives for continual improvement

Reporting

For many years Sojaprotein has followed national procedures when reporting to SEPA and now uses TEAMS software to fulfil its legal reporting obligations. The company endeavours to reduce its environmental impact through:

- periodic controls of air and wastewater emissions
- a waste management system
- an environmental management system that is continually undergoing improvement

ŽELEZARA SMEDEREVO LTD., SMEDEREVO
Steel production and processing company

Železara Smederevo is a well-known Serbian producer of steel, hot and cold rolled products and tin plate. Its facilities are located in the village of Radinac, near the town of Smederevo, and in the towns of Šabac and Kučevo.



Activities

Železara Smederevo is involved in the production and processing of steel. Its two blast furnaces produce liquid iron, which is then converted into raw steel. Železara's facility in Šabac produces tin-coated steel products for use in the packaging industry.

Environment

Environmental stewardship is a core value at Železara Smederevo. The company complies with all environment-related laws, policies, practices, procedures and initiatives. It works continuously to improve its environmental and resource management by:

- reducing emissions
- conserving energy
- reusing or recycling the by-products of its production process

Reporting

Železara Smederevo undertakes regular reporting and delivers reports to competent authorities as required. In 2012, the company used both the RIZ and TEAMS applications for reporting. Its facilities in Smederevo and Šabac report to the National Register of Pollution Sources, and the Kučevo facility reports to the Local Register of Pollution Sources.

RTB BOR LTD., BOR
Copper mining and smelting complex

RTB Bor operates as a single system with a parent company and main production subsidiaries (Copper Mines Bor, Copper Mines Majdanpek). The TIR Copper Smelter and Refinery complex comprises a smelter, tankhouse, sulphuric acid plant, foundry, power plant, metal salts plant, copper wire plant and transportation.



Activities

In addition to its main product, copper cathode, TIR produces:

- precious metals
- precious metal salts
- sulphuric acid
- copper powder
- copper sulphate
- copper, bronze and brass-based casts
- sectioned and dip-forming wire
- sintered metals
- heat energy

Environment

An ongoing project to reconstruct the smelter and construct a sulphuric acid plant is aimed at achieving:

- ambient air quality legal limit values (125 μg/m^3)
- the complete recirculation of technological water
- the safe management of waste
- better process energy efficiency through improved rational resource utilisation

Reporting

The company has started to use TEAMS software for reporting to the National Register of Pollution Sources within SEPA on the smelter, foundry, sulphuric acid plant and power plant. An air quality monitoring system is in operation at fixed points in the city that are particularly vulnerable.

BEOGRADSKE ELEKTRANE PUC, BELGRADE
District heating system

Beogradske Elektrane is a district heating system with a total nominal production capacity of 2,832 MWth. The system uses unique means and technology to generate, transmit and deliver thermal energy.



Activities

The Beogradske Elektrane hot-water system comprises a network of pipes and regulating devices that connects the production source with end users. As the operator of 15 heating plants, Beogradske Elektrane is one of Europe's largest producers and distributors of thermal energy.

Environment

Environmental protection is a business policy priority in heating plant management. Reducing emissions of combustion products, primarily pollutants (sulphur dioxide, nitrogen oxides, particulate matter, soot and sedimentary materials) improves air quality, not only in the vicinity of heat sources (e.g. the heating plants) but also in Belgrade and beyond.

Reporting

At its Centre for Testing, Quality and Environmental Protection, Beogradske Elektrane regularly monitors wastewater, emissions of combustion products, soil and groundwater quality, waste management and noise in the environment. Monitoring results are regularly submitted to relevant competent authorities. The company started using the TEAMS system for report preparation in 2013.



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The EMC team

Between September 2010 and May 2013, the EMC team, based in the project office in Belgrade, managed the implementation of the project and communicated with all the project partners. The committed team of experts, professionals and environmentalists provided continuous support to SEPA and industrial client-partners, organised conferences and training events, produced publications, and supported the sustainable organisational structure of the EMC.

SERBIAN ENVIRONMENTAL PROTECTION AGENCY



Filip Radović
Director
(February 2013 to project closure)

Momčilo Živković
Director
(Project launch to February 2013)





Dijana Čvoro
Advisor

Ljiljana Đorđević
Independent advisor



Lidija Mihailović
Associate





Nada Misajlovski
Associate

Nikola Pajčin
IT advisor





Nebojša Redžić
Head of Department

REGIONAL ENVIRONMENTAL CENTER



Radoje Laušević
Project director

Jovan Pavlović
EMC acting director





Ana Popović
Project manager

Vesna Žikić
Deputy project manager
(February 2012 to project closure)





Jelena Tripković
EMC project officer

Damir Oravec
Solutions manager



Petar Radovanović
TEAMS configurator
(contracted expert)





Radomir Radojičić,
Test manager
(contracted expert)

Hristina Stevanović-Čarapina
Environmental expert
(contracted expert)





Vladimir Pavićević
Environmental expert
(contracted expert)



Aleksandar Jovović
Environmental expert
(contracted expert)

Dušan Todorović
Environmental expert
(contracted expert)





Predrag Jovanović
Reporting specialist
(contracted expert)

EMISOFT AS



Rune Neteland
Project director
(project launch to June 2011)

Siren Berge
Project director
(June 2011 to project closure)





Tor Aamodt
Director of sales and HSE management consultant

Branko Dunjić
TEAMS programme manager
(contracted expert)



Beata Ferenc
Project manager
(Project launch to September 2011)





Birgitte Hodneland
Environmental consultant

Svein Kåre Giskegjerde
Sales manager





Biljana Kotanjac
Representative



Admir Mešić
Consultancy manager

Even Nybakke
Solution architect





Jon Elvind T. Strømme
Project manager
(September 2011 to project closure)

Bojana Vukadinović
TEAMS product manager
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