ENERGETSKI PORTAL SRBIJE

ENERGY PORTAL

business web portal about pure energy

ENERGY MAGAZINE

1st March 2016./No.3

RESPONSIBLE COMPANIES ENVIRONMENTAL PROTECTION

The key objective of the Ministry is to create stimulating environment

Investments in environmental projects, especially in clean, environmentally friendly technologies represent priorities that have been identified in the Republic of Serbia's strategic documents, such as National Environmental Approximation Strategy and National Strategy for Sustainable Use of Natural Goods and Resources. Creating stimulating environment for the realization of these projects, regardless of whether they are foreign or domestic investments, is one of the key goals of the Ministry. In order to improve the conditions for wind farms as clean energy resources, the Ministry has prepared the Guidelines on Environmental Impact assessment for wind farms and publication 'Nature Protection and Wind Farm Development in Serbia' in cooperation with UNDP.

МИНИСТАРСТВО ПОЉОПРИВРЕДЕ
И ЗАШТИТЕ ЖИВОТНЕ СРЕДИНЕ

Detailed guidelines for the implementation of renewable energy sources' projects are developed in cooperation with other Ministries, GIZ and UNDP and the entire legislation in the field of environment, which are necessary for the implementation of these projects, are incorporated in them. Foreign and domestic investors have the right on the exemption from custom duties on the equipment and technology which contributes to the environmental protection, based on opinion of the Ministry and according to the Customs Act. Through daily communication with potential investors, the Ministry provides detailed explanations of all law procedures in the field of environmental protection in order to reduce or remove administrative barriers and to speed up the investments in environmental projects and also to ease the way to the investors for the construction of these facilities. The Ministry also provides strong support for foreign investors and factories which are to open in Serbia when it comes to programs and activities for the environmental protection. Planning and construction of new plants and realization of investments on the territory of Serbia, obtaining of the location, construction and use permits all subject to regulations in the field of environmental protection, which means that on the territory of Serbia it is not possible to actualize new investments which pollute the environment with their operation. Investors undertake to carry out activities on the environmental protection during the construction of the facility, during normal operation, in case of an accident and also during and after closing of the facility. They commit to all of this through the permits which they obtain from the competent authorities for the environmental protection.

The field of the environmental protection represents one third of the EU acquis, so the process of adjusting national legislation with the EU legislation is very complex, as well as its implementation, time consuming and very expensive process.

Mutual cooperation of the state, economy and citizens, regarding on the issues related to negotiations over transitional period of law application, effective law enforcement, establishing effective economic instruments, ecological modernization of companies, informing and raising public awareness, is necessary for successful adjusting the legislations.

There are no restrictions when it comes to air and water pollution in the EU legislations. The water sector is covered with a large number of EU regulations. Certain EU regulations which limit the emissions of pollutants in water are transferred into national regulations. In addition to the regulations related to the air quality, there are also regulations which limit emissions of air pollutants that come from stationary plants, as well as regulations related to the air pollution from mobile pollutant sources that are related to the fuel quality and discharge of waste gases from vehicles. All these regulations are partially or at greater extent transferred into national legislation. Each regulation that is EU directive stipulates punitive provisions which apply to EU Member State if it does not abide the provisions of the regulation.

Authors of the text:
Expert services of the Ministry of Agriculture and Environmental protection of the Republic of Serbia

The world's first floating wind turbine is in Norway

Norway is one of the most developed countries in the world when it comes to renewable energy sources, the use of oil resources and the profits that the state has of these resources. Serbia and Norway cooperate very actively last 15 years. A large part of the aid is realized through a close and direct cooperation between Norwegian and Serbian governments. There are several great investors such as Telenor that take care of protection of environment and social problems through foundations. Some of those companies act through programmes and innovations. Important priorities in this cooperation are energy and environmental issues, reform of security, justice and domestic sector etc. During holidays we spent few hours with ambassador of Norway in Serbia, Mr Arne Sanes Bjornstad and ask him what he thinks about Serbia and our possibilities for better using of renewable sources of energy, and responsibility of companies which operate in Serbia and have influence on environmental issues. Here is what he said for ENERGETSKI PORTAL SRBIJE.

Arne Sanes Bjonstard

EP: Could you please for our readers explain in what way Norway takes care of nature, renewable sources of energy and how much that is important for clean industry?

Mr Bjornstad: Climate change is widely seen as mankind's most pressing challenge. Never before have people had such an influence on climate change as the do today. Norway has taken this issue seriously. In 2001., the Norwegian government established Enova agency in a bid to promote more efficient energy consumption and increased production of "new" renewable energy.

The Agency works closely with public and private enterprises in order to reduce energy consumption and increase power generation from renewable sources. Climate change and the environment are the main focus areas of Norwegian development policy, the ministry or climate change and the environment is therefore administrating a part of the Norwegian budget for international development and is doing this through the Norwegian Agency for development Cooperation (NORAD).

As the result of thse and other moves of the Norwegian government, Norway produces about 56 per cent of its energy requirements, including energy for transport, from renewable energy sources. The world's first floating wind turbine has been in operation ten kilometers off the Norwegian coast since 2009. However hydroelectric power dominates the power market. Norway has world's highest per capita hydropower production and is ranked as number one in Europe and sixth largest hydropower producer in the world.

The goal set for to 2020. is to reduce emissions of greenhouses gases by 30 per cent and to increase the renewable share of total energy consumption to 67.5 per cent (the highest share in Europe)

EP: What do you think about Serbian sources of renewable energy: water, sun, wind ...Coul Serbia use it in better way? Can you compare Norway and Serbia in this sense, and what would be your advice for our business society and decision makers?

Mr. Bjonstard: Serbia is a country rich with renewable energy sources ranging from biomass to hydro, solar and wind. However, in spite of this high potential, the renewable energy sector in Serbia has yet to be developed. One of the first big steps towards developing the renewable energy sector in Serbia was whenthe Serbian government adopted in 2011 a new energy law, wich included renewable energy as a complementary part. According to SIEPA, there are a number of projects underway in the field of renewable energy in Serbia. It is estimated that over the next five to seven years, Serbia has potential to attract at least two billion euro in renewable energy facilities investment. In addition to this, we should not forget that energy and environmental protection is very important for Serbia's EU integration, as these areas together with agriculture, make over a half of total EU standards that Serbia is due to harmonise during negotiation process, It is important that Serbia continues with harmonization process and that public authorities take into account the environmental protection when deciding on the development projects.

Furthermore, it is important that authorities spread knowledge of today's many potentials to adopt efficient, environmentally friendly energy solutions and motivate smarter behavior.

EP: There are some educational activities that Norway Embassy in Belgrade about biomass etc. What are your plans for 2016., what will you organize in Belgrade and other cities in Serbia?

Mr. Bjornstad: Energy, environment and climate issues are one of the priority fields when it comes to Norwegian support to Serbia. So far, the Embassy supported many projects in this field across the country. These included: supporting local communities to become energy independent and self-sustainable, raising awareness on safer alternatives and substitution of most hayardous chemicals, support for wast collectors in South Serbia, preventing bark beetle population on Tara mountain, recommendations for improvement in the context of accession negotiations with the EU in this regard. We will continue supporting projects in this field.

Interviewd by:
Vesna Vukajlovic

Green economy is an opportunity for development in Serbia

Serbian Chamber of Commerce in its structure, in addition to numerous associations, includes The Association of Energy and Coal Mining headed by Mr Ljubinko Savić. While we were talking about companies that are members of this association and with whom Mr Savić talks every day, we found out to what extent all these companies implement environmental protection measures. Mr Savić has looked back on the overall situation in the energy sector in Serbia, pointing out that foreign companies have brought good practice but we still need a huge amount of capital in order to invest into energy infrastructure.

EP: How many members are there in the Association of Energy and Coal Mining in The Chamber of Commerce and Industry of Serbia? What companies are those and in what way is their attitude towards the environmental protection regulated according to your information?

Ljubinko Savić

Ljubinko Savić: Business entities registered for activities in the energy sector have their rights and obligations as members of the Chamber of Commerce and Industry of Serbia through the activities of the Association of Energy and Coal Mining. The name itself suggests that the Association clamps legal entities registered for the production of primaryenergy, but also for distribution and sale, that is retail sale of final energy. The number of members varies, and the new Law on chambers of commerce in Serbia, which recently came into force, defines that the members of the Chamber of Commerce and Industry of Serbia are all business entities that perform registered business activity on the territory of the Republic of Serbia. Starting from this ascertainment, the total number of Association's members is around 1,500 business entities, out of which more than 900 are registered for the production of electricity from the renewable sources. However, this intention was not implemented in practice by a significant number of companies, thus these companies cannot be considered to be active in the energy sector. When it comes to the attitude of companies towards environmental protection, it primarily arises from obeying legal duties or from the recognition of economic interest and the possibilities for self-promotion. The attitude of companies in Serbia towards the environment is closely associated with the degree of efficiency of the company and the revenues it earns, but also with the awareness of the owner of the need to preserve the environment. Foreign companies which do business here are a good example. By coming to Serbia, they have brought 'good practice' and incorporated procedures form the field of environmental protection in their business model. Services for motor vehicles that took the model of waste management and procedures from the parent companies are an excellent example. Hazardous waste, such as used engine oil, is deposited and disposed exclusively according to the positive norms and regulations for this type of waste. Most of domestic services, whether they are owned by legal or natural person, use waste oil for heating instead of using light distillate oil. Often this oil ends up as a secondary raw material on the grey market or who knows where, so it doesn't get to the

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recycling. The consequences of this kind of irresponsible behaviour towards a man and the environment are, for example, 'stinky buildings' in New Belgrade. Material damage is huge and the damage to human health is even bigger and more devastating. There is a number of positive examples, when the resources of renewable energy sources are used as a mechanism for the environmental protection or for providing independent, reliable and cheap energy sources. On the other hand, the implementation of energy efficiency measures in the consumption sector has achieved significant effects in energy savings and improved competitiveness in the product and services market. Unavoidable exmples are JSC "Milan Blagojević" from Lučani, NIS JSC from Novi Sad, "Clinical Centre of Serbia", "Imlek JSC" from Belgrade or Agricultural Company "Sava Kovačević" JSC from Vrbas. These companies achieved their energy efficiency and the maximum use of energy mineral resources by installing highly efficient cogeneration systems, NIS JSC in production and other companies in consumption. With their responsible attitude towards their own companies and the environment, these business entities have achieved significant energy savings and surpluses of obtained energy

invested in the Serbian electric grid at preferential price and thus achieved positive financial effects. Another example of corporate social responsibility is the investment of Vienna Insurance Group into office building on New Belgrade – VIG Plaza. This office building was built with the respect for the highest standards of construction. Even 75 % of its need for the heat is covered from its own renewable energy sources – geothermal energy of low enthalpy, exploited from the layers in the vicinity of the building, and this is how 16,000 square meters of office space ere heated and cooled. Besides the savings in energy and positive economic effects, high standards and business attitude towards the local community are set by controlling and reducing of the pollution emitted by the building that would use the energy generated from the burning of fossil fuels. There are positive examples of our educational institutions – Secondary Technical School "Mihajlo Pupin" form Kula, Secondary school Varvarin, Secondary School of Electrical Engineering "Rade Končar" from Belgrade and the Faculty of Technical Sciences from Novi Sad. They have shown in their own example and through a practical training on solar systems, a possibility to valorize the potential of the sun, but also the potential of domestic intelligence. There are, of course, other individual examples of good practice, but Serbia is yet to introduce significant activities in order to achieve national goals in the field of renewable energy sources, energy efficiency and the reduction of the pollution of the environment. We are at the very beginning of this big process.

