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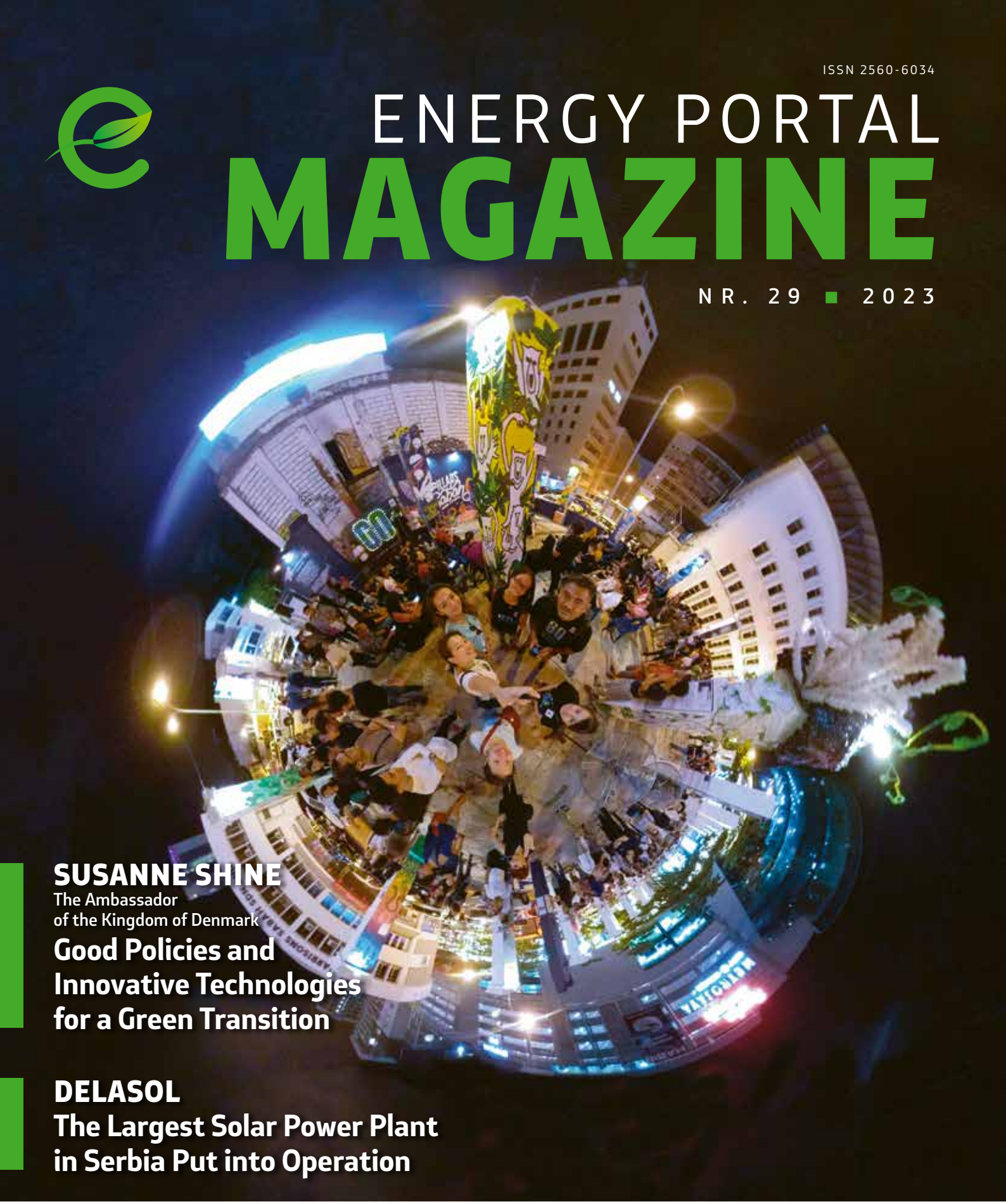

SUSANNE SHINE
The Ambassador
of the Kingdom of Denmark
Good Policies and Innovative Technologies for a Green Transition

DELASOL
The Largest Solar Power Plant in Serbia Put into Operation

VOLVO

TOWARDS ZERO CO2

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Dear readers,

This time I will skip the usual announcement of our new texts and share what I have been thinking about these days.

It is not easy to understand all the changes happening in our environment, society, and the world. We can only have a certain influence on a small part of those events; everything else is completely out of our reach. However, this does not mean that I want to spread any despondency. On the contrary. I believe it becomes even more important how we relate to everything that happens around us. Maintaining calmness and clarity of thought is difficult when most information serves almost exclusively to unsettle us. It is very difficult not to allow that special type of pollution not to spill over into our personal lives and the people in the immediate environment.That is exactly why I want to emphasize the importance of understanding and supporting individuals and organizations trying to bring good changes to our society. Considering the determination of our editorial staff towards green topics, we try to write about those dedicated people who, through their involvement, change our attitude towards resources, nature and, finally, the whole community. Therefore, instead of recommending what you must read in the new issue of the magazine you have opened, I suggest you pay attention to where your thoughts go while reading the following texts. Do you think about what our interlocutors faced when trying to design a new ecological product, introduce a new, more efficient way of working or send an appeal to the public to preserve rivers, resources, and clean air? If you didn't consider this before, try to look at the time, effort, and personal resources they invested, especially all the possible resistances, so characteristic and unnecessary, that they had to overcome. The least we can do is respect their efforts and noble cause. Everything starts from that. That's where the difference is made. The prerequisite for any development is appreciation.

Let it be a new angle of reading and observation.

Nevena Đukić

Nevena Đukić,
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Good Policies and Innovative Technologies for a Green Transition

We are honored to be at the top of the Environmental Performance Index. Most Danes prioritise environmental protection, and "green living" has become an integrated part of everyday life in Denmark. I am proud that my country is leading in this, says the Ambassador. Getting to this position has not been an easy accomplishment, but it is something that has been built over generations.

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The Largest Solar Power Plant in Serbia, *DeLasol*, Put into Operation

About 8.9 million euros were invested in the solar power plant *DeLasol*, built in the municipality of Lapovo on an area of 12.5 h, and the complete works, from the idea, plant design and construction, were performed exclusively by our experts and domestic companies. *DeLasol* will make a great contribution to the energy system of Serbia. On an annual level, it will produce 15,000 megawatt-hours of electricity, reduce CO_2 emissions by more than 11,000 t and contribute to improving environmental protection.

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Photographs: (Shine) Nenad Kostić; (Kostić) MT-KOMEX

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Photographs: (Krstović) NALED; (Arežina) courtesy of Vera Arežina

GOOD POLICIES AND INNOVATIVE TECHNOLOGIES FOR A GREEN TRANSITION

Meet the smallest country in Scandinavia. In it, almost every resident, and there are 5.8 million of them, not only owns a bicycle but also rides it every day, and 11,000 km of bicycle paths are at their disposal. In its capital, during the summer, you can see bathers cooling off in the crystal-clear sea water in the nearby harbor. As if the multitude of islands that this country is proud of were not enough, they decided to create new, very special, energy islands. To that, they added climatic and ecological parks. We present to you the green achievements of the Kingdom of Denmark through a conversation with Susanne Shine, the ambassador of this country in Serbia.

EP ***The Kingdom of Denmark ranks first in the EPI list (Environmental Performance Index). Does the progress in preserving the environment and nature affect the strengthening of the feeling of happiness since the Kingdom of Denmark has been considered one of the happiest countries in the world for years?***

Susanne Shine We are honored to be at the top of the Environmental Performance Index. Most Danes prioritize environmental protection, and "green living" has become an integrated part of everyday life in Denmark. As a Danish ambassador, I am proud to see Denmark lead the way.

Getting to this leadership position has not been an easy accomplishment, but it is something that has been built over generations. Besides having a highly developed educational and research ecosystem in Denmark, one of the keys

to reaching this position lies in the cooperation between crucial private and public stakeholders in sustainable development. Through close cooperation, we dare to set ambitious climate change and environmental protection goals. It means that good ideas are quickly reflected in policies and regulations, that private and government investments support them and that they enjoy essential public support.

Regarding our happiness, I do think it is a big speculation to draw a straight line from the green transition to a country's overall happiness. However, in the past decades, we have focused on the restoration of wild nature and on including more nature in our cities. Maybe it does have an effect? Perhaps having more trees and green areas to look at in the cities can actually make people happier.

EP ***On the other hand, according to Footprintnetwork, during one year, you use up four to five annual resources of the planet Earth. In what way are you trying to change this?***

Susanne Shine Despite our high rankings in the various indexes, we recognize that there is still a long way to go, and we still have many environmental challenges to overcome. Consumption is increasingly becoming an important political issue, and the government, civil society, and the public are taking more determined steps to combat it. One success within this area is our recycling system for bottles and cans, which has worked flawlessly for years. Another positive step is a new collection system that will more effectively separate household waste and increase recycling. Relatedly, a tax on the use of plastic bags in all shops was implemented a couple of years ago. It has already reduced plastic bag use and helped make consumers more conscious of their environmental footprint.