EP: When we talk about factories (for example : La Farge, Hemofarm, Tikkurila...) does the Chamber of Commerce and Industry of Serbia have a way to monitor and influence the level of pollution that these factories cause in Serbia? Is there sometimes a disharmony between financial performance and responsible treatment of natural resources?

Ljubinko Savić: Business entities – the members of the Chamber of Commerce and Industry of Serbia have legally defined rights and obligations. They exercise their rights through branch associations, general associations of entrepreneurs, as well as through elected representatives in the institutions and bodies of the Chamber. The operation of branch associations is based on adopted annual programs and plans that include, among other things, reporting on physical volume of production and trade, but also on operating conditions. The focus of our activities is in defining and representing the common interests of the economy on the national and international level, in order to eliminate obstacles in daily operations and creating a more favourable business environment – by improving regulatory framework and other elements of the business climate, by abolishing monopolies and the development of a competitive market, by connecting our companies to each other, supporting their appearance in foreign markets and education. We pay special attention to providing technical assistance to our members to enhance and improve their business and raising the capacity to produce and export more. With the aim of raising the potential of the economy, fostering good business practices and business ethics, respecting the rules of good business conduct, through among other things, promoting good practice, CCIS founded in 2007 the National award for Corporate Social Responsibility, CSR. Companies that have implemented CSR projects and have been successful in implementing principles of corporate social responsibility can apply for the competition for the National award for CSR. The aim of the award is to identify the best programs and initiatives in Serbia during the last two years according to pre-established criteria. One out of four criteria measures how far the organization advanced in the implantation of CSR in key areas: people, market, environment, community/society and assets/equity. The awards are given in three categories: micro and small, medium-sized and large companies. In addition to these awards CCIS has established the other forms of

evaluation of the performance of companies, corporate brands or good quality Serbian products. Traditionally, for 11 years, we have been organizing the activity "Best of Serbia" in corporation with the Ministry of Trade, Tourism and Telecommunications and daily newspapers "Economic Review". This award has a recognizable sign on Serbian products, but it is also a hallmark of successful Serbian companies. We also give the Annual Award of CCIS and the National Business Excellence Award – "Oscar of Quality". CCIS Awards that we give on our own or together with state institutions and civil society organizations verify the respect and commitment of

the members of the Chamber to the principles of environmental protection and sustainable use of natural resources. In the EU accession process Chapter 27 relating to ecology is one of the most challenging both for state institutions and its economy. The implementation of new legislation based on the principles of green economy is a long and costly process for the Serbian economy. It seems that the energy industry, as a sector of particular importance for the entire economy and society, will bear the largest burden in the process of adjustment and transition from the conventional solutions of exploitation and production to efficient use of "clean" and renewable energy available from different sources. The Chamber has already in the pre-accession phase begun to inform its members promptly about upcoming obligations. We organize trainings/education, study visits to EU countries and meetings of foreign and domestic entrepreneurs to exchange experiences and we actively participate in the work of negotiating and working groups for drafting legislations in the fields of energy, mining, environmental protection, waste management, nature protection as well as the other regulations…

The Chamber gives its contribution to green economy by setting a good example. The current three-year project is made to establish On-line trading platform for biomass, as the greatest potential of renewable resources in Serbia. The project is implemented with cooperation with UNDP and within the framework of the national project "Reducing barriers for rapid biomass market development in Serbia" implemented by the Ministry of Mining and Energy and in which is UNDP implementing agency. The aim of CCIS is not to stay on the promotion of investments into a single renewable source, but to direct its own potential towards the support to investors in the entire green energy and its rational utilization. When we talk about energy savings in the area of consumption, the Chamber wants to show the possibilities and untapped potential through its own example. We plan to install a system for monitoring energy and water consumption in the first half of this year. The system would measure consumption at any time, and measurement result would be visible and accessible for members and visitors of the Chamber.

EP: What is crucial for the economy in Serbia to be even "cleaner" and to be able to develop in the future on the model of European countries? Is it important to use renewable energy sources, to educate and discipline management or something else?

Ljubinko Savić: It is clear that economic systems as we know them

today will no longer be able to survive. This became even more apparent after the December climate summit in Paris. The European Union and almost all developed countries are committed to green economy. We can expect a strong wave of changes in economy, leaving the established norms and business practices and fundamental changes in the way of working, thinking and attitude towards natural resources. If we want economic growth, we have to change usual habits quickly. Changes are neither easy nor simple and they cannot be partial. They have to be comprehensive with multidisciplinary approach. Foreign partners together with the tendency of Serbian companies to participate in foreign markets represent specific conditions that companies and products have to meet. Renewable energy sources and their rational use are the base of green economy, energy security and sustainable energy. They are also the development opportunity for Serbia in the terms of new, innovative technologies. The emergence of new high-tech companies would enable the creation of new added value of products. It would also led to the productivity of science and the efficiency of science research centers. We already have requirements from the economy and investors for changes in the education system.

The aim of the Chamber of Commerce and Industry of Serbia, which is one of the priorities in the upcoming period, is to change the existing educational system in Serbia and to introduce practical work along with education. Awareness and education are perhaps the key factors of development and rapid adaptation of developing countries to socially responsible and economically affluent societies. Expanded knowledge base allows not only to decision makers in administration, but also to companies to act timely and competently, while respecting principles of corporate social responsibility, to reduce risks, uncertainty, costs and to raise competitiveness and increase profit. An important component of green economy and economic growth is the efficient use of natural resources in an acceptable way for the environment. Economic growth and environmental responsibility are not opposed. They are complementary goals that lead towards social development and growth. One of essential preconditions of growth are investments. In our case the investments are a limiting factor for the replacement of the existing with new technologies.

Therefore, it is vital to attract foreign investors and use all available sources for financing the modernization of the economy. Green economy relies on expensive but long-term systems. Huge amounts of capital are needed for financing energy infrastructure (smart grids), a system for the energy production from renewable sources, electrification of transport and energy efficient buildings.

Interview by:
Vesna Vukajlović

The key challenge for Serbia is to move toward low carbon economy

Based on the state of environmental infrastructure in the Republic of Serbia and the extrapolation of the situation in the countries that have recently become the members of the EU, it is estimated that the total costs for achieving advanced environmental quality standards, and this primarily refers to the implementation of EU acquis in this area, will amount to over 10 billion euros (up to 2030). The most demanding sectors are water sector (5.6 billion euros), waste sector (2.8 billion euros) as well as the sector of industrial pollution (1.3 billion euros). The essential part of the costs is related to operating costs for the operation and maintenance of the new plants which cannot be covered entirely from the European and international sources of funding and that must be financed from the budget, private sector resources or through fees.

The successful implementation of all these projections is based on the optimal usage of economical instruments, the development of adequate capacities on national and local level (including relevant ministries, public enterprises and units of local administration). On the other hand, direct economic benefits, derived from alignment in the field of the environment, should surpass the expenses in the amount of 2.4 times during the same period. This shows clear direct economic benefit for the Republic of Serbia from the implementation of EU acquis in the field of the environment, which is the main priority of the Government of the Republic of Serbia.

Satisfying level of environmental quality represents one of the postulates of the European Union and certain obligation of each country that wants to become a full member. Failure to meet demanding environmental quality standards that were set by European legislation carries hidden economic costs for the society, which must be calculated and transparently displayed. The benefit of timely perceiving of these costs is reflected in: avoidance of damage to health (reduced morbidity and mortality caused by high concentrations of pollutants in environmental media – water, air and soil); avoidance of the damage to property and agricultural production, as well as the benefit for the maintenance of natural ecosystems and ecosystem services.

Miroslav Tadić

Estimated costs in the industrial sector represent around 13% of total estimated costs of the environment. It takes a great effort in order to transpose and implement European directives of importance for the industrial sector, especially the Directive on industrial emissions in the Republic of Serbia. Many things have already been done in terms of transposition, but the implementation represents quite a big challenge, especially in terms of necessary investments in cleaner technology and advanced technological processes.

From an economic standpoint, desulphurization of the plants will for example be one of the most expensive components, as well as remediation of contaminated locations, etc. During the negotiations on the membership in the EU about this area it will certainly be necessary to negotiate additional, maybe one of the longest periods (so-called Transition periods) for the full implementation of these regulations.

Energy sector, industry and economy are to great extent related to the greenhouse gas emissions (GHG) and definitely represent a great potential in the reduction of these emissions, mitigation of climate change consequences and thus achieving a better environmental quality. The implementation of EU legislations in the field of climate and energy is certainly a cost for the economy and the budget, but it is definitely necessary and profitable long-term investment which enables competitiveness and placing products on the market.

In the future, in the field of climate change it is necessary to develop comprehensive national policy and strategy which will be in accordance with the European strategy 2020 and EU 2030 – Climate and Energy Framework. Moreover, EU is dedicated to a long-term goal (goals for 2050) to reduce emissions for 80-95% below the level of 1990 by 2050, in the context of the role of the developed countries as a group that takes similar actions on the international level. The reduction of the emissions to this level would require from the EU to become low carbon economy (European Union, 2014). According to these long-term goals, the production of energy should become almost completely free of carbon emissions, using around 30% less energy in 2050 by applying energy efficient measures. Therefore, the challenges for the Republic of Serbia, as a candidate country for the membership in the EU, and its economy are even higher.

Very important fact for Serbia is that the EU is under permanent obligation to comply with the requirements of the

UN's Framework Convention on Climate Change (UNFCCC): the EU's legislation has developed the entire series of regulations related to the reporting that is in accordance with UNFCCC regulation. The EU has developed clear and direct set of laws in order to comply with the mechanism of monitoring, reporting a verification in terms of GHG emissions and it has established a special policy in the field of climate change as a response to the obligations established by international regulations.

In order to align with acquis in the field of climate change, the significant efforts have been made in the Republic of Serbia so as to improve monitoring, capacity in reporting and verification through the adoption of new laws and training, especially of the business entities. The Law on monitoring, reporting and verification of greenhouse gases from the industrial and energy power plants, that should come into force in 2017, is the first step towards the implementation of EU emissions trading systems (EU ETS), but also a serious challenge for the power plants that fall under its jurisdiction. EU emissions trading system is maybe the most important regulation that will have an important impact on the development of Serbian economy and energy sector.

Alignment with the acquis and strengthening of the necessary administrative capacities still remains a major challenge. Administrative capacity in the field of climate changes must be strengthened on both central and local level in order to ensure efficient harmonization with the implementation of acquis. In this way the economy will also benefit from the adequately established system with clear guidelines and the support in the implementation of climate regulations. The key challenge for the Republic of Serbia is to move towards low carbon economy by reducing GHG emissions and at the same time to achieve economic goals and social cohesion.
The fulfilment of the obligations that arise from the international agreements, especially UN's Framework Convention on Climate Change, also represents an important framework for future strategic, political and investment trends in the Republic of Serbia. In addition to previous commitments, most of the State Parties of the Convention have submitted to Convention Secretariat their first Intended Nationally Determined Contributions to reduce greenhouse gas emissions (so-called INDCs), in which were expressed the intentions for the reduction of GHG emissions. Serbia has also submitted its INDCs among first countries in June 2015 with a marked reduction of 9,8% in 2030 in comparison to emissions from 1990. Apart from first INDCs of each Member State which have become an integral and essential part of the new Global Climate Agreement in Paris. Periodic "cycles" are provided in which INDSc would be regularly updated every five years. A new Climate Agreement in Paris was adopted during the 21st session of the Conference of the Parties to the UN Framework Convention on Climate Change which was held in Paris, from 30 November to 12 December, 2015 as a global and legally binding document. These ambitious goals will not be achieved without the contribution of the key actors in the field of energy, industry and economy in general.

The energy sector, industry and economy will certainly be crucial in meeting the obligations arising from the set of EU regulations in the field of energy and climate change, including at of the costs of approximation. In this context, we have adopted numerous national regulations and policy documents that provide clear guidelines, such as: The Energy Law, the Law on efficient use of energy, Decree on Incentive Measures for Privileged Power Producers, National Renewable Energy Action Plan, Strategy for Energy Development until 2025 with projections for 2030. Policies in the fields of renewable energy and energy efficiency can have effects both on EU-ETS sectors (reducing the use of fossil fuels) and sectors that are not covered by EU ETS system. Emissions in EU ETS sectors are affected by energy efficiency policies, renewable energy policies and the implementation of the regulation on carbon capture and storage and the use of flexible mechanisms.

On the other hand, the main legal and political framework for the sector of industrial processes is given in the strategic document "Serbian Strategy for Policy for Industrial Development (2011-2020)".

Apart from that, the Effort Sharing Decision 406/2009/EC of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, entered into force in 2009 exclusively for reducing emissions in the sectors not covered by the EU ETS. The sectors that are not covered by the EU ETS are: traffic (cars, vans), construction (heating in particular), services, small industrial installations, agriculture and waste management. This is a part of a package of policies and measures in the field of climate change and energy that will help Europe to transform into low-carbon economy and also to increase its energy security reaching the goal of the total emission reduction EU Climate and Energy Package (20% of reduction below the level of 1990 up to 2020).

The Republic of Serbia, once when it starts the process of negotiations, will have to contribute according to its relative wealth, in the economically and technically feasible way, of course taking into account sustainability of the energy, industrial and commercial sector in general.

The costs of implementing these regulations and harmonization with the EU acquis to a large extent rely on the resources of the industry itself that is economy (so called own resources). Certainly in the nomenclature of costs, there are also funds for environmental protection, commercial loans, state budget, but also donor funds. The use of donor funds should certainly be optimized – this involves the establishment of appropriate capacities for absorption, that is adequate institutions and project implementation, as well as balanced economic strategy that will in turn reduce the need for interventions from the state budget. This will reduce the costs to be borne by the Republic of Serbia.

The author of the text: Miroslav Tadić

The best and the most successful companies have integrated principles of clean production in the basis of their business

UNIDO (United Nations Development Organization) is the United Nation's specialised agency that promotes sustainable industrial development. UNIDO encourages the reduction of poverty in developing countries, as well as development of economy in transition. These commitments were defined in Lima Declaration in 2013 on the UNIDO's General Conference. This organization in cooperation with companies provides consulting services in addition to technical. In our country, Cleaner Production Centre of Serbia within Belgrade's Faculty of Technology and Metallurgy conducts mentioned activities. Each socially responsible company, that takes care of the environmental protection can be included in these programs and improve its business but, as our interlocutor PhD Branko Dunjic, executive Manager of Cleaner Production Centre of Serbia says, it is not the case. There are factors that affect the companies' lack of interest and forming of the opinion that this is irrelevant and secondary thing.

EP: Cleaner Production Centre of Serbia exists within the framework of UNIDO's project. You held a number of seminars and trainings for over 70 companies. Can you tell us more about the centre and the results of your work?

Branko Dunjić: Cleaner Production Centre of Serbia was founded in 2007 and it operates within the framework of Faculty for Technology and Metallurgy, University of Belgrade. The Center is at global level a part of UNIDO/UNEP's network of Centres for raw material efficiency and cleaner production (RECP Net). So far, it has helped in the application of methodology of raw material efficiency and cleaner production in more than 70 companies in Serbia and has trained 64 experts for cleaner production.

In addition to projects in Serbia, the Center successfully provides consulting services abroad. For the last four years the Centre has been cooperating with International Finance Corporation (IFC) on different projects of raw material and energy efficiency in Serbia, Russia, Croatia, Kazakhstan, Uzbekistan, Ukraine and Bosnia and Herzegovina. The Center cooperates with the Government of the Republic of Serbia, and it has successfully prepared and implemented the project 'Environmentally sound management and final disposal of PCB' funded by Global Environment Fund (GEF). Project 'Implementation of IPPC/IED Directive in facilities for intensive rearing of poultry and pigs' started in April 2015. Cleaner Production Centre and Faculty of Technology and Metallurgy implements this project in collaboration with

Branko Dunjić

the Ministry of Agriculture and Environmental Production of the Republic of Serbia and with financial assistance of the Embassy of Sweden in Belgrade. The basic objective of the project is to support authorities of the Republic of Serbia and operators to adopt sustainable approach for implementation of IPPC/IDE Directive in facilities for intensive rearing of poultry and pigs. At global level our Centre has become a part of newly established network of centres for efficient use of resources (RECP Net) which is jointly supported by UNIDO and UNEP.

Cleaner production Centre has become regional coordinator for all projects of raw material efficiency and cleaner production in the Balkans from 2014. In the project 'Chemical Leasing' which introduces a new business model in the management of chemicals, our Centre has been participating under auspice of UNIDO since 2007. The Centre has received many international awards for the achieved results in

introducing of the business model in competition with more than 50 organizations from 20 countries among which are a few gold and silver medals.

We have also received an award for the best Centre in the world that implements this project. The partners 'Knjaz Miloš', 'Ecolab', 'Henkel' and 'Bambi-Banat' have also got medals. Your readers should visits sites www.chemicalleasing.com, www.cpc-serbia.org for detailed explanations of the business models.

So far (2006-2015), this project has included 70 companies with 40,000 employees and the average amount of savings per company (not including the project with EPS) amounts to 100,000 € per year with:

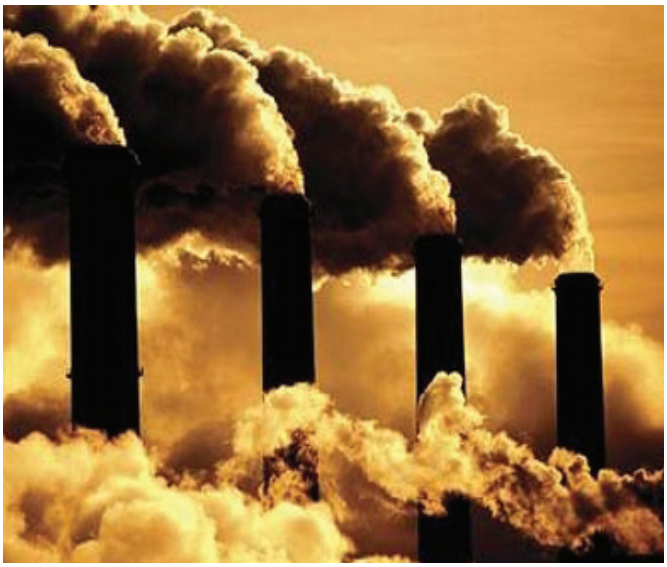
- Average reduction of water consumption: 50,000 m3/year.
- Average reduction of energy consumption: 500 MWh/year.
- Average reduction of CO2 emission: 500t/year.

EP: Which companies have applied your methodology and in what way do you start cooperation with new companies? What did these companies change in their operation after the training and is there a way to monitor and evaluate the implementation of methodology?

Branko Dunjić: Among the companies that have successfully implemented the methodology with our help are; 'Metalac', 'Knjaz Miloš', 'Imlek', 'Carnex', 'EPS', 'Zvezda-Helios', 'Bambi-Banat', 'Štark', 'Maxima', 'Sojaprotein', 'Tarkett', 'Umka', 'Chemical Agrosava', 'Galenika Fitofarmacija', 'Unipromet', 'Delta-Agrar', as well as companies from the cities of Pančevo and Čačak. As a rule the best, companies adopt and apply methodology of raw material efficiency and clean production in the best way. Six months after the completion of the project, our trained experts visit companies and take interest in the actual implementation of cleaner production options. These companies retain the team that was formed during the training process and they continue with systematic analysis approach of material and energy balance and constant improvements. Experience tells us that these projects whose investment value is under 5,000 €, are almost fully implemented, while the percentage of implemented projects of 50,000 € investment value is 60%, and the ones whose investment value is over 50,000 € is around 30%. The upper limit of repayment period of investment in cleaner production measures, that is acceptable for our companies, is about 3 years. At the beginning, we started cooperation with companies after series of information seminars throughout Serbia, and through personal contacts. Now, the companies increasingly emerge alone, but still the biggest part of projects is co-financed by different donors (UN, IFC, bilateral help).

EP: Is cleaner production in Serbia sufficiently represented and what are your impressions from the terrain? What are the main obstacles and problems in terms of environmental protection in order for factories to be responsible in the long run?