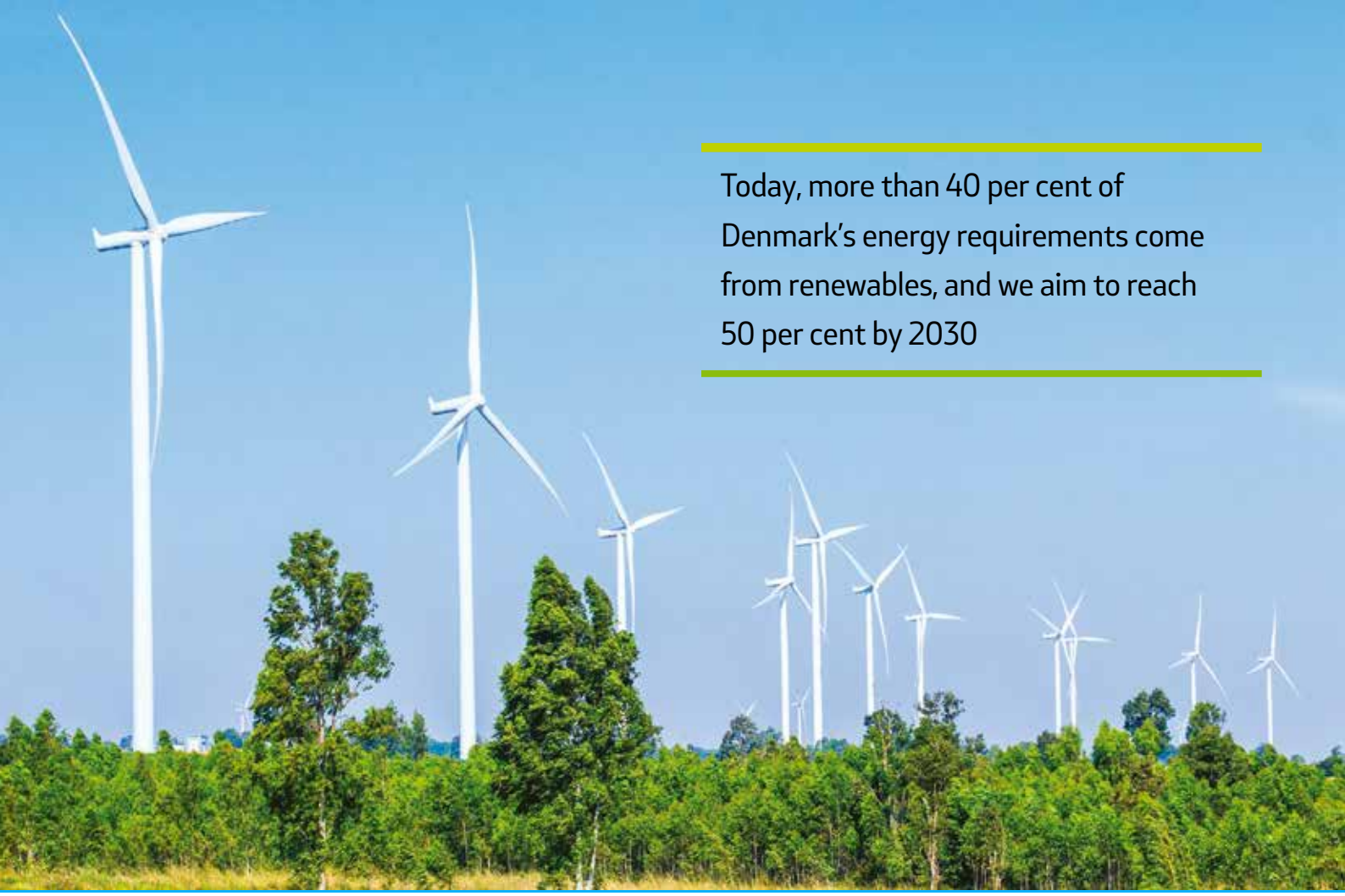
Susanne Shine,
The ambassador of the Kingdom of Denmark in Serbia

The energy islands signal a new epoch in the use of offshore wind energy

Our new Danish government has announced more ambitious climate change targets, proposing to reach net zero by 2045. To help meet those goals, the government, among other things, plans to roll out an emission tax on the agriculture sector and a tax on air travel.

Even though Denmark only accounts for around 0.1 per cent of global greenhouse gas emissions, we are determined to lead by example. We want to show the world that developing replicable and scalable ways to protect the planet while maintaining a prosperous, socially cohesive, and just society is possible. An important aspect of this is

Photographs: (pozadina) Pixabay/SvitlanaRom; (Shine) Nenad Kostić



> Today, more than 40 per cent of Denmark's energy requirements come from renewables, and we aim to reach 50 per cent by 2030

our government-to-government energy partnerships with 19 nations representing more than 60 per cent of global greenhouse gas emissions, including China, the U.S. and India.

EP ***How would you rate the importance of projects such as the Amager Bakke Recycling Center and the waste-water treatment plant on the island of Zealand?***

Susanne Shine These are two really fantastic projects. Amager Resource Centre (ARC) produces district heating and electricity for citizens in the Copenhagen region. Every year, it turns almost half a million tonnes of waste into electricity and district heating for some 140,000 households. It provides the opportunity to establish a circular economic perspective, where waste becomes a useful resource instead of a burden. Also, ARC is located in Copenhagen's port and industrial area, which has undergone many changes over the past years. Surrounding ARC, the port area has become an extreme sport destination for thrill seekers with different sports activities in the deserted industrial facilities. So in designing ARC, the machinery was built to generate a slope that now serves as a skiing terrain. The project replaces an old waste incineration plant and is part of a municipal initiative to achieve carbon neutrality in Copenhagen by 2025. ARC is set out as a next-generation waste-to-energy plant that is economically, environmentally, and socially sustainable, and where industrial needs are combined with urban leisure to let citizens become part of the process.

Solrødgård Climate&Environmental Park is another interesting project. This park aims to create a closed circular system where preserving nature becomes an integral part of our life.The 50-hectare park includes a new headquarter for Hillerød Utility Company, a waste-water treatment plant and a recycling centre. The park transformed 50 hectares of farmland into a hilly and publicly available landscape with winding streams and wetlands that

Photographs: (top) courtesy of Ambassy of the Kingdom of Denmark; (bottom right) Pixabay/Flemming Andersen

catch rainwater and provide habitats for animals, fish and birds. Visitors can learn close-up about the different supply and resource circuits that are part of our ecosystem – and at the same time, experience bats, lapwings and birds of prey in their natural habitat. The climate and environmental park is a place where technology and recreation can be experienced in close and unusual cohabitation. The park offers a unique possibility to play and learn in a landscape where the supply circuits of water, energy and materials are prominently displayed as attractions.

EP ***You have a clear plan to reduce greenhouse gas emissions. What does it include?***

Susanne Shine This ambition of ours is one of Denmark's most important political goals, and we are working across all levels to achieve it. For example, Denmark has introduced a corporate carbon tax, which means that by 2025, companies will pay around €150 per ton of emitted CO_2. The aim of the tax is to reduce the total carbon emissions by around 4.3 million tonnes of CO_2 by 2030.

Also, within the agricultural and food sector, we have a strong track record for resource efficiency. While production output has increased by almost a third since 1990, greenhouse gas emissions have declined by around 16 per cent in the same period.

There are many other examples, but these few examples show that not only are we in Denmark able to develop world-class technologies, but we are also able to sustain the green transition by ensuring the right policies and regulatory framework.

EP ***You are leaders in constructing offshore and onshore wind farms. However, is wind the only way to obtain electricity exclusively from renewable sources by 2030?***

Photographs: courtesy of Ambassy of the Kingdom of Denmark

Susanne Shine Both Denmark and the EU have established strong climate targets. Striving to become climate neutral by 2045, Denmark aims to reduce its greenhouse gas emissions by 70 per cent by 2030 (compared to 1990 levels) and to meet its entire electricity needs with renewables by the same date.

Our expansive plans for offshore wind combined with aggressive climate targets signal that offshore wind energy will become the backbone of our energy system. Denmark, which has always been a pioneer in the use of offshore wind energy, having constructed the world's first offshore wind energy farm in 1991, is currently in the process of constructing three new offshore wind farms that will be operational by 2030.

Today, more than 40 per cent of Denmark's energy requirements come from renewables, and we aim to reach 50 per cent by 2030. Last year was a record year for green energy production in Denmark. And though wind remains an integral part of our electricity production, it is not the only source. In 2022, 48 per cent of our electricity came from wind power, 16 per cent from biomass and 6 per cent from solar. On certain windy days, wind turbines can actually produce more than 100 per cent of our electricity needs. Over the past 15 years, the use of coal has dropped by 83 per cent and natural gas by 50 per cent. An important but often overlooked aspect is the importance of the infrastructure surrounding wind turbines and solar panels. In Denmark, we have one of the world's most flexible and stable electricity grids, ensuring that we have 99.99 per cent security of electricity supply.

EP ***The Kingdom of Denmark was among the first to propose the introduction of a complete ban on the sale of cars with IC engines. How is your transition to electromobility progressing?***

Susanne Shine Things are moving forward. The European Parliament just recently – in February 2023 – voted for a landmark regulation intended to push the EU closer to delivering on its target of reducing greenhouse gas emissions by 55 per cent in 2030. Still pending formal approval by the Council, the regulation would ensure that by 2035 no new cars emit CO_2.

In Denmark, our ambition is to have one million electric and hybrid cars on the roads by 2030. In 2022 the total number of electric cars in the country shot up by 70 per cent to over 112,000 compared to the previous year. Electric and plugin hybrid cars accounted for 38 per cent of new cars sold in 2022. Currently, electric cars make up 7.7 per cent of the 2.8 million cars in Denmark.

However, it is not enough to only sell more electric cars – you also need infrastructure supporting the transition. Denmark has, over the past decade, invested in the establishment of proper infrastructure to handle a growing number of electric cars, which includes charging stations all around the country – to ensure that you can travel long distances without having to worry about running out of power. In bigger cities, for example, new parking rules favour electric vehicles with reserved spots and lower fees.