Branko Dunjić: Absolutely not. Most of our companies see clean production as unimportant, secondary thing, while it actually represents a serious business strategy, sustainable in the long term. Business strategy that is based on corporate stewardship, constant evaluation and advancement, and curiosity. The Strategy based on the responsibility towards yourself, the environment, natural resources, and future generations. Truth be told, our colleagues from all over the world say that they have the same situation. Again I can say that the best and the most successful companies have the best integrated principles of cleaner production. The main obstacles are obsolete technologies and lack of money.

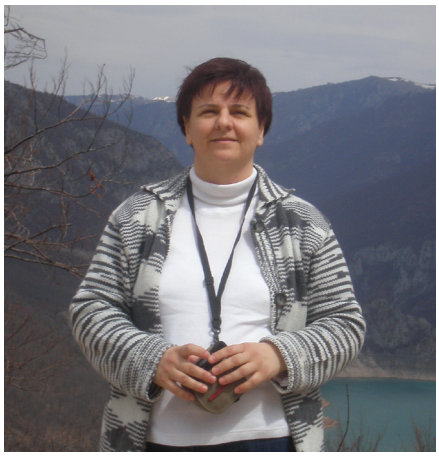


Our industry lost pace and money in the last decade of the XX century. So now it is forced to work inefficiently, losing money through excessive and inefficient energy consumption, raw materials, chemicals and water. There are no financial incentives for the introduction of clean production, and you can also notice insufficient law enforcement. At the same time, water and energy prices are relatively low (although these prices are too expensive for some!), and this additionally contributes to the lack of interest of companies for this type of projects. All this leads to some type of apathy and disbelief in the possibility of change, and that is the reason why certain improvements that don't cost anything are not implemented.

Interview by :
Vesna Vukajlović

Business sector does not like "green" stories very much

Sustainable development implies balance between the consumption of natural resources and the ability to restore natural systems. There is no precise definition, even in the dictionaries at the beginning of the 20th century, in the Oxford Dictionary for example, the term sustainability is not



Aleksandra Mladenović

mentioned. One of the modern definitions from 1987 is associated with the Bruntland Commission and presented in the report "Our Common Future". It was concluded then what are the basic guidelines of the future operation of the United Nations in the field of environmental protection. This definition reads as follows: Sustainable development is development which satisfies the needs of today, while it does not compromise the ability of future generations to satisfy their own needs. Bruntland Commission is otherwise World Commission on Environment and Development founded by the United Nations Organization in 1983. It was named after the surname of Prime Minister of Norway, Gro Harlem Bruntland, who was the Chairman of the World Commission on Environment. On this occasion for the newsletter RESPONSIBLE COMPANIES we talked to Mrs Aleksandra Mladenović from the association Environmental Ambassadors for sustainable development. We wondered whether this association follows the aforementioned principles, and whether, according to their experience, the industrial sector in Serbia takes care of future generations and their needs.

EP: Tell us more about Environmental Ambassadors for sustainable development. What does the association do and what are your findings about the environmental protection in Serbia taking into account all the facts?

Aleksandra Mladenović: The association Environmental Ambassadors for sustainable development in the basis of its operation has four pillars: education, promotion of scientific work and innovation, environmental protection and sustainable development, including all its components. In particular, we have significant activities within the regional international cooperation with a special consultative status in UN ECOSOC, we are accredited by UNEP and many other significant international organizations. Within the team we have professional teams and experts, whose experience we use to upgrade our work. We deal with the issues of importance to environmental protection from different angles. As a professional association of experts we propose solutions to the identified problems, from the perspective of profession, science and practice. As a civil society association we formulate critical viewing based on knowledge and information in relation to the activities of decision makers, when it comes to both big or small problems in the environment. As citizens holders of the major changes in the society, we support and cooperate with all the organizations, institutions, associations, local communities and national institutions, so that we all together provide a healthy environment and unable the unhindered development and prosperity for ourselves, our environment and future generations. Taking into consideration that we repeatedly had opportunity and initiative to personally participate in proposing, giving opinions, criticizing and correcting regulations that primarily relate to waste, waters, chemicals, nature protection, we support all positive changes in legislation which must occur in the process of joining the European Union, in order to show potential, readiness and willingness to be a driving force behind these changes. Our legislation complies at a rather high percentage with the European legislation, whose achievements we strive for. However, a major problem is the implementation of regulations and mechanisms for sanctioning of inadequate procedures of individuals and institutions/ business entities. This leads to unforeseen accidental situations in the environment, hazardous to human health and nature.

EP: Chapter 27 is one of the Chapters which should open in order for Serbia to join the EU. What are the things we have to do in order to meet the required standards?

Aleksandra Mladenović: It's a long way for our country. The Chapter 27 (environment and climate change) is very demanding and it is difficult to compare it with other chapters (for example, there are around 60 EU directives that we should adopt and implement). It is said that it is the most complex and most demanding chapter, precisely because of this complexity and the great number of demands which must be met in a limited time period. There are many things which Serbia will have to meet in accordance with all its available resources, manpower and financial, within the Chapter 27. Some of the problems for Serbia are inadequate systems for waste management and water management (both for infrastructure and system solutions), then, the

lack of understanding for the climate change and non-implementation of its mitigation measures. We should also mention inefficient system for funding of nature conservation and environmental protection, still not established efficient and sustainable management of natural resources… So there are many problems which haven't been solved timely and the current approach has led us to where we are now and thus we have a "headache" from "the famous Chapter 27" and we do not know how we will fulfill those demands! Therefore it is very important to identify on time – that is immediately, the issues for which we will ask the EU to extend the deadlines. In this regard, we will need the international support especially from the developed countries, especially from the ones which have gone through the entire process, in both consultant and financial terms, which can be achieved through IPA and other available funds in the stage of the EU accession. We will need the help of bilateral donors and we will have to separate our own funds.

EP: How do the industry and production companies take care about the environment in Serbia? Is corporate responsibility sufficiently developed?

Aleksandra Mladenović: When it comes to corporate responsibility, it is something that is increasingly becoming topical and it is good that this is the case. In the following few years we will have well defined business entities which will succeed in surviving on the increasingly demanding market in terms of respecting the principles of environmental protection and sustainable development. So called "green procurement" or "sustainable use and production" are no longer recommended terms, but obligatory. A company can easily lose a job if it participates in tenders and it doesn't respect these terms. This is something that business sector least likes. To be honest, business sector doesn't like all these "eco", that is "green" stories either. They are very demanding, there are compulsions and regulations, but as soon as they face the fact that the European Union (and international market) wants to include in their membership only the countries with clearly defined environmental policy it "will hurt them less" later. It is about time to get used to throwing different types of rubbish into differently colored bins. It is necessary to get used to the filters which the factories need to install, renewable energy sources instead of individual furnaces due to which at least half of Serbia is under fog, smog and smoke during winter… All these things need to "hurt", we don't have to love or accept them, but we need to be prepared to change.

Many companies have already made their own programs of corporate responsibility. I would particularly point out to the company "Tetra Pak Production Ltd" with which we have been cooperating for three years in a row on a project Eco-Pack (educational and demonstrational project on the proper treatment of tetra pack packaging). We have a very good cooperation through our Foundation for education on environment programs (programs "Green Key", "Blue Flag", "Eco-schools", "Young Eco-reporters) with "Tetra Pak Production Ltd", also with the hotel "Radisson Blu" and "IN hotel", public enterprise "Ada Ciganlija" and the City of Belgrade, many other local communities, "VIP Mobile", "RECAN" foundation... These are all companies, organizations and even local administrations which live from the citizens' money. They have in accordance with their business orientation chosen not so simple and easy way to be socially responsible towards their environment and the environment which they "borrow" from other citizens. Taking water, space and energy through the improvement of the conditions in the same environment, they take back the part of the profit in order to have better resources and to be able to use them longer.

EP: What are the best examples from practice which we should follow? What would be the first thing that we should implement?

Aleksandra Mladenović: All the activities in the field of environmental protection are more likely to succeed if experts work on solving the problems, and if the education in environmental protection finds its place. It is necessary to act responsibly towards the environment and resources and that should become a social norm. This is the reason why Environmental Ambassadors for sustainable development foster education, promotion of scientific research, innovation and profession in the field of environmental protection and sustainable development. For now, the best example from practice are 56 educational institutions from entire Serbia which were included in Eco-schools program and which promote true values of the environment in their local communities. There are also two big hotels in Serbia, whose management is sufficiently aware to realize that they are big users of resources and environmental polluters. They conceptualize their work on sustainability and preservation in accordance with the criteria of the Green Key. There is also "Ada Ciganlija", public enterprise which in cooperation with the city Administration of Belgrade works on the improvement of the conditions for the users of this beach every year. This beach is certified with the Blue Flag due to that. Then, there are also hundreds of Young Eco-reporters which do not turn their heads from the everyday problems of water, air and soil pollutions. They notice what is good and what is not and they know to propose possible solutions... There is also us, the citizens of the only Serbia that we have and if we do not start applying the examples of good practice, making and respecting good laws, protecting every our plant and animal because it is valuable for us. If we do not do all these things for ourselves, we will not be good to ourselves and Europe will not have us if we are irresponsible!

Interview by: Vesna Vukajlović

It is necessary to establish separate Ministry for the environmental protection

Energetski portal invited Ivan Karic, who leads the party 'Zeleni Srbije'/ The Greens of Serbia, as an interlocutor for the publication of bulletin RESPONSIBLE COMPANIES. This party in their intentions and actions looks up to the experience of the similar 'green' parties in Europe and in the world. This means that it deals with the issues of environmental protection, promotes the sustainable development of the society as well as the development of new perspectives in the European Union. It wants to support tolerance and peaceful communication in Europe and its institutions. It makes a significant contribution in the development of alternative global structures in cooperation with Green parties no matter where they are located. 'Zeleni Srbije'/ The Greens of Serbia in its operation and implementation, cooperate with associations, individuals, representatives of business sector (which is very important for this publication), local and national institutions, and political parties in the country and abroad.

Ivan Karić

EP: The only political representative, whose primary program orientation is ecology and the protection of the environment, in Serbian parliament is the party 'Zeleni Srbije'/The Greens of Serbia. We have to mention that you have only one representative. Can you compare parliaments of other developed countries with our parliament and what does this mean in practice?

Ivan Karić: The situation in Serbia is on the verge of ecological disaster. The environmental problems are the problems which are solved in the long run. Not only because their solutions cost much money, but also because the consequences of the pollution and excessive consumption of natural resources are far-reaching.
Environmental consequences for the economy, energy stability, agricultural and industrial production can turn a country into an economic slave. It also influences the European integration that now all parties in the parliament strive for. Serbia does not have independent Ministry of environmental protection and the system has been collapsing for over twenty years. There is no city nor municipality which doesn't have problems with the health of its citizens, water, soil and air pollution.

There is a very serious green network of civic initiatives, but only with our entry into the National Assembly, such actions become visible and with a very clear scope and achievements. Precisely because of this we combine civil actions with protests, affirm forms of direct democracy, petitions, public advocacy, national legislative initiatives, public debate following the example of European Green parties.
Opening of the negotiations with European Union is the chance to arrange the system of the environmental management through the Chapter 27. The establishment of separate Ministry and the green investment fund are necessary steps for enabling the system. 'Zeleni Srbije' /The greens of Serbia have prepared program and politics.

EP: In your opining how can we help or encourage companies, foreign investors and factories to make their business more responsible when it comes to ecology and the protection of natural resources?

Ivan Karić: The basic requirement is a strict adherence to the adopted laws and regulations, which cannot be selectively applied. Environmental conditions must be clearly defined and known in advance for all investors. On the other hand, the 21st century is the era of the development of green production and eco-industries which solve problems today and don't cause them. This includes constant application of the principles of circular economy in the green development of Serbia.

EP: What do you think about the introduction of electric cars as a means of transport into public sector and thus reducing the emission of gasses that pollute the air?

Ivan Karić: Public transport and transport in public sector must use renewable sources. This is how we reduce budget expenditures but also reduce the pollution in urban areas. These are widely available technologies, which emerged from experimental stage a long time ago and they do not represent 'space wonders'. Besides, the government can find the way to encourage the purchase of such vehicles in private sector by establishing dedicated leasing companies in collaboration with some energy company or with the manufacturer of hybrid or electric cars. The goal of the 'Zelenih'/ the Greens is that one large car industry transfers its production of hybrid and electrical cars and buses in Belgrade's surrounding.

EP: What are our greatest advantages on which local community and companies have to work on and what are our disadvantages and omissions when it comes to the improvement of energy efficiency and sustainable development?

Ivan Karić: Cities are the biggest energy wasters. Massive installation of solar panels on public and private facilities and flat roof of cities for hot water would contribute a 30% savings of electricity. The best example of this kind of rationality is the city of Barcelona. For this kind of equipment we have local manufacturers and that would also be an opportunity for new green jobs.

Many cities in Serbia are on the rivers. From high power heat pumps, which use river water energy for heating and cooling, we can get up to 5 times cheaper energy for heating and cooling. The example for this is the city of Malmo. There are companies and skills for the production of such equipment in Serbia. These examples are the excellent chance for the development of green energy industry.

Today there are minor companies which conclude contracts for the supply of cooling and heating energy which is produced on the basis of heat pumps and solar energy. These contracts are cheaper than district heating system. All city district heating plants should be grouped into national ESCO company, transform and change their sources and methods of energy supply. Such company should invest in façades, replacement of windows and to pay off the investment form savings. In this way we would start a great part of construction and technical operations. It is like an investment into new production of electricity or heat. The cleanest and the cheapest energy is the one which we do not have to produce. A billion euros invested in this business brings 100,000 jobs.

Energy companies are already coming with the projects for the construction of cogeneration plants that use agricultural and forest residues. They can produce heat, electricity and activated carbon as a side product and they can also supply electricity to cold storages and driers. There is bad practice in Serbia that these residues are burnt or left to rot. In the next three years, our thermal power plants should in addition to lignite, use 40% of biomass in cogeneration process as fuel in combined way of combustion. That is not a technological problem and yet we are talking about thousands of green jobs and the reduction of harmful impact on health and lung diseases in general. Huge amounts of ash from the thermal power plants represent environmental hazard and they can be serious resource in construction industry and road construction. All major places in Vojvodina can have their own small power plants which can produce the energy for heating, greenhouses, driers, cold storages and electricity by using agricultural and forest residues, and thus become energy self-sufficient. A little bit of political will and ecological courage are needed for all these green solutions.

Interview by: Vesna Vukajlovic

The key problem is the situation in the society and in public

Our interlocutor is Aleksandar Jovovic, a full professor at the University of Belgrade, Faculty of Mechanical Engineering. The focus in research and scientific work of the Professor Jovovic is process engineering and the environmental protection. He is a full member of many governmental and non-governmental organisations. He cooperated with a large number of international institutions and organisations in Serbia and in the Balkan region. We have learned many things from him about RESPONSIBLE COMPANIES.

EP: What does Serbia need to do in order to develop the environmental protection in the right way? How can we commit foreign investors to follow high standards concerning this matter?

Aleksandar Jovović: As far as the environment is concerned, the compliance of the regulations is a classical political issue. It depends directly on the political will. Serbia generally speaking has pretty good stipulated laws concerning the environmental protection. We didn't transpose everything from the EU, but when it comes to the air protection part of regulations, it has been a part of our laws for years. We had regulations on pollution emissions even in 1997, and now we have a regulation which has been valid for 5 years. The point is whether it is obeyed or not. It is obeyed very rarely since the biggest systems do not have the possibility to obey the regulations. The entire electric power industry, industrial complexes are not able to follow the regulations. They need a long period to obtain funds, and then to invest funds in, for example, desulphurisation in order to obey the regulation which is similar to the European. There are even penalties. It happens that inspection visits customers and they even lay down measures and penalties. Fines are not low, but they are not significant either. Practically, no Manager can do anything but to be punished. They pay penalties but there is no mechanism what to do if you do not have that money. The construction of the plant for the pollution reduction costs several million euros. Less demanding projects are mostly completed, as for example the reconstruction of electrostatic precipitators in a public enterprise EPS, and maybe just few have not been reconstructed yet. For example TPP Morava starts with a reconstruction. In order to invest in desulphurisation you need 200 million euros, so you need to obtain a loan or some sort of a grant. TPP Kostolac obtained a loan from China, but you need a lot of time in order to get a loan. Situation is much better when it comes to foreign companies, which are in the property of foreign investors. Those companies have their own rules, and independently from our legislation they would introduce the measures. It refers to companies such as Lafarge, Coca Cola, Titan. They have their own criteria that must be met and they invest in the sector of environmental protection. The biggest problem in my opinion is in the companies that are owned by the State. They have huge capacities and they need a huge amount of money or they are in such a poor condition that we do not know what will happen with them.

EP: What is the situation in our society when it comes to the awareness level in the environmental protection?

Aleksandar Jovović

Aleksandar Jovović: The situation in Serbian society is the key problem. Society as such does not understand the problem of environmental non-compliance. The politicians also don't understand. The question is how much it costs to disobey the regulations when it comes to energy sector, in the long run, by reducing the years of life, through the number of people suffering from numerous diseases? So, people do not die momentarily due to the pollution but they invest in disease. We have an increased number of ill people in certain areas because they breathe in this or that kind of air. You send your pollution to other countries, they send you theirs. It is very difficult to make an assessment. The point is that the environment has an impact on the quality of life. When Europe adopted new Industrial directive they didn't decide to do that just like that. They did the analysis

of the previous directive and concluded that sulphur, in some parts of EU, was significantly reduced. They have reached the possible minimum of harmful gases emission in the most polluted parts of EU. In the long run they gained a lot and then they made new technical and economical analysis. You can find that study on the European Union's websites. The study shows how much it will cost to follow the new directive in billions of euros, and how much they will earn since people will be healthier and will be treated less, etc. When you live in a poor country, and here I think about countries around us not only Serbia, you should invest a billion euros in electric power industry. Not investing that billion will cost you other 30 billion in a certain period of time. Those 30 billion for you is abstract, you don't see them and therefore you have a feeling that you aren't actually making profit. On the other hand you cannot forget about energy sector either. The state will of course close each acutely hazardous, but in a real situation it tolerates.

EP: How can we introduce courses related to theenvironmental protection into education system? How can we change the way of thinking of all the participants of society and do we do enough on this issue in your opinion?

Aleksandar Jovović: It is best to work with new young generations, but when they grow up they realise that it does not function. It doesn't function because we don't have continuous political decision. We want it to function as a normal country on all issues, but you conduct everything in the long run! Imagine that we started to educated five-year olds in 2000. Today you would have people of 20 who think in a totally different way. No one is seriously engaged in that. Each kindergarten has programs, schools also, even I teach 5 subjects on the environment. And this sounds good, but due to million technical and administrative problems things don't function. The Ministry in the key sector for issuing integrated so-called environmental e-permits has three employees. If they worked 24/7 they wouldn't be able to timely issue e-permits in accordance with the regulations. Everything is complicated when you live in a financially unstable country. In the 90s all EU countries experiences the greatest success and we were at war. We stopped progressing and a huge difference was made and now it is difficult to compensate that. Not even Bulgaria, Slovenia and Croatia can reach the deadlines which they set in the negotiations with the European Union just like that.

Interview by: Vesna Vukajlovic

The adopted legislation in the field of environmental protection

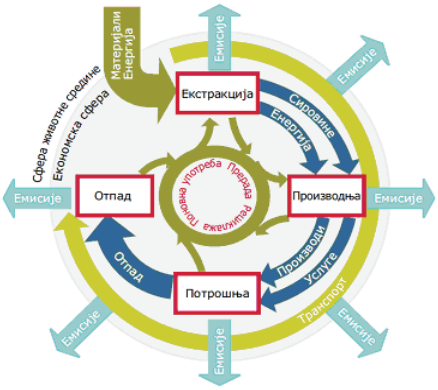
On Friday, 19 February, 2016, a set of laws was adopted in the field of environmental protection. In the statement of the Ministry of Agriculture and Environmental Protection it is cited that Law on Environmental Protection was adopted that stipulates the establishment of the Green Fund. They also adopted Waste Management Law whose amendments should contribute to the development of the economy, ensuring of the continuity in the operation of new plants subject to integrated permit, establishing continuity in the system for financing waste management and specific waste streams and establishing the basis for circular economy. Another law was adopted, Law on Nature Protection, whose amendments determine the competence of the relevant ministry for giving approvals for the sector plans and program for the use of natural resources in protected areas and the area of ecological network. In addition to these, a new concept of geopark is introduced as clearly defined areas where geological heritage objects are protected, preserved, presented and promoted. It is envisaged that the relevant

ministry informs the public about the processes of starting the protection of natural areas of I, II and III category on the web page of the Ministry and the guard of the protected area will have the status of an official. Let us remind that on 17 February, 2016 amendments were adopted on the Law on Environmental Protection, Law on Nature Protection and Waste Management Law.