EP ***In 2021, the Kingdom of Denmark approved a plan to build the world's first energy island. Can you tell me more about this project?***

Photograph: Pixabay/12019

Susanne Shine The concept of the energy island was first introduced by the Danish government in 2020 as part of its Climate Plan. The plan's most notable and ground-breaking feature was the announcement to establish the world's first two energy islands by 2030. While offshore wind farms up until now have functioned as individual entities that supply electricity to one specific region or country, energy islands will serve as a hub for electricity generation from multiple offshore wind farms.

Basically, the energy islands will be able to produce hydrogen, which can be used in the transportation sector and energy sector. When talking about renewable energy, one of the main issues with wind and solar is how we store the surplus energy produced on windy or sunny days. On a technical level, the energy islands will include cutting-edge Power-to-X technology (or PtX). PtX uses surplus energy from wind turbines to transform water into hydrogen through electrolysis.

> Over the past 15 years, the use of coal has dropped by 83 per cent and natural gas by 50 per cent

This hydrogen can then be stored and used to produce fuel for the shipping industry or to support the grid when wind turbines do not produce enough power. That will enable Denmark to diversify its energy sources, so our electricity supply is less dependent on how the wind blows.

One of the islands, which will be located in the North Sea, is to take the form of either an artificial island or a platform that will need to be constructed. Serving as a hub for offshore wind farms, the island will encompass a total capacity of 3 GW and potentially up to 10 GW in the future. Once completed, the island is intended to supply Denmark and the Netherlands with green electricity. Currently, feasibility studies are underway to select the optimal location of the island in the North Sea.

Furthermore, the energy islands will allow for more efficient utilization of far offshore wind resources and thus create room for significantly more offshore wind in the Danish and European energy system. In addition, it can contribute to reducing investments in transmission cables and grid reinforcements on land.

The energy islands will be the largest infrastructure project in Danish history. From a European perspective, the energy islands signal a new epoch in the use of offshore wind energy, where offshore wind farms are no longer national projects but instead examples of transnational cooperation.

EP Serbia is on its way to becoming a member of the European Union. What advice would you give us to cross that road as quickly and easily as possible?

Susanne Shine Denmark has been a member of the European Union for 50 years now. As a Danish citizen, I see how much membership has meant for Denmark and the development of Danish society. Apart from our fundamental values included in the Copenhagen Criteria, such as democracy and the rule of law, another important aspect of the EU is our focus on the green transition. Implementing necessary reforms enabling the green transition in Serbia would bring Serbia closer to EU membership and increase the quality of life for all Serbians.

Implementing great changes is neither quick nor easy. It requires political will, but it also requires that the broader society gets involved. This is why cooperation is needed, not just across countries but also within. As an example of this type of cooperation in Denmark, I would like to highlight the Danish non-profit 'State of Green' – a public-private partnership owned by the Danish state and three leading Danish business associations. State of Green brings together more than 600 Danish businesses, agencies, academic institutions, experts, and researchers working to drive the global transition to a sustainable, low-carbon, resource-efficient society.

I am confident that Serbia has the necessary skills and knowledge to solve these issues. The next step is to engage different stakeholders in cooperation – in order to understand how to bring good ideas into operation. With the purpose of engaging with Serbia on its green path, the Nordic countries recently finalized our 'Nordic Green – Solutions for Serbia'- project, through which each of the Nordic countries shared their own experience and expertise in different sectors, such as sustainable agriculture and industrial processes, renewable energy, and waste recycling. This project – combined with the many Danish energy companies that are increasingly looking to Serbia to invest – shows the vast potential for Serbia to progress on this path.

Intervieved by: Milica Radičević

Photograph: Unsplash/Rahbek Media

A DEPOSIT SYSTEM WOULD MOTIVATE PEOPLE TO RECYCLE

All NALED projects aim to pilot modern solutions and provide reliable insight into how the management of food, packaging and hazardous waste flows would look if the related solution were to be systematically adopted and implemented throughout the country.

In collaboration with the Serbian government and line institutions, The National Alliance for Local Economic Development (NALED) participates in the working groups working on amending regulations, especially the amendment to the Law on Packaging Waste. In cooperation with the business sector, NALED prepares analyses that justify implementing a deposit system for packaging returns. They also supported the development of the Circular Economy Development Programme and implementing measures stated in the relevant Action Plan.

They hired the renowned British company Eunomia to research the continuation of waste collection in Serbia. Two studies were made on the back of the results of collection based on the existing 'polluter pays' principle, as well as on the goals that would be achieved if a deposit system were implemented, which is a method of returning packaging to stores and getting a partial refund for the money paid when purchasing the product. The analyses were done on a neutral basis to arrive at solutions that are best for the overall country, not individuals.

We spoke with Slobodan Krstović, the Sustainable Development Director at NALED, about improving the environment for further developing the green economy in Serbia, European regulations, measures for proper waste disposal and plans for improving environmental protection.

EP ***What are the key steps for making significant progress towards a healthier environment in our country?***

Slobodan Krstović In terms of waste management, it is important to continue developing primary selection and constructing regional landfills where waste would be properly

stored, but also implementing new technologies such as a deposit system, which would motivate people to care more about recycling. It is also necessary to continue with the construction of the sewage grid and waste treatment plants because, for the past several years, less than 10 per cent of wastewater in Serbia has been treated, while the largest cities such as Belgrade, Niš, and Novi Sad do not have a single waste treatment plant. Communal and industrial wastewater is discharged directly into rivers. If we want cleaner air, we need to replace coal with other energy sources and invest in cleaner technological solutions in the industry and at home, which are all the basis for a healthier future. One of the measures that NALED advocates is higher fees for large polluters because the current fee calculation system does not motivate them to reduce the number of pollution particles they emit.

EP ***What are the possibilities for establishing a functional Green Fund in Serbia as an important instrument for financing environmental projects?***

Slobodan Krstović NALED recognizes the importance of forming the Green Fund to ensure the transparency and sustainability of financing environmental protection projects.

NALED will again be a member of the jury that will choose the best Eco-Municipality this year. We would like to invite all local communities and schools to apply for the competition, which is open until June 30

Photographs: Naled

SLOBODAN KRSTOVIĆ graduated from the Faculty of Economics and got his master's degree from the University of Belgrade's Faculty of Law. He received training at a seminar on commercial trade and environmental challenges in developing countries, which was held in Beijing, and at a sustainable development seminar in Venice. Since 2010, he has been a member of the NALED team as a project manager and economic analysis associate. Slobodan Krstović coordinated and participated in the implementation of a number of projects on the topic of public finance, fiscal policy, environmental protection and public policies at the local and national levels. He is a co-author and collaborator in numerous studies and analyses related to regulatory reform and assessment of the quality of the business environment.

The new edition of the Gray Book again recommends an operational Green Fund be established, as a completely functional body that will serve projects oriented towards environmental protection, with a clearly defined legal framework and budget. Efforts are also being made to boost the capacity of public administration in matters pertaining to the environment at both the local and national levels and to change pollution fees.

EP ***What should be done to raise the awareness of both companies and individuals about the importance of proper waste disposal in Serbia?***

Slobodan Krstović Companies should be able to make proper waste disposal more profitable than simply taking it to landfills. It can be done by higher fees for this service and having certain incentives. Individuals should be assured that the state and local governments are implementing all required environmental measures so that they develop better habits. If people see that waste is properly collected and treated, they will be motivated to separate household waste. Special containers must be more accessible, and there should be significantly more near every residential building or house. In the research carried out under the auspices of the "Management of Glass Packaging in the Western Balkans" project, the research participants said that having incentives in the form of discounts on the next purchase or on utility bills, as well as being entitled to refunds when taking packaging back to shops, would motivate them to start sorting waste.

EP ***What waste management projects has NALED launched with partners in an attempt to find systemic solutions to this problem? What results have you achieved?***

Slobodan Krstović Our projects have focused on managing food waste, batteries, light bulbs, and glass packaging. The piloting of a smart packaging waste collection system in Zrenjanin using the latest technologies is currently underway. In this way, we collected more than 1,300 tonnes of food waste and installed 1,400 recycling containers for glass packaging in Serbia and the region. We started collecting hazardous waste at public locations in our country for the first time in our country, Kragujevac and Belgrade.

It is also necessary to continue constructing the sewage grid and waste treatment plants because, for the past several years, less than 10 per cent of wastewater in Serbia has been treated

WATER FILTERING

For Serbian legislation to be fully harmonized with European legislation, companies need a lot of training and guidance and a certain period to adopt and implement that legislation.

"The plan is for all small businesses and companies that discharge wastewater to build wastewater filtering facilities by the end of 2025. Such facilities aim to return completely filtered industrial wastewater to rivers to reduce the negative impact", says Mr Krstović.

These are the small steps we have taken to indicate the required systemic solutions in these areas, which must be adopted at the institutional level. Waste disposal fees need to be higher to make it more profitable to send packaging waste for recycling rather than ship it to landfills. Incentives should be provided for establishing a collection system and exporting batteries and light bulbs because building a recycling plant is unprofitable at this time. Proper collection and storage of a kilogramme of batteries currently cost 4 euros.

LACK OF FINANCES

Some companies are aware of the problem with wastewater and have shown interest in cooperating and building wastewater filtering plants. Financial resources are a limiting factor for a large number of them.

"Under the auspices of the Environmental Protection Alliance, NALED has established a water management sub-group. The Environmental Protection Agency maintains National Registers of Pollution Sources, but there is a problem of inadequate reporting by public utility companies. As part of one of our projects, we created a Guide that clarifies the legal obligations and steps for the construction of filtering plants", Mr Krstović concludes.