Sandra Jovićević

Environmental Protection Agency Economic Activities

The impacts of economic activities on the environment, which reflect in climate change, emissions of pollutants in water and air, the loss of biodiversity and degradation of soil and ecosystems persistently accumulate as a result of decades-long excessive consumption and insufficient investments in maintenance and replacement of resources.



On the other hand, sustainable economic growth is based on the efficient usage of natural resources and on a high level of protection and the improvement of the environmental quality. This is the reason why it is necessary to prevent further environmental pollution and to promote sustainable production and consumption, so that the economic growth does not cause a proportional increase of environmental degradation. Adjusted integration of the questions in the field of the environment through many domains of sectoral policies can contribute to the increase of efficiency by which natural resources are used and thus help the greening of the economy by reducing usual pressures on the environment that stem from numerous sources and economic activities.

1. Industry

The sector of industry provides many important economic and social benefits such as the production of goods and products, the provisions of employment and tax revenues. On the other hand, the industry participates in the emissions of pollutants into air and water, the degradation of soil, waste generation, energy use, etc. The problems of environmental pollution in the Republic of Serbia are largely the result of outdated technology, as well as low energy and raw material efficiency, which is to some extent the result of insufficient financial resources for the improvement of the current condition.

In order to prevent and control companies' pollution we should reconstruct or innovate the existing technological processes, introduce the best available techniques and the best environmental practices. Companies can introduce voluntarily measures such as: certification SRPS-ISO 14001 standards and EMAS (Eco Management and Audit Scheme - the system of environmental management and verification), the introduction of cleaner production, etc. Cleaner production means more efficient use of raw materials and energy, emission reduction and waste generation. The advantage of introducing a system for environmental protection management, as well as cleaner production, is not only a mean for the environmental protection, but also for cost reduction, the increase of competitiveness, technologies and skills on international markets and expansion of the market options.

Environmental Protection Agency follows the industry through the following indicators:

- Certification in accordance with the ISO 14001 standard
- The introduction of EMAS system
- The introduction of cleaner production
- Licensing for Eco-label
- The implementation of environmental protection measures in the industrial sector

2. Energetics

The energy sector is crucial, both in terms of economic development, because it provides industrial, commercial and social wealth and in relation to solving many important environmental problems. It puts pressure in all energy sectors and in all stages from the production to the consumption, such as: the emissions of pollutants into air and water, degradation of soil, waste generation, etc. These pressures contribute to the climate change, threaten natural ecosystems, as well as man-made areas and they also have negative side effects on human health. Energy sector is a significant polluter of the environment in the Republic of Serbia. Adverse impact mainly comes from the power plants that use lignite as fuel, and also form the oil industry. Technological obsolescence of the energy system causes low energy efficiency and severely burdens the environment. In order to overcome the existing deficiencies, energy policy is focused on the usage of renewable energy sources, the implementation of energy efficient program, rational energy use program, the establishment of clean development mechanism, as well as the increase of energy supply security and others. Conditions for sustainable future are necessary for the development of clean, efficient and safe energy supply, as well as efficient management of natural resources.

Environmental Protection Agency follows energetics through the following indicators:

- Total primary energy consumption by energy sources
- Consumption of the final energy by sectors
- Total energy intensity
- Consumption of primary energy from the renewable energy sources
- The consumption of electricity from

renewable sources
• The implementation of the environmental protection measures in the energy sector

3. Agriculture

The agricultural production is based on the exploitation of biological resources and for this reason it has increasingly been working on the development of agricultural systems which in quantitative and qualitative terms do not change chemical, physical and biological sources and in which there is no negative feedback loop in the interaction of these sources, among present and future generations. The Republic of Serbia has 5,096,267 acres of agricultural land which accounts for 65.8 % of its territory (excluding the territory of Autonomous Province of Kosovo and Metohija). Fields and gardens dominate with 3,293,577 acres, which represents 64.6% of agricultural land, orchards occupy 4.7%, vineyards around 1% and meadows and pastures around 28% of agricultural land. The largest share in the structure of sown areas in 2011 have the areas under wheat 62.3%, then the area under forage crops 14.8%, industrial plants 14% and vegetable plants 8.9%. In Serbia there are three main agricultural regions and they are: region with the combined crop and livestock production, which includes lowland and plane areas in river valleys; region with combined livestock fruit and wine production in highland areas with a variety of microclimates and soil; and mountainous region with livestock production dominated by semi-natural grassland, meadows in forest areas and pastures in highland areas. Agricultural productivity is, either in the sense of the soil or labor productivity, below the average of the EU. One of the reasons for that is the low level of machinery, equipment and supporting infrastructure.

Environmental Protection Agency follows the impact of agriculture on the environment through the following indicators:

• Areas under organic farming
• Consumption of mineral fertilizers and plant protection products
• Irrigation of agricultural areas
• Agricultural areas of high nature values
• Environmental Protection Agency follows also the change of use of agricultural land by converting it into the second class of agricultural land or into non-agricultural land.

4. Transportation

Transportation represents a very important economic branch of the Republic of Serbia for its very significant influence on primarily economic growth of a region (directly or indirectly, with the growth and development of other economic branches), as well as the competitiveness of the economy, regional development and demographic flows, and it is the fastest way in the Serbian economy integration process in European economy flows. Serbia has a widespread transportation network, but transportation infrastructure of all types of traffic is generally on unsatisfactory level. Railway infrastructure is in a bad condition in particular. The rolling stock is characterized by high technological obsolescence, unsatisfactory situation, insufficient number and high degree of immobilization. There are extreme difficulties in river traffic performing, while the biggest problem in the field of road transport is related to the poor maintenance and the need for reconstruction of the existing infrastructure and the construction of the new road infrastructure and the low level of traffic safety on the road network.

Road vehicles are one of the main emission sources of pollutants in air in the Republic of Serbia, especially in bigger cities. The emissions of exhausted gases cause the release of SO2, CO, NOx, O3 precursors, particles and lead into the atmosphere. Also, transportation is a main energy consumer and it is also responsible for noise pollution. Apart from that it has a serious impact on the landscape, as well as on the defragmentation of natural areas with serious consequences for biodiversity.

Environmental Protection Agency follows transport through the following indicators:

• Passenger transportation and passenger transportation quantity (pkm)
• Freight transportation and freight transportation quantity (tkm)
• Total fuel consumption and fuel consumption by type
• Total consumption of cleaner and alternative fuels

5. Tourism

Like other economic sectors, tourism as well affects the quality of the environment as a consumer of natural and other resources: soil, water, fuel, electricity and food, but also as a producer of significant quantity of waste and emissions. Potential negative impacts of tourism on the environment are expressed through the pressure on natural resources, wildlife and habitats as well as the creation of waste and pollution. On the other hand, tourism has a major interest in maintaining the quality of the environment at a high level, so that clean and healthy environment is a very important precondition of its successful development. The positive effects of tourism in relation to the environment are reflected in the fact that this is the activity which aims to: use natural resources adequately, improve the landscape and maintain the environmental, economic and socio-cultural values of the local community, because it is clean and healthy environment that is a very important precondition for its successful development.

Environmental Protection Agency follows tourism through the following indicators:

• Tourist arrivals and overnight stays
• Tourist traffic (arrivals) and stay (nights) according to the type of resort
• Number of beds
• Trends in the number of beds and number of nights
• Activities to achieve sustainable tourism

Source:
www.sepa.gov.rs

Together we improve the quality of life

Everyday business practice best testifies on the determination of Hemofarm to proactively create sustainable business models by achieving better business results. At the same time they develop the local community in which they operate, respect the needs of present and future generations, and most importantly protect limited natural resource. Natalija Popović is our interlocutor and for the special bulletin RESPONSIBLE COMPANIES she reveals in detail how Hemofarm has become a model company when it comes to nature conservation.

EP: Hemofarm is one of 5 companies in Serbia that publish a report on sustainable development, as well as one out of two companies that have the highest score in this area. What does that mean exactly? Can you tell us why Hemofarm has an advantage compared to other companies that may endanger the environment?

Natalija Popović: That is right. Hemofarm is one of just two companies that have achieved A+, the highest possible score in the area of sustainable development in the region, in accordance with international GRI G3.1 methodology. And as you have already mentioned, one of the few companies in Serbia that approaches to its business from the perspective of respecting the principle of sustainable development. Companies are faced with numerous problems in the modern business environment which is quite turbulent. The topic of sustainable development usually does not get to agenda, in a sea of everyday existential issues, but this needs to be changed. The significance of this topic is best confirmed by Agenda for sustainable development 2030 adopted at the UN summit last year. It is based on 17 global targets: to eradicate poverty, hunger and inequality, the prevention of climate change and environmental protection, the improvement of the access to health and education, etc. This strategic importance of sustainable development has to be viewed and customized to company's business because it is a certain way for their improvement and survival, but also for the sustainability of the society we live in. Foreign companies have recognized that long time ago and that is why sustainable development is one of the key issues and a business approach of modern companies, but also a few domestic companies including Hemofarm. This is beyond the scope of the prevention of endangerment of the environment and it is much more than

Natalija Popović, Director of Strategy and Sustainable Development, Hemofarm

that. It includes a set of economic, environmental and social issues which illustrate the performance of the company – staring from profit and financial parameters, corporate excellence, human rights protection to taking care of generated waste, investment and development of local community, concern about climate change… This is in a nutshell. The achievements of Hemofarm in the context of sustainable development illustrate that the company has evolved and is able to compete with global competition, which gives us the sales advantage. Likewise, Hemofarm tries hard to provide a good example for other companies how to improve their operations and comply with global trends, but at the same time to use available resources in a responsible way. We have to be aware of the fact of the national importance of sustainable development, whose aspects, with the focus on environmental issues, are rather represented in the latest chapters of EU on stabilization and association of Serbia.

EP: The new common future is the motto that Hemofarm follows and which dates from 1987 and Bruntland Report published in the UN. You emphasize the responsibility towards the future generations with respect to your products and your employees. Is it difficult to maintain the balance between financial performance and ethics that you represent?