Incentives should be provided for establishing a collection system and exporting batteries and light bulbs because building a recycling plant is unprofitable at this time

The solution we proposed for regulating special waste flows under the auspices of the Proper Management of Food Waste project is that all catering establishments that serve more than 50 meals a day have to separate waste properly. In cooperation with the EsoTron Company and with the support of the German Development Cooperation (GIZ) organization, we have created a Guide containing precise instructions which can facilitate this practice.

EP ***NALED has been a partner in the Eco-Municipality project for the second consecutive year. How can the project improve sustainability solutions in cities?***

Slobodan Krstović The Eco-Municipality project, which results from the cooperation of the French Embassy and partners from Serbia, aims to highlight examples of good practices of local communities related to improving the quality of the environment through improving the quality of water and air and boosting cooperation. The relevant competition, in which municipalities and cities can participate, consists of four segments – water management, energy efficiency, waste management and urban mobility. In addition to local communities participating, there is also a fifth segment called the Green School that allows teachers and children to participate in the competition. NALED will again be a member of the jury that will choose the best Eco-Municipality this year. We would like to invite all local communities and schools to apply for the competition, which is open until June 30. The winners will have the opportunity to French cities to see the best solutions and technologies that can potentially be replicated in Serbia.

EP ***What are NALED's concrete plans regarding environmental protection and sustainable development promotion this year?***

Slobodan Krstović Our focus in 2023 remains on waste management, further development of municipal waste's primary selection, and improving the packaging waste management system.

This year will also be devoted to implementing measures from the Circular Economy Programme, which was adopted at the end of last year, and refer to the implementation of green criteria in public procurement. For now, and in cooperation with the line Ministry and the State Public Procurement Office, a total of five guides have been prepared for the implementation of green criteria in construction, i.e. reconstruction of public buildings, paving streets and roads, procurement of environmentally friendly vehicles, office supplies and public lighting. We will continue to increase the number of cases to which green criteria can be applied. One recommendation says that, over time, applying these criteria should become a legal obligation of the contracting authority in at least 20 per cent of the purchases they make.

Interviewed by Mirjana Vujadinović Tomevski

THE LARGEST SOLAR POWER PLANT IN SERBIA, *DELASOL*, PUT INTO OPERATION

DELASOL

The largest bifacial solar power plant on earth, *DeLasol*, with a capacity of 9.913 MW, was commissioned in early April. It was built on the territory of the municipality of Lapovo on an area of 12.5 hectares. It will produce 15,000 megawatt-hours of electricity annually. Its size is also reflected in the number of solar panels – as many as 17,980 state-of-the-art panels, with 650/655Wp power generation capacity, manufactured by the renowned *Canadian Solar*.

Bifacial solar panels were used to construct this solar power plant, which can yield electricity from both sides of the panel, which is why they generate a larger amount of electricity. The solar panels are placed on a specially-made construction that allows greater absorption of reflected radiation.

8.9 million euros were invested in the *DeLasol* solar power plant, and the complete work, from the idea, plant design and construction, was performed exclusively by our experts and domestic companies. *DeLasol* will make a great

The *DeLasol* solar power plant is an example of how, by using solar energy, we can simultaneously improve the electricity supply's security and environmental protection

Photographs: MT-Komex

contribution to the energy system of Serbia. On an annual level, it will reduce CO_2 emissions by more than 11,000 tons and contribute to improving environmental protection.

The ceremonial commissioning of the power plant was attended by Dubravka Đedović, Minister of Mining and Energy, Igor Anić, President of the Executive Board of ProCredit Bank, and Miloš Kostić, the investor.

"Cooperation and synergy between the public and private sectors are important for greater security of supply and for a successful green energy transition. Apart from the fact that some large projects backed by the state are coming to an end and new ventures are starting, we must have ambitious and large projects implemented by the private sector. The *DeLasol* solar power plant is an example of how, by using solar energy, we can simultaneously improve the electricity supply's security and environmental protection," said Minister Đedović.

As she emphasized, the state's task, which is intensively worked on through the adoption of regulations and the preparation of strategic documents, consists of creating the conditions for constructing new power plants from renewable energy sources. At the same time, our energy system performs its basic task: a safe supply for citizens and the economy.

The minister added that the amendments to the Law on the Use of RES when adopted by the parliament, will enable the implementation of auctions for market premiums for producers of energy from renewable sources, which

opens the way for us to increase our solar and wind capacities by about three times in the next few years.

"We had the challenge of building a solar power plant that, according to the new legal procedures, allows anyone who wants to produce electricity to enter the open market. Behind us is a turbulent time regarding markets and prices, but we managed to build a power plant and sign a contract with a domestic supplier who supported this project with a four-year contract. We will start the construction of another 10-megawatt power plant at this location during the year, and we plan to build more solar power plants in the coming years, which will contribute to reducing harmful gas emissions and improving living conditions. I hope that with our joint efforts, we help the Republic of Serbia and achieve the goal of getting 40 per cent of our energy from renewable sources by 2040," said Miloš Kostić.

8.9 million euros were invested in the *DeLasol* solar power plant, and the complete work, from the idea, plant design and construction, was performed exclusively by our experts and domestic companies

According to Igor Anić, ProCredit Bank is proud to have participated in this project.

"*DeLasol* is a role model for other investors who understand the topic of sustainability and are determined to put it into practice. ProCredit Bank is the ideal financial partner for such businesses because we have decades of expertise in energy efficiency, and more than 500 million euros invested in our clients' green projects. We understand, live, promote and finance this topic. It is a very important part of our business strategy today and in the future," said Anić.

A reliable construction partner

The construction of the *DeLasol* power plant was entrusted to the company MT-KOMEX, the leader in the construction of solar power plants in our country. During three decades of business, it has built and delivered equipment for 180 solar power plants on the ground and on roofs, the total installed power of which is 60 MW.The hard workers of this company, more than 130 engineers and installers, are in charge of introducing new areas of business on the domestic market. The company's employees regularly attend specially prepared trainings and have all the necessary certificates. This collective stands out for its willingness to always provide clients with full support in all project phases, from the development stage to the preparation of documentation for technical acceptance and obtaining a use permit on a turnkey basis.

During three decades of business, it has built and delivered equipment for 180 solar power plants on the ground and on roofs, the total installed power of which is 60 MW

At MT-KOMEX, they believe that solar energy is the right solution for achieving energy independence, and that's why they work hard to build solar power plants. They are determined to help achieve the share of RES of 40 per cent by 2040, which was set by the Government of the Republic of Serbia. The sustainability of the *DeLasol* power plant is also reflected in the fact that the land under the panels will be used in the best way. In the following period, the flock of sheep is expected to be released to the "solar" pasture. This decision will support the needs of farmers for areas for grazing animals, considering that such areas are becoming fewer and

fewer. Here, in turn, they will maintain the green areas around the power plant completely naturally. Grazing reduces the need to use lawnmowers that require electricity or fuel.

Prepared by Milica Radičević

THE IMPORTANCE OF THE SUN – AN INEXHAUSTIBLE SOURCE OF CLEAN ENERGY

Did you know that World Sun Day is marked in May worldwide? The idea originates from the 1970s. A great need for the development of renewable energy sources was recognized even back then, and the best ways of using the Sun as an inexhaustible source of clean energy were sought. The goal remains the same to this day. Technology has advanced, but there are still challenges that require solutions. The use of solar energy is one of the most important topics, especially after last year's energy crisis caused by the war in Ukraine. It has become a symbol of the fastest way to save money and become self-sufficient in energy. The Renewable Energy Sources of Croatia (OIEH) business association has also worked on this issue, bringing together companies producing energy from renewable sources, as well as the rest of the RES industry, on May 25 and 26, 2023, in Bol on the island of Brač, for the SUNNY DAYS international conference. European organization SolarPower Europe is the conference sponsor, with the organization's director, Walburga Hemetsberger, participating in the conference.

The SUNNY DAYS conference aims to find opportunities and ways for more efficient use of solar energy and more intensive development of solar-based projects through joint discussions, transfer of know-how and exchange of experiences. Representatives of ministries, energy institutions, the academic community, equipment manufacturers, the banking sector, investors, districts and local communities and civil society organizations will actively participate in this event. They will jointly analyze the obstacles and propose the best solutions.

SUNNY DAYS are intended for everyone whose activity and interest are directed towards realizing the great potential of insolation in the regional countries because it is also a good foundation for balanced regional development. At the European level, solar energy unites the goal of achieving carbon neutrality by 2050. It is an indispensable part of the Green Deal, National Climate and Energy Plans, National Recovery and Resilience Plans, and the RePowerEU plan of the European Commission.

At the conference, they will also discuss the role of public policies in the stronger development of solar projects and the importance of spatial planning for solar power plants. These go-to areas should represent locations for faster development of RES projects, the benefits of solar energy projects in agriculture, hybrid systems for storing produced energy, financing new projects and the important role of local communities.

With this conference, OIEH wants to contribute to initiating positive changes and encourage faster elimination of obstacles and easier implementation of solar power plant projects. Through joint discussions, OIEH intends to promote the development of a clearer and better approach in preparation for better fulfilment of solar energy's great potential.

Source: OIEH

Photographs: OIEH

SUNNY DAYS

25–26 May 2023
Bol, island Brač, hotel Elaphusa

- The role of public policies for stronger deployment of solar
- Solar regional overview
- Energy challenges in industry
- Energy production at the point of consumption
- Go-to areas for the rapid deployment of solar
- Agri-PV – benefit for agricultural and energy production
- Hybrid systems and storage of produced energy
- Financing PV projects
- Energy communities

The SUNNY DAYS conference brings new information about solar energy, examples of best practices and new ideas, and connects all levels of energy transition stakeholders.
The great interest of participants from the region and Europe confirms that this is the most significant event about solar energy. Book your seat and be one of them!

oie.hr/en/sunny-days-2023

RES CROATIA

SolarPower Europe

WITH CREATIVE IDEAS FOR GREENER SERBIA

Well-organized and developed civil society organizations are one of the main driving forces behind changes and implementation of all strategic and legal frameworks related to the environment and climate change. The World Organization for Nature Protection WWF Adria has gathered civil society organizations in Serbia under the auspices of the project 'Serbia's Actions for a Safe Environment, Nature and Climate – Safe Nature and Climate' – to empower these organizations to highlight environmental and other related problems in their local areas, all to create a healthier place to live.

The strategic grant programme is a WWF project that will last until 2025, and a maximum of four more cycles will be announced by the end of the project. Any organization that meets the requirements can apply for a grant in the maximum amount of 18,000 euros. The programme is designed so that an organization can apply next year as the continuation of the same project or with a different project. The total grant amount during these three years is not exceeding 40,000 euros.

A total of 95 applications from organizations throughout Serbia were submitted following the first call. A total of 20 project proposals that touch on the issue of environmental protection in the broadest sense were shortlisted. Here, we present to you the 10 selected ones.

Association for Promotion and Ecological Marketing of Natural Values – EKOMAR

The Sustainability of Water Reservoirs in Serbia in the Climate Change project aims to identify and present the current situation and problems associated with reservoirs while highlighting the shortcomings in managing

Photograph: Unsplash/Milica Spasojević

and implementing public policies governing this segment.

Our World, Our Rules

This Vranje-based association highlights that Vranje doesn't have a single official document, protocol, or recommendation to prevent climate change's causes and consequences. The town authorities either do not monitor the environmental impacts of climate change, or they do monitor them, but not adequately. Because of this, the association wants to help draft a strategic document dealing with climate change's consequences and causes, thus making Vranje more resilient and healthier. Their goal entails creating public policies, i.e. a strategic document, and better cross-sectoral cooperation to have adequate policies and practical application.

Monitor

The overall goal of this project, implemented by the MONITOR civil association, is to improve local environmental protection policies in Novi Pazar from 2022 to 2030 through dialogue and active engagement of citizens in creating them. The project implementation will form a basis for eliminating the problem of the ongoing lack of local environmental protection policy documents in the town, as well as contribute to the elimination of environmental threats in Novi Pazar. At the same time, it will establish a dialogue between the public, on the one hand, and local government, on the other, in assessing the state and needs of environmental security of all relevant stakeholders.

TRAINING SESSIONS CONDUCTED BY CIVIL SOCIETY ORGANIZATIONS

Training sessions aimed at building the capacity of civil society organizations are currently underway. According to Marina Papović, WWF Adria's Project Manager, risk management training has been completed, while the new sessions will focus on financial and programme management.

"In this way, we want to help other CSOs, which we did not select in the first round, to acquire new and refresh their existing knowledge. We expect them to apply during the upcoming cycles", says Marina Papović.

The strategic grant programme is a WWF project that will last until 2025, and a new grant approval cycle will be launched every year

Centre for Education and Transparency – CETRA

'From Monitoring to Participation – for Better Environmental Policies in Pančevo' is the name of the project with which CETRA intends to achieve several goals. They want to help Pančevo-based associations to monitor better, analyze and participate in the drafting and adoption of local regulations related to the protection of the right to healthy air, to educate young people and remind the public of an important message about the significance of local regulations related to the protection of the right to healthy air. They plan to achieve this through civic oversight and upholding community interests.

Club for UN

The idea of the *Sustainable Development Goals* project as a shortcut for Serbia to join the EU is to answer the questions professionally and practically, namely, why it is important to make a connection between the obligations stemming from Agenda 2030 (COR) and the EU accession process related to environmental protection and ways in which this can be done. One-of-a-kind research will provide the answers to these questions. The research will be conducted by relevant experts and will be made available to all citizens and stakeholders related to environmental protection. With the help of educational workshops, representatives of civil society organizations from the Republic of Serbia will have the opportunity to learn how to monitor public policies and implement their advocacy activities in environmental protection at the same time in the context of fulfilling obligations stemming from Agenda 2030 and the EU accession process.

Natura Natural Resources Centre

The Centre's focus is on creating a new regulatory framework in policies related to environmental protection and mitigating the consequences of climate change in the Republic of Serbia. The *Advocacy of Non-Financial Reporting on Corporate Sustainability* project, as the business sector's response to the challenges of the climate and environmental crisis, aims to help the civil sector in the use of sustainability tools and indicators so that they can credibly participate in the creation of public policies related to sustainable production in our economy.

Join In Civil Association

The project *Are We Protecting Nature?* aims to document the current situation regarding nature protection in the Municipality of Paraćin and the attitude of local institutions towards planned and established protected areas in accordance with the Spatial Plan and the Law on Nature Protection. By obtaining the relevant data, the association would be able to propose measures to improve local policies in this area and, via a campaign, to acquaint the

public with research findings and the consequences that human activities have on areas of special importance for nature protection. The project results will be a very detailed analysis/documentation of the state of nature protection in the Municipality of Paraćin with proposals on how to further improve the system of monitoring local policies.

The Private Forests Owners Association – Bor

The *From Forests to Forests* project aims to improve the current state of forests in the Pčinj, Pirot and Južnobački districts. Private forests make up more than half of all forests in Serbia, which is why the association believes their voice should be heard. Their idea is to invite local governments to incorporate the Association's solutions in their public policies to invest money from the fund that belongs to them adequately. This money is regularly paid into local budgets and should be spent in line with its purpose.

The Vision Civil Association

The *Green Step* project is implemented by the Vision Civil Association from Pirot, whose main goal is to improve the protection and preservation of nature and biological, geological and regional diversity in the territory of the Nature Park (future National Park) on Stara Planina (The Old Mountain). The project plans to boost cooperation between all stakeholders in the preservation of this landscape in all four local units on whose territories the Stara Planina Nature Park is located in 2023, as well as to motivate citizens to actively participate in the decision-making process on the protection of nature on the Nature Park's territory.

> Any organization that meets the requirements can apply for a grant in the maximum amount of 18,000 euros

The Rural Development of Serbia Network

The project aims to improve the development of rural areas of Serbia through increased ecological, climatic and social vitality of rural communities by creating a stimulating environment at the local and national level, as well as improving the capacity of the entire society for a modern approach in planning and implementing measures to support rural development. In addition to economic issues, the project also considers the need to solve social and environmental issues, primarily at the local level.

Information about Strategic Grants will be available on the WWF Adria Serbia website and social media (Facebook and Instagram).

Prepared by Milica Radičević

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WHO CAN PREVENT AN ECO-CATASTROPHE?

If we were not worried about the snow we had in April instead of December, perhaps we should be worried about the results of the index developed by the American University of Notre Dame. The index, which includes a range of indicators, shows that Serbia is the most vulnerable country in Europe regarding climate change and among the slowest in the fight against the world's challenges today.

Global warming is one of the biggest problems facing modern society

The forecasts are unfavorable, so digital clocks have been installed in many countries in the middle of large city squares, which count down to the "eco-cataclysm". Monitors with warning messages are unnecessary in Serbia because pollution is noticeable throughout the year, especially in Belgrade, which is also constantly shown by the air quality measurement index. This problem is serious but not unsolvable, but requires the engagement of all of us – the state and the private sector, but also individuals.

What does the state do?

The Republic of Serbia has committed to reducing national greenhouse gas emissions by 33 per cent by 2030 compared to 1990. Priority areas are low-carbon transport, forestry, water management and agriculture, and the focus is on introducing energy-efficient and sustainable solutions. The private sector plays a major role in solving the problem, which, through its actions, greatly affects society and the environment in which it operates.

How should responsible companies behave?

Since the beginning of operations in Serbia in 2001, *ProCredit Bank* has been committed to respecting sustainable business principles. The bank was among the first to realize the powerful role of financial institutions in the fight for environmental protection and the importance of cooperation with companies and individuals who want to invest in sustainable projects.

Thus, the bank, together with the company MT-KOMEX, financed the largest bifacial solar power plant in

Photograph: Pixabay/Peggychoucair

Serbia, DeLasol in Lapovo, which will be able to supply electricity to as many as 2,100 households. This large project, which is very important for the state, was preceded by two other important undertakings, financing the solar power plants in Kladovo, Solaris 1 and Solaris 2. Such investments prove that financial institutions and how can direct capital flows, thereby influencing the reduction of harmful emissions.

ProCredit Bank, in addition to financing large "green" projects, has excellent lending conditions for private households that want to install more technologically efficient solutions, with the possibility of returning up to 20 per cent of the investment. A house does not have to be demolished and built from scratch to be energy efficient. It is enough to do good insulation and replace the carpentry, and it would be ideal for installing solar panels on the roof or a heat pump.

The bank also owns an eco-vehicle fleet. All official vehicles are electric, and they have set up a network of over 40 free electric car chargers throughout Serbia.

Photograph: (middle right) MT-Komex; (bottom right) ProCredit bank

Big changes start with small steps

Although it may seem that the effect of personal contribution to solving environmental problems is minor compared to the state or company results, it is still not insignificant. It is crucial to understand that each one of us has an impact on improving the environment. And how? It is simpler than it seems. Instead of a plastic bag, there are bags. Instead of single-use plastic, there is a cardboard or paper solution. The water bottle can be made of glass, the light bulb is economical, and the paper is made of recycled material. We don't have to start the car every now and then. Sometimes we can walk or reach the destination by bicycle. *ProCredit Bank* tried to explain that people benefit from cycling as much as our environment, which gave away bicycles to its followers on social networks during the whole of last year – an action in which several dozen eco-two-wheelers were awarded.

Therefore, for snow to fall in December and not April, it is important to be part of the solution, not the problem. There are several solutions, and no more excuses like the famous "I can't do anything".

Source: ProCredit banka

GREEN SPACES IN CITY AREAS UNDER THREAT

Almost every piece of advertising, from cosmetics to vehicles, is imbued with green themes, while in reality, they could be found in traces. This trend is also present in spatial planning of cities, where green construction often ends up not even including the green colour of the facade, and green areas are reduced to having a single planter. In competition with concrete surfaces, green surfaces are unfortunately doomed to defeat.

We spoke with Marija S. Ostojić, graduate forestry/landscape architecture engineer, about the problems of green infrastructure in cities, its importance and possible solutions that would satisfy the needs of both urban planning and nature.

Quality infrastructure

Green infrastructure is a system of interconnected green spaces, which cumulatively affect the environment and consist of parks, nurseries, protected areas, green lawns and other types of green areas. The more connected they are and have better continuity, the better their effect. Certain prerequisites need to be met beforehand to establish themselves, survive, function and give their maximum. Just

> Spatial planning, construction conditions and parameters are frequently changed for the wrong goals and motives. No one thinks about the consequences of bad decisions, as they are only guided by immediate gain

as there are prerequisites for other types of infrastructure - sewage, gas pipelines, water supply or heating – there are also conditions regarding planning and implementing good green infrastructure.

"The basic compounding unit of the green infrastructure should span at least 100 square metres and include at least one tall tree, one from the middle category, bushes, and a lawn to be considered multi-storey and diverse. High categories of greenery must be at a certain distance from underground installations. In that sense, when planning green spaces, the space must be synchronized with the underground and above-ground installations routes," Marija points out.

Photographs: Unsplash/Danist Soh; (Ostojić) courtesy of Marija Ostojić

MARIJA S. OSTOJIĆ has a degree in forestry engineering for landscape architecture. She worked at the City of Belgrade's Institute for Construction in the planning and subway departments, then at the construction company KOLING A.D. She is currently the proprietor of Bašta Bureau. Marija is a member of the Chamber of Engineers of Serbia and the Association of Landscape Architects of Serbia. She holds license no. 373 (responsible designer) and 474 (responsible contractor), which relate to landscape architecture. Marija has substantial experience in green construction planning and design, LEED and BREEAM standardization related to sustainable development and environmental protection. She initiates and organizes expert meetings with the Association of Landscape Architects of Serbia titled "Green Spaces and Living Environment in the City – Landscape architecture solutions 2023".

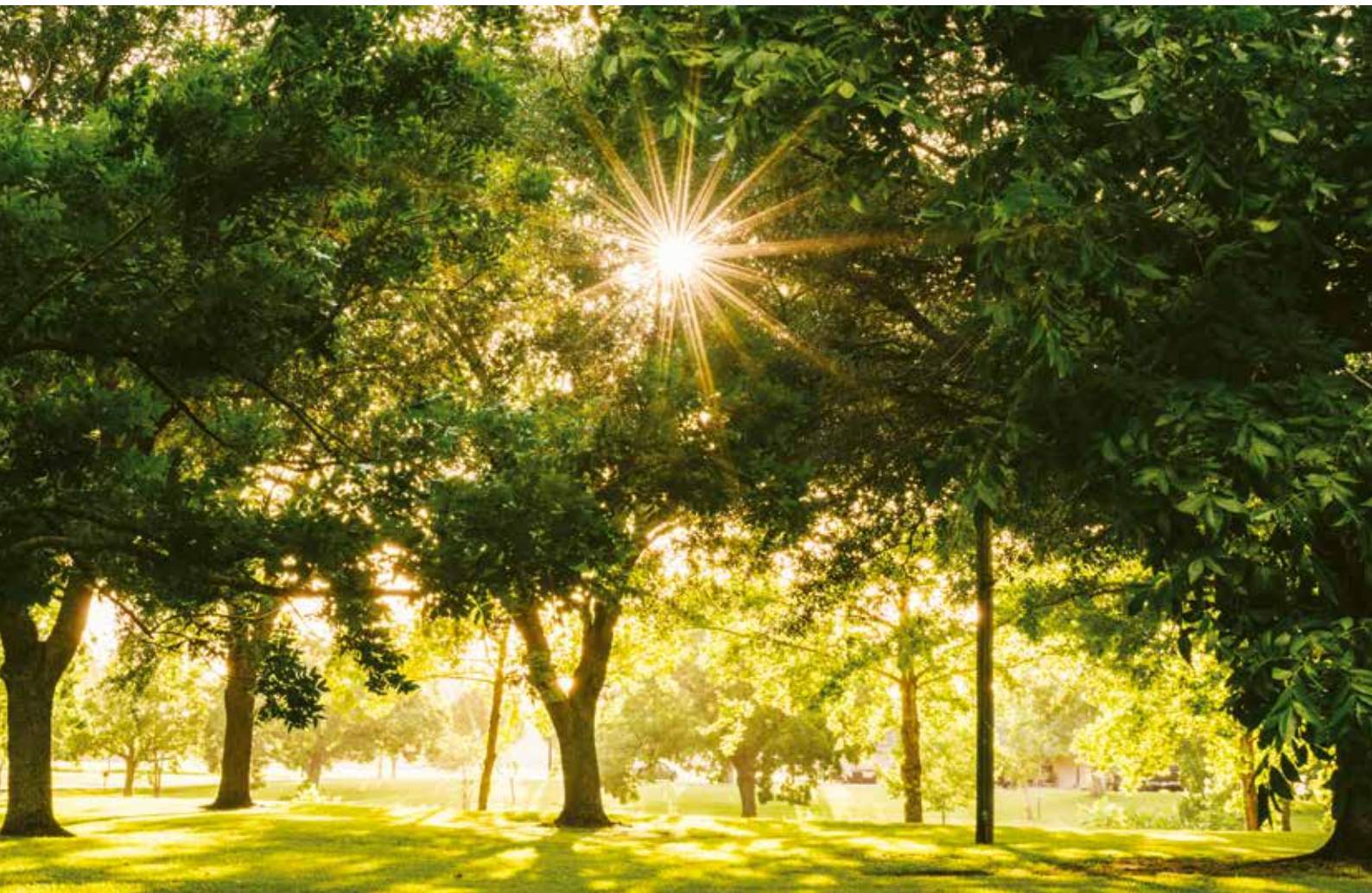
Their function is to protect us from air pollution but also severe heat that leads to the formation of heat islands and floods. Furthermore, they improve soil quality and restore the biodiversity of flora and fauna. As Marija explains, another important influence is improving the overall psychophysical condition of the urban population since being in nature positively affects health, and the proximity of such environments promotes physical activity. Also, green infrastructure has a social aspect, as it is a place to meet, socialize and get to know each other. A town centre has the smallest percentage of green spaces. However, as the city grows and develops, the suburbs tend to compete with this feature characteristic of city centres.

"Considering the ever-growing urbanization and the desire to obtain the maximum square footage of residential, business and other space, plots are being "sealed", that is, the occupancy of above-ground and underground facilities is increasing," explains Marija.

For a city to be sustainable and healthy, the size of green spaces should be considered in reference to the city's pollution as one of the main indicators of whether there are enough green spaces. Nevertheless, it is important to note that the composition of green spaces is very significant, that is, its "building elements". It is not the same if a green area consists only of a lawn or other growing plants. Trees that grow in-between concrete slabs or plants that are growing in limited spaces, such as pots and planters or a green roof with a maximum height of between 80 and 120cm of the substrate, cannot grow properly and possess adequate qualities. Hence they cannot have the same positive impact on the living environment as a tree that grows freely. As Marija explains, the tree's roots have limited space to grow, so the above-ground segment develops accordingly, i.e. it stagnates and cannot achieve its full, maximum function.

> It often happens that a building permit does not contain so-called Project 9, i.e. landscaping or landscape architecture, which is the basis for green space planning. As a result, green spaces and urban and suburban forests are disappearing, and the environment is degraded

Speaking about green roofs and facades, Marija says they represent a technological shift in response to urbanization and the disappearance of vacant land. They improve the microclimate, reduce the effect of heat islands, bind toxic particles and dust, and increase the water capacity. However, it should be noted that rainwater mostly goes into



THE IMPORTANCE OF PRIVATE GREEN AREAS

Private green spaces are an important factor, and they have to be recognized for their social benefits and as active agents in green infrastructure. Their participation, and therefore their influence, is far greater than that of public green spaces, and they deserve to be paid much more attention so that we can create the most comprehensive systemic solution for all types of ownership of green areas.

the rain sewers, not into the soil. Also, green roofs reduce noise and energy needed for cooling and heating the building, protect and extend the life of waterproof materials and more. Although they are currently the best way to green up built environments and contribute to a better quality environment, we should not give up on creating green spaces on the ground, which are significantly more effective.

Still, buildings are greener in advertisements than in reality.

"The terms 'green', 'greenery' and 'oasis' are commercialized. Any term that evokes nature, a garden, shade or chirping birds is used for marketing purposes. The presentations for customers are bursting with images of greenery, and once the use permit for a building is issued, there is no trace of greenery anymore," Marija warns. She adds that foreign investments have grown awareness about the need to construct and maintain green spaces eventually.