Natalija Popović: At the very outset, a few years ago I would say that it was very challenging, today it is standard and a way of thinking, and in the conditions we live in it is a safe way. It is a question of responsibility towards the future generations – we should use the resources that are available to us today in such a way that apart from satisfying immediate needs, we have to we enable the future generations to do the same, because this is the only way for the entire society to last and exist. Clean air and the preservation of the ozone layer is an important factor of this responsibility. Therefore, Hemofarm is trying to, by following the latest technologies in accordance with required standards, improve its production so that the emissions are reduced below the legal limit. Likewise, the core responsibility lies in preserving of the quality and availability of water. Hemofarm achieves this by relieving the public water supply system and using its own artesian wells, collecting rain water which is used as technical water, as well as recovery of water, i.e. vapor. In the broadest context, sustainable development is also the prevention we stand for, rather than treatment. In other words, modern health systems can be sustainable only if they pay enough attention and shift the accent to the development of healthy lifestyles which protects the health itself. Prevention enables the health care system to provide treatment to those who really need it. Hemofarm, through its Foundation, for more than 20 years seeks to further develop the community we work and live in, supporting the health care system of Serbia. This primarily refers to infrastructure projects and donations

of medical equipment for the institutions that are in the most difficult position, as well as the development of public aware campaigns in the core issues such as organ donation and transplantation. We do all this driven by the idea that people are our most important resource! That is why we pay special attention to the development of our employees, enabling them every year a number of trainings and opportunity to improve their knowledge and skills.

EP: What is it that Hemofarm can teach other investors and new corporations? What is most difficult to achieve when it comes to ecology and what is most valuable?

Natalija Popović: Let's not focus on ecology, but rather talk about responsible business, which has the goal of sustainable development. Hemofarm has a lot of examples that can inspire others. One of them is that we came up with the idea to freeze water during the night, when electricity is cheaper and the electric grid is less burdened in order to melt that icy water during the day and use it for cooling devices in the production process. The other example is that we succeeded to preserve up to 27000 trees on annual basis by introducing nearly 90% of recycled cardboard for the secondary packaging of products. To this I might add that we have improved our packaging system, that is stacking products into transport boxes and stacking boxes on the pallets that are shipped by trucks. That is how we have a bigger impact on transport efficiency which reduced the number of trucks transporting our products and therefore we reduced the emission that negatively impacts the environment. Also, we have improved the production system of infusion bottles, so that the part of bottles damaged in the production system, instead of becoming scrap, returns in the production system by recycling, maximizing the utilization of granules i.e. starting raw materials. In addition to this we have accepted the principles of leading code of social compliance – BSCI, that we convey to our business partners, protecting labor and human rights. Judging by the fact that we have achieved the highest level in the field of sustainable development, we are on the right track and that we succeeded in achieving the balance you asked me about.

Interview by: Vesna Vukajlović

700,000 solar panels have been installed on our facilities so far

The Prime Ministers of Sweden and Serbia confirmed that IKEA will invest 300 million euros in Serbia by the end of the year at the World Economic Forum in Davos during January. Exclusively for our newsletter RESPONSIBLE COMPANIES Mrs Irena Dobosz, the manager for sustainability at IKEA company for Southeast Europe, has said something more about the way in which this company operates. IKEA follows the values and the concept of the founder Ingvar Kampard, who grew up in Smaland province

Irena Dobosz

in Sweden. Rocky landscape dominates Smaland province, and residents have the reputation of innovative people because they use all raw materials in a thoughtful way and do not recognise imperfect solutions. That spirit which is characterized by the belief that no method is more effective than the good example is incorporated in IKEA.

EP: IKEA is soon coming to the Serbian market. It is a renowned company which invests a lot in recycling, in environmental protection and in well-selected raw materials. Tell us something more about the practice which IKEA implements world-wide. How did it become so successful and popular in your opinion?

Irena Dobosz: One of the basic developmental principles of the IKEA company is sustainable development and we participate and support a large number of global initiatives that deal with this issue. In accordance with our concept of "democratic design" all of our products must meet this component and they are made of recycled materials or materials from renewable sources or they can be recycled. We invest significant resources and efforts in our own renewable energy sources. The wood that we use is certified and it is from renewable sources, as well as coffee, fish and seafood which are served in our restaurants. Similar efforts are being made when it comes to cotton. All the cotton used for our products comes from a few sustainable sources, which means that the producers who produce it use less water and pesticides than in conventional production. IKEA does not apply the principles of sustainability only in our business operations, but we also actively encourage our buyers to live their lives at home in accordance with the principle of sustainable development, and thus in our department stores they can purchase only LED light bulbs, which are compatible with our lightening assortment. We also offer a great number of products which save water, reduce waste etc. For us, the sustainability is not just a responsible attitude towards the environment but also towards the communities in which we operate. We implement a huge number of programs that are largely focused on the improvement of living conditions for children and families who live in difficult circumstances and who are affected by consequences of natural disasters or war conflicts. Just last year, the IKEA Foundation invested 104 million euros in these programs.

EP: What does the production process in IKEA's factories look like? Do you use renewable energy sources? Do you obtain electricity through solar panels? Can you describe to us standards which are respected in the operation of this company?

Irena Dobosz: The IKEA company is dedicated to performing business in accordance with the sustainability principles which are grounded on the strategy "IKEA People & Planet positive". The planning of our investments in the construction of buildings, whether commercial, business or manufacturing are in accordance with this strategy. We have invested 1,5 billion euros in our own renewable energy sources (solar power plants, wind generators) from 2009. Our goal is to achieve energy independency by 2020 by that is to produce the amount of energy that we consume. So far we have installed 700,000 solar panels on our department stores and other facilities world-wide. Numerous standards regulate technical solutions which will be implemented on our facilities. In addition to the construction of our own renewable energy resources (solar power plants on the roof of the facilities or the usage of geothermal energy), other key principles applied are the rational consumption of energy and resources through the application of new materials and technologies (for example LED lightening in the facilities, the use of sophisticated systems for planning and facility management, etc.), the use of renewable materials and waste management.

EP: IKEA is a Swedish brand, do you follow design and architectural solutions of Sweden and do you take good practice from the countries in which you operate?

Irena Dobozs: Clean, simple, humane would be the key words related to the architecture of the facilities and they also reflect the values on which the company was established. The style can be described as modern functional architecture, which shares the same values. This style is developed from the Swedish modern architecture and functionalist architecture from 1920s and 1930s, which are also by clean geometric forms, without decoration, planned by the principle in which form follows the function.

EP: Can you tell us in how many countries does IKEA operate in and what was the financial balance at the end of 2015?

Irena Dobosz: IKEA continuously records an increase on a global level. Last year we had an increase of 11% and at the moment there are 375 IKEA department stores in 28 countries, which achieved a turnover of more than 33 billion euros and 884 million visits. With its diverse business activities IKEA is present in 43 countries and the number of employees arose to 172,000 last year.

Interview by: Vesna Vukajlović

SKF Beyond Zero

SKF, a company from Sweden, is the world's leading manufacturer of rolling bearings. Within its priorities this company points out the protection of the environment. The strategy concerning the environmental protection is defined as SKF Beyond Zero. SKF with its 120 production plants around the world can't reduce the negative impact on the environment to zero, but with comprehensive activities in their own plants, in cooperation with their partners and through their products that are used all around the world it is possible to eliminate it completely.

BASIC COURSE OF ACTION IN IMPLEMENTING THE STRATEGY IS THE FOLLOWING:

1. The selection of suppliers who have a clear strategy for the environmental protection – goal: suppliers who are certified according to the ISO 50001 standard.

2. The selection of transportation companies which have a clear strategy for the environmental protection – goal: reduction of CO2 emission per kilometer for 30% in the period from 2011 to 2016.

3. The impact on their own actions in order to reduce the impact on the environment – goal: reduction of the energy use in their own factories for 5% per year.

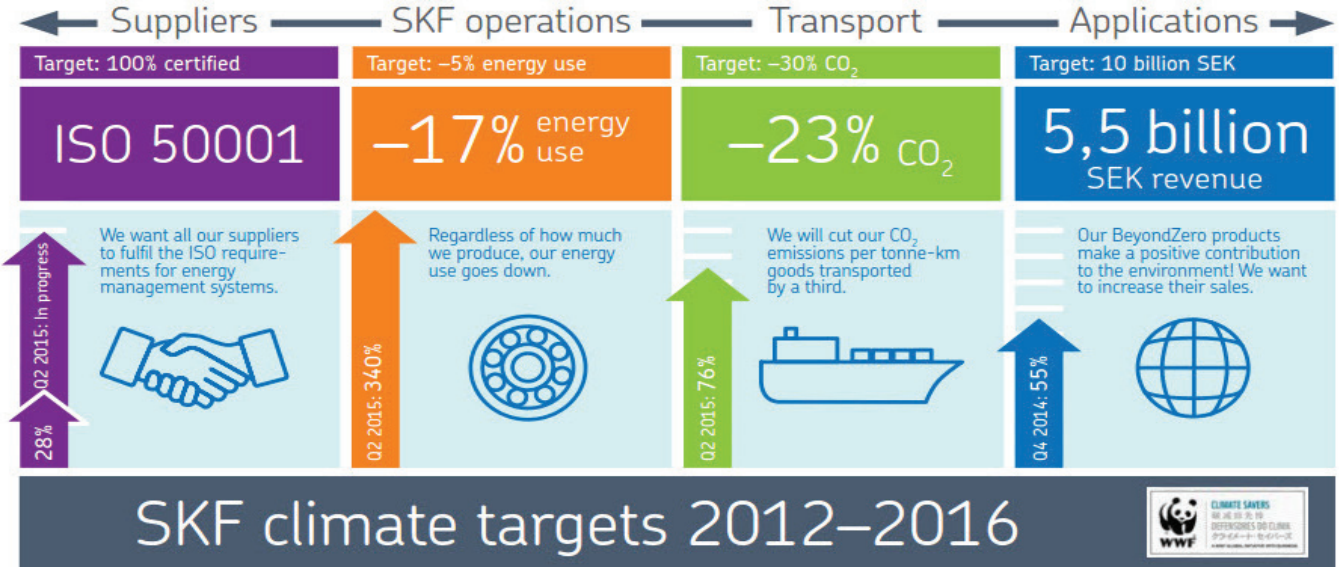
4. Commitment to the development and production of products and solutions that affect the reduction of negative impact on the environment – energy efficient solutions – goal: to increase the sales of energy efficient products.

CLIMATE STRATEGY

SKF's climate strategy focuses on the air pollution and increased emissions of CO2. CO2 is considered to be the most significant gas that causes greenhouse gas effect. The increased concentration is the result of our business activities. SKF's strategy is based on Beyond Zero creative model for the reducing negative CO2 emissions.

Based on numerous life-cycle analyses of our products and solutions, we have discovered that in the phase of usage we can make the most significant contribution to climate change mitigation. However, in accordance with Beyond Zero, we believe that it is our responsibility to use and combine knowledge, experience, impact and creativity in order to reduce the negative impact on the environment, which is the result of our production.