"Namely, a certain space is subject to planning and designing conditions, and for a property developer to obtain a building permit, they need to meet these conditions," Marija explains.

The problem of forest areas in Belgrade

Forests in Belgrade are divided into urban and suburban. City forests such as Košutnjak, Zvezdarska Šuma, Topčider, Banjička Šuma, Ada Ciganlija and Miljakovačka are threatened by excessive construction.

The problem is the lack of conformity between the city authorities and the relevant secretariat. While some strive to protect forests from excessive logging, other institutions have failed to implement measures as they should by penalizing and banning construction, demolishing illegally built structures in the protected forest areas and others.

"Spatial planning, construction conditions and parameters are frequently changed for the wrong goals and motives. No one thinks about the consequences of bad decisions, as they are only guided by the immediate gain," Maria points out.

Also, there is ongoing construction in suburban forests such as Bojčinska, Stepin Lug in Zvezdara, Trešnja, Avala, Gročanska Ada or Obrenovački Zabran. As Marija explains, the state development action plan analyzes and indicates construction's positive and negative impacts. Lower-level documents provide further elaboration of these impacts and recommendations for sustainable construction that are more concretely defined, but at the implementation level, they are not considered at all. A building permit often does not contain so-called Project 9, i.e. landscaping or landscape architecture, which is the basis for green space planning. As a result, green spaces and urban and suburban forests are disappearing, and the environment is degraded. Although a lot of the green space has been degraded, it can still be restored. The relevant law prescribes that a building must include Project 9 in its building permit as the only way to prevent the further disappearance of the green fund and to ensure its protection and development.

"We need to pass a law regulating green areas, define the basic compounding units and the prerequisites for their planning, construction and maintenance. Maybe the state should start charging the so-called green dinar for maintenance purposes and have a stronger penal policy that should be implemented equally for everyone," Marija concludes.

Prepared by Katarina Vuinac

Photographs: (on the previous page) Unsplash/Gayatri Malhotra; Unsplash/Pawel Czerwinski

SUSTAINABLE BUSINESS, CLIMATE PROTECTION AND REDUCTION OF CO_2 EMISSIONS AT THE TOP OF OMV'S AGENDA

OMV Serbia, as part of OMV Aktiengesellschaft – one of the largest industrial companies listed on the Austrian stock exchange – has been successfully operating in Serbia for 21 years. Within the scope of its business operations which have been going on for more than two decades, we have been successfully working on reducing harmful gas emissions, climate protection and sustainable business

With headquarters in Belgrade and a network of 63 petrol stations throughout Serbia, OMV Serbia strives daily to spread good energy with its quality products and services, as well as by carrying out numerous socially responsible activities and sustainable business operations while climate protection and CO_2 emission reduction are at the top of the company's agenda. Considering all the above, we can rightly say that the company's motto – *Energy for Better Life* – is completely befitting.

OMV has committed to supporting the goals of the Paris Agreement and the key climate goals set by the EU Council for 2030. The company is also committed to building a sustainable world and achieving specific climate-related goals such as net zero greenhouse gas emissions from operations by 2050 or earlier, acquiring a leadership position in the circular plastics economy (thanks to innovative solutions such as ReOil®), and at least 60 per cent of its product portfolio is low carbon or no carbon at all. The accomplishment of these goals is possible due to the increased use of crude oil for petrochemical products, a greater share of gas in the product

portfolio, hydrogen solutions for mobility and industry, solutions for e-mobility and the delivery of advanced biofuels.

Fighting for clean air

Climate protection and the reduction of CO_2 emissions are at the top of OMV's agenda. OMV Serbia launches various initiatives each year to protect the climate while taking concrete steps to reduce or neutralize CO_2 emissions.

One of the initiatives is long-term afforestation in which OMV Serbia employees cooperate with the public company *Srbijašume*. The last such campaign, whose aim was to continuously contribute to the neutralization of CO_2 emissions and the preservation of Serbia's natural abundance, was carried out in November 2022, when 2,500 black pine trees were planted on the slopes of the Rudnik Mountain.

Investing in electric chargers continues

Another form of support for climate protection and lower gas emissions is to provide as many charging points for electric vehicles as possible at OMV gas stations. At the same time, in this way, the company expands its range of services by fulfilling the ever-changing needs of its consumers. The company is investing a lot of effort into providing over 2,000 chargers at OMV petrol stations across Europe, on motorways and near major cities by 2030.

So far, in cooperation with its partners, OMV Serbia has provided 11 locations for e-chargers, and it continues to expand this network this year as well. Electric chargers are available at OMV stations Lapovo Sever, Martinci 1, Doljevac, Gradina, Beška 1, Bačka Topola 1, Bubanj Potok, Novi Sad, Ruma and Kruševac, and soon at Vranje petrol station. The plan is to continue expanding and improving the e-charger network in our country.

Also, there is a fully operational solar power plant on the roof of the OMV Ražanj petrol station, which will produce 72,000 kWh of clean electricity every year and cover 23 per cent of the facility's total electricity consumption. Installation of solar panels that save energy and at the same time protect the environment is also planned at other stations, and the next in line is OMV Krnjača.

Consumers know that OMV MaxxMotion Performance fuel keeps their cars safe

The OMV Company has set new trends in the Serbian fuel market by being the first in Serbia to import and sell 100-octane fuel from its oil refinery in Austria. OMV's product development and innovation department is on a constant mission to improve MaxxMotion Performance fuel. For instance, OMV MaxxMotion 100plus petrol meets the highest quality requirements of the World Fuel Charter (WWFC), category 6, which enables maximum engine efficiency and minimum exhaust gas emissions. All OMV MaxxMotion Performance fuels, with their ACTIVEFLOW™ technology, offer drivers a superior level of fuel quality, protect the engine, provide excellent protection and extend its life.

Top quality offer and service – standard at all OMV petrol stations

In addition to fuel and a wide range of services and car care products, such as multifunctional service centres, OMV petrol stations and their 58 VIVA stores and restaurants are ideal places for taking a break during driving. Refreshments, delicious meals and a large selection of delicious coffees are a special treat for drivers. Single Origin – coffee

Photographs: (top) OMV; (middle right) iStock

of unique geographical origin, 100% Arabica, which quality has been recognized by connoisseurs with the most refined taste – is often a faithful companion on trips. It is especially popular among consumers because it is produced under the *Fair Trade* label. The OMV Company has been a *Fair Trade* partner since 2012 and has introduced the *Fair Trade* standard at all petrol stations.

OMV offers comfort, a wide product range and quality to its customers. In car washes, you can adequately wash your car yourself or with the help of staff. Also, at OMV stations, you can buy tickets for concerts and sporting events, TAG devices and refills... You can thank your friends for their hospitality by sending flowers, wishing a happy Slava to someone, expressing your love... All you have to do is to buy a voucher at an OMV station and then send an SMS or e-mail... Our employees are always polite, quick and efficient. At OMV gas stations, you can enjoy all the assistance you need and quality service, as well as take a nice break in driving. The number of users of our *Save&Drive* loyalty programme, which offers a multitude of benefits, proves that consumer confidence is growing year-on-year.

We believe that constantly working on improving the quality of products and services, innovation, and environmental protection, as well as the effort to recognize the needs of our customers and make everyday driving and trips more pleasant, will contribute to the fact that OMV Serbia's success will be measured by winning over new generations of loyal consumers.

Source: OMV

Photographs: OMV

VIVA

Café

RICH TASTE WITH
CHOCOLATE NOTES

SINGLE ORIGIN

Guatemala

100% ARABICA

ON SELECTED **OMV** FILLING STATIONS

GROUND-BREAKING DATA PLATFORM PLAYS KEY ROLE IN TACKLING ACUTE FOOD INSECURITY IN FOOD CRISES

Detailed, comprehensive and timely data is essential to address the impact of shocks such as earthquakes or conflict on agricultural production and livelihoods in parts of the world affected by food crises.

Since its launch, during the first wave of the COVID-19 global pandemic three years ago, the Data in Emergencies (DIEM) Information System of the Food and Agriculture Organization of the United Nations (FAO) has made it easier for decision-makers to assess the acute food insecurity of agricultural households and analyse its drivers when such shocks occur.

Driven by regularly collected primary data, combined with geospatial data, DIEM is a ground-breaking tool in terms of its size, sophistication, quality and speed. This is the first time that data focussing on agricultural livelihoods in food crisis contexts is being collected on this scale and frequency.

DIEM is currently active in more than 25 food-crisis countries and the DIEM-Monitoring system surveys approximately 150 000 households per year, representing more than 650 million people.

"The DIEM system fills an important gap in our understanding of the impact of shocks on agricultural livelihoods," said Rein Paulson, Director of the FAO Office of Emergencies and Resilience. "This has great value not only for FAO but for all our partners, allowing us to collectively make improved decisions, including enabling meaningful anticipatory actions as well as response actions."

In Afghanistan, for instance, more than 20 project proposals were drafted using DIEM data, raising more than 400 million USD in 2022 alone, and FAO no longer drafts any proposal for Afghanistan without citing DIEM data. In addition, countries such as Bangladesh, Mali, Mozambique and Sierra Leone now cite DIEM data in their project proposals, thus helping them secure funds for projects on the ground.

Another recent example of its use for FAO partners was in relation to the February earthquake that devastated large areas of Türkiye and Syria. Within days of the event, the DIEM team produced a preliminary analysis of cropland exposed to differing levels of earthquake intensity and displayed this as an interactive map with detail at both district and subdistrict level. This kind of product is fundamental for the targeting of on-the-ground assessments and emergency assistance.

CARPE DIEM

DIEM was developed by FAO and is funded by the Bureau of Humanitarian Assistance of the United States Agency for International Development (USAID), with contributions from the European Union and FAO's Special Fund for Emergency and Rehabilitation Activities (SFERA).

The platform aims to support FAO Members, United Nations' agencies, the donor community and other stakeholders in informing decisions designed to trigger the appropriate anticipatory and response actions in support of agricultural livelihoods.

Data is collected multiple times per year in the world's most food-insecure countries – at household level through computer-assisted telephone interviews and face-to-face surveys – and is published on the Hub rapidly thereafter. Data processing and analysis is completed in just three days, while the entire lifecycle – from data collection to validation and publication – takes just 30 days.

Transparency and open data are key aspects of the project. Anyone can create a DIEM account to explore surveys, navigate dashboards, export maps and download data. This ensures that DIEM activities serve as public goods and that the humanitarian community, academics, media and all stakeholders can benefit from the large amount of data that is available to everyone.

The shocks analysed by DIEM comprise both natural and human-induced hazards. They include climate-related hazards, earthquakes, volcanic eruptions, invasive pests, conflict and violence, as well as economic shocks.

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Source: FAO

Photograph: Pixabay/Couleur

PRIVATE SECTOR AND DIPLOMATIC SUPPORT GROWS FOR GLOBAL GREENHOUSE GAS WATCH

Support for a proposed new global greenhouse gas monitoring infrastructure is spreading beyond WMO Members and partners to the private sector and wider diplomatic world.

The WMO Global Greenhouse Gas Watch (G3W) will combine ground-based stations, satellite measurements with modeling and data assimilation to improve understanding of what is happening with greenhouse gases in the atmosphere to support climate change mitigation and the Paris Agreement.

In particular, the Global Greenhouse Gas Watch seeks to reduce uncertainty about carbon sources and sinks, WMO Secretary-General Prof. Petteri Taalas told the opening of Science Diplomacy Week. The event at WMO headquarters brought together more than 100 diplomats, parliamentarians, researchers and corporate representatives.

Geneva Science and Diplomacy Accelerator Chair Peter Brabeck-Letmathe said the week-long event "is a sign of the growing interest and the need for science diplomacy," in an era of rapid scientific and technological progress, the explosion of Artificial Intelligence tools, and global challenges facing society.

Inter-Parliamentary Union Secretary-General Martin Chungong said he hoped to "nurture debate among policymakers, lawmakers and scientists."

GREENHOUSE GAS MONITORING

The Global Greenhouse Gas Watch is one of the top strategic priorities to be discussed at the World Meteorological Congress, WMO's top decision-making body.

It aims to establish internationally coordinated monitoring of greenhouse gas fluxes to support the provision of timely, actionable information to the United Nations Framework Convention on Climate Change (UNFCCC) Parties and other stakeholders.

Atmospheric concentration of CO_2 and other key greenhouse gases continue to rise; the implementation of the Paris Agreement is not currently on track for the world to stay below 1.5°C to 2.0 °C maximum warming.

Carbon offsetting remains poorly regulated and inadequately monitored; its effectiveness as a tool for climate change mitigation is now questioned.

Not enough is known about the reaction of natural greenhouse gas fluxes to anthropogenic emissions and induced climate change.

Implementation of the Paris Agreement relies extensively on a"bottom-up" activities-based emission estimates – however, such estimates cannot be linked directly to atmospheric concentrations.

The Greenhouse Gas Watch envisages to implement an approach in which atmospheric observations and other input information will be combined with atmospheric modelling systems which can identify when and where greenhouse gases enter and exit the atmosph ere; this information is critically needed to support climate mitigation.

The approach closely parallels the infrastructure developed over the past 60 years under the WMO World Weather Watch which underpins all currently available weather and climate information irrespective of the delivery agent. It also embraces the research and monitoring network of WMO's acclaimed Global Atmosphere Watch.

"The building blocks already exist for this, but we do not yet have an integrated global system that operates the way weather prediction and climate analysis is done," said Lars Peter Riishojgaard, Director of Greenhouse Gas Monitoring.

WMO is looking to engage public-private partnerships to substantially accelerate progress. "There is much more interest from the private sector than I ever would have anticipated," commented Riishojgaard, who has met with representatives of the philanthropic sector, venture capitalists, banks, carbon markets etc.

"Rising carbon dioxide concentrations are moving us into a territory that will give us weather patterns we have never seen. We humans are conducting a climate experiment that has not been seen in the past 5 million years," he said.

Source: WMO

Photograph: Unsplash/Daniel Moqvist

MORE ACTION NEEDED IN THE EU TO REDUCE THE IMPACTS OF CHEMICAL PESTICIDES

Widespread pesticide use is a major source of pollution – contaminating water, soil and air, driving biodiversity loss and leading to pest resistance. Human exposure to chemical pesticides is linked to chronic illnesses, such as cancer, and heart, respiratory and neurological diseases.

The new EEA briefing 'How pesticides impact human health and ecosystems in Europe' summarises the latest knowledge on how chemical pesticides impact our health and the environment and presents good practices to reduce their use and risk across Europe. It showcases good practices for how to reduce pesticide use and manage the associated risks without jeopardizing food supply.

PESTICIDE USE AND IMPACTS: WHAT WE KNOW

Europe's agriculture sector still relies on using high volumes of chemical pesticides to maintain crop yields, with the volume of pesticides sales having remained stable over the past decade. Pesticides are also used in forestry, and along roads and railways, as well as in public parks, playgrounds or gardens widely used by the public – particularly by children, pregnant women and the elderly, groups more vulnerable to pesticides.

From 2011 to 2020, pesticide sales in the EU-27 Member States remained relatively stable at around 350,000 tonnes per year.

In 2020, one or more pesticides were detected above thresholds of concern (a risk to human health) at 22 percent of all monitoring sites in rivers and lakes across Europe. In terms of soil pollution, 83 percent of agricultural soils tested in a 2019 study contained pesticide residues.

Pesticide pollution is one of the key drivers of biodiversity loss in Europe. In particular, pesticide use has caused significant declines in insect populations, threatening the critical roles they play in food production, in particular the pollination of most fruit and vegetable crops.

People are mainly exposed to pesticides through diet, including food and drinking water, as well as by spending time in areas where pesticides are applied and, for agricultural workers, at the workplace. A large-scale human biomonitoring study conducted between 2014 and 2021 across five European countries found at least two pesticides present in the bodies of 84 percent of survey participants.

Pesticide levels were consistently higher in children than in adults, with children being particularly sensitive to the negative health impacts of chemicals. Human exposure to chemical pesticides is linked to a range of serious chronic diseases, such as cancer, and heart, respiratory and neurological diseases, as well as developmental delays in children.

MEETING THE TARGETS — REDUCING PESTICIDE USE

In 2020, the European Commission's Farm to Fork Strategy introduced two pesticide reduction targets: a 50 percent reduction in the use and risk of chemical pesticides and a 50 percent reduction in the use of more hazardous pesticides. The Strategy is a key part of the European Green Deal and aims to make Europe's food systems fair, healthy and sustainable. Achieving the targets will require more work by EU policymakers and Member States, the briefing notes.

The European Commission recently proposed a new regulation on the sustainable use of pesticides, which would require countries to set their own national reduction targets, ensure that all farmers and other professional pesticide users adopt environmentally friendly systems of pest control, and restrict the use of pesticides in sensitive areas such as urban green areas and protected areas. Other measures discussed in the briefing include training professional users and advisors, incentivizing the transition to organic and precision farming, and taxing the most hazardous pesticides.

To reduce dependency on chemical pesticides and maintain food security, it will also be critical to promote the shift to alternative models of agriculture that apply ecological concepts and principles to agricultural production, the EEA briefing suggests.

Source: EEA

Photograph: Pixabay/Franz W

HOW SMALL GRANTS ARE HELPING TO RESCUE MARINE HABITATS AROUND THE WORLD

In recent years, fishing communities in Madagascar have seen their catches dwindle, a byproduct of chronic overfishing, especially in sensitive coastal habitats like seagrass meadows.

But in some communities, fish stocks have started to rebound, thanks in part to the work of the marine conservation group Blue Ventures.

Blue Ventures has worked with national and local governments to establish locally managed marine areas, protected zones that have become a haven for undersea life.

"The communities on the tropical coast of southwest Madagascar depend on mangrove forests, seagrass meadows and coral reefs to establish a network of interlinked ecosystems that act as a base for maintenance of the rich marine biodiversity and fisheries," said Javier del Campo Jimenez, Blue Ventures' seagrass resident expert.

Blue Ventures is one of the recipients of a series of small grants from the International Coral Reef Initiative (ICRI) and the United Nations Environment Programme (UNEP).

The grants, which were first handed out in 2019 and have totalled USD 560,000, are funding innovative, nature-based solutions designed to protect and restore marine ecosystems, including those threatened by climate change.

The grant programme, say those involved, is a tell-tale example of how investing in the natural world can produce big dividends for both people and the planet.

The Kunming-Montreal Global Biodiversity Framework, a landmark deal adopted by 196 countries with critical goals that the world must meet by 2030 if it is to halt and reverse nature loss, also calls for the acceleration of nature-based solutions and finance to address the alarming declines in biodiversity.

A 2021 report from UNEP found that the world will need to close a USD 4.1 trillion financing gap in nature-based solutions if it is to meet