SKF has extended its actions outside the factory. We follow how much do transportation and logistics endanger the environment. In 2010 SKF committed itself to build new factories in accordance with internationally recognized standards LEED (Leadership in Energy and Environmental Design). Our new headquarters in the USA is the certified facility according to the LEED platinum certificate and it represents 1 out of 60 such facilities in the world. SKF factory in Russia also got Gold certificate last year and thus became the first of its kind in Europe. The factory's building now uses 40% less electricity for lightening, heating and ventilation. The consumption of water and energy is minimized. We should mention the factory in India in Mysore which is constructed in accordance with SKF's Sustainable Factory Rating and LEED requirements with the goal to obtain LEED Gold certificate.



TIKKURILA Ltd. Šabac – environmentally aware company, that thinks about the future of our environment

Tikkurila company as one of the leading, European companies in the production of coatings for walls and other surfaces on its way of development and permanent innovations strived to take care of the environmental protection. The company is turned to the future and thus it is important that all processes and products, for which it is responsible, meet the environmental aspect. This is the only way in which we can contribute to the environmental protection and longevity of our environment. The proof of our care and monitoring of environmental standards is also the possession of a large number of products in our portfolio that have EU Eco label. This label indicates that the products have reduced impact on the environment during their life cycle (from the raw materials extraction, production, usage and disposal). Also, by educating consumers on the market on the importance of the aqueous base in all paints and coatings we contribute to the environmental awareness and provide priority of this type of product, since this is the only way in which we can be sure that the mentioned coatings are environmentally friendly and with minimal impact on human's health and environment.

Environmental policy is a part of development strategy and organizational culture in Tikkurila Ltd, from Šabac. It is implemented by careful planning of environmental management, improvement programs management and adhering to regulatory requirements. With the help of training and control we maintain a high level of awareness of the necessity for the environmental protection of all our employees. Since we know that environmental protection can never be finished process, we strive to implement initiated activities and to define new projects of sustainable development within our annual goals. The assessment of scope, frequency and severity of their consequences is done for all activities that have, or that can have the impact on the environment. Important aspects are followed, proposed and measures that reduce their impact on the environment are conducted with the aim of continual improvement of the system for environmental management. Authorised organisations measure emission and imission in the air and the quality of waste water from Tikkurila Ltd from Šabac and they also do categorization and classification of waste. The monitoring results verify that the production processes are designed and managed in compliance with technical and operational characteristics of the set regulatory and/or internal requirements. The company has a plan to invest into waste water treatment in 2016.

TIKKURILA

Tikurila Ltd does not produce waste materials which are very dangerous for people and the environment, such as heavy metals or radioactive substances. Typical type of hazardous waste generated in paint industry represent paints with expired shelf life, raw materials and final products that do not meet quality requirements, packing waste of raw materials, solvents from washing plants and etc.

Waste prevention is the best way to protect the environment. Good waste management is always based on the reduction of the amount of waste using techniques to minimize its occurrence. In Tikkurila, minimization of possible waste generation is achieved by applying the latest technological solutions, optimal process management and highly trained personnel. The next important step for waste management is its classification and categorization. Collected and marked waste is disposed on a specially indicated places within the factory, until it is delivered to the appropriate service. Tikkurila Ltd, is developing a plan for rational management of energy and natural resources and it includes planning, organization, monitoring and taking measures to reduce their consumption. The criteria for the optimal usage of energy resources and water are established and the goals for reducing their consumption are set where possible, based on the information on performances and resources consumption trends, as well as comparative data on the production scope. We would like that our positive attitude towards the environment, that is our continuous improvement of our environmental performance, is respected and accepted by our suppliers, customers, shareholders and local community. Finally, the environment is something that we all want to preserve for future generations.

ATLANTIC GREEN
Opportunity to grow in harmony with nature

We are developing on the basis of maximum optimization of our processes

The basis of socially responsible functioning of each company is the fact that it becomes aware of the importance and necessity of its own impact on improving general social conditions and the environment in which it operates. This is the reason why the energy efficiency has become a permanent commitment and strategic scheme of the Atlantic Group to reduce the impact on the environment through the rationalization of energy and water consumption, decreasing of waste and increasing of waste separation, generally in all our processes.

Special projection was done in order to improve energy efficiency of the companies in Serbia and it was financed with the help of EBRD. This project was a part of a broader strategy to improve the system of all Atlantic Group's production processes and also to support the regional activities with more rational usage of resources and energy, cost reduction, and environmental protection. In addition to savings related to efficiency, it is expected that the planned investments in operating companies in Serbia will additionally reduce the CO2 emission for 600 tonnes per year.

Savings in the use of gas and electricity, as well as water consumption in production processes are enabled by investing in Atlantic Group's new equipment in Serbia. In particular, for plants in Serbia we have collectively reduced the energy consumption, from expended 75,539 MWh in 2012 to 53,140 MWh in 2014, which represent significant savings of resources and they go along with our general strategic setting to develop on the basis of maximal optimization of our processes.

Waste management and pollution prevention remains our permanent priority, and that is the reason why the amount of sorting and separation of waste was increased in the whole Atlantic system in 2014. The amount of recycled waste is increased for 8 percent compared to the previous year. We already recycle almost 50% of waste in Štark and Grand on an annual basis and there is a tendency that this percentage will continue to grow.

Other important environmental activities are carried out simultaneously in four key areas: integration of ecological perspective in all business areas and functions, integration of environmental values in exiting projects, a range of activities for raising of the ecological values of employees, and also the second year in a row, we report on sustainable Corporate Social Responsibility which are in accordance with GRI principles (Global Reporting Initiative).

ATLANTIC GREEN
Opportunity to grow in harmony with nature

ABB - Striving to reduce energy use and climate impacts

As part of ABB Group-wide sustainability objective to progressively increase the efficiency of our own operations, we have set ourselves the target to reduce the energy intensity of our business by 20 percent by 2020 from a 2013 baseline. This is measured as megawatt-hours (MWh) of energy per million US dollars of sales and includes both direct fuel consumption and the use of electricity and district heating for manufacturing processes and to operate buildings.

ENERGY EFFICIENCY IN OPERATIONS

During 2014, we recorded a 1.6 percent improvement in the energy intensity of our operations, resulting in energy consumption of 66.02 MWh per million US dollar sales. Absolute energy consumption declined by 6 percent year on year, driven by reductions in electricity and gas consumption and a significant decrease in district heating. Approximately one-third of the absolute energy reduction was due to business divestments during 2014, which primarily impacted Group electricity and gas consumption.

A wide variety of energy savings projects were implemented across the company to achieve our 2014 result. More than 200 individual energy efficiency projects were reported across the Group, estimated to result in 34.4 GWh of energy savings.

Most commonly – and cost effectively – facilities implemented energy-efficient lighting solutions. Other activities included optimizing heating, ventilation and cooling processes, investments in more efficient equipment, investigating and optimizing compressed air systems, behavioral change programs, and implementing or updating heat recuperation from machines and processes, often using our own technology. Some actions were as simple as reducing the temperature of a varnish oven, which not only reduced energy consumption at our facility in Ozark, Arkansas in the US, but also saved over $24,000 during the year.

Other activities were planned as part of multi-year, facility-wide or country-wide programs. For example, our plant at Ludvika in Sweden – one of our top five energy intensive facilities with more than 2,800 employees on-site – undertook a systematic review of energy consumption during 2013. With cross-functional coordination between real estate, environment and production engineering, they began a step-by-step improvement plan that is continuing into 2015. Measures taken so far include upgrading lighting systems, repairs and upgrades in the compressed air systems, installation of energy metering, introducing timers on drying ovens and significant training for employees. The program is already showing results and is even exceeding expectations in some projects, such as installation of LED lighting and sensors. With further activities planned for 2015, including installation of heat recovery in the painting area, additional energy metering and further lighting upgrades, we expect to see increasing savings in future.

REDUCING CARBON INTENSITY OF ENERGY

As well as working to improve the efficiency of our energy consumption, ABB also seeks to reduce the carbon intensity of our energy sources. Several ABB countries – Belgium, Netherlands and United Kingdom – have decided to purchase all of their electricity from renewable sources. Thomas & Betts plants in these countries will also join these

programs as their current contracts reach expiration. In Sweden, almost 20 percent of electricity purchased was "green" energy, while globally, more than 4 percent, or 68 GWh, of ABB's 2014 electricity was purchased as certified "green" electricity.

During 2014, two more ABB facilities in Egypt and Australia installed on-site photovoltaic (PV) power plants to reduce environmental impacts as well as to demonstrate ABB's solar capabilities. PV plants are now installed at 22 sites in 13 countries across Asia-Pacific, Latin America and Europe. While contributing only a small proportion of our global electricity needs, these plants are often a key part of local energy strategies, designed as a reminder to employees of ABB's energy efficiency and low carbon commitments.

WATER REDUCTION COMMITMENT

Although the majority of our manufacturing processes do not consume significant amounts of water, ABB is nonetheless committed to reducing our impact on local water resources.

Our Sustainability Objectives 2014-2020 expanded the scope and quantified this target. We are committed to reduce absolute water use by 25 percent by 2020 at facilities in water stressed, water-scarce and extremely water-scarce watersheds, compared to a baseline of 2013. The initial focus will be on 30 selected facilities. In 2014, more than 50 percent of ABB's water withdrawals were used for cooling processes, almost 30 percent for domestic purposes such as sanitation, cooking or garden maintenance and the remainder for manufacturing processes.

Of those sites that use water for process purposes, more than 30 percent use closed-loop systems. Excluding cooling water returned to the source of extraction, the use of closed-loop processes and the reuse of water in other ways saved approximately 5,200 kilotons of water in 2014. Without this recycling and reuse, ABB's water withdrawals would have been more than 50 percent higher.

Waste and recycling

ABB products contain mostly steel, copper, aluminum, oil and plastics, and the majority of this material is reclaimable at the end of the product's life. We enhance the ability to recycle by designing products that can be dismantled more easily and by providing users with recycling instructions.

Consequently, the main waste streams at ABB facilities are metal, oil and plastic, as well as wood and cardboard from packaging materials and paper from office activities. We aim to optimize material use and increase the share of waste that is reused or recycled.

There was a nine percent decrease in total waste generated in 2014 compared with 2013. The majority of this is due to business divestments during 2014. Due to the significant amounts of scrap metal and non-hazardous waste reported by those businesses in 2013, we consider that approximately 100 percent of the observed reduction in scrap metal, 70 percent of the reduction in recycled non-hazardous waste and over 35 percent of the reduction in non-hazardous waste sent for disposal in 2014 was due to the impact of the divestments. The divested businesses reported negligible hazardous waste and on-site recycling in 2013.

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Energy portal of Serbia wants to thank Nordic Business Alliance for support and invitation letter for members of alliance which inspired companies to take part in preparation of this magazine. We are happy that NBA recognize importance of topic such as responsibility of companies and environmental protection.

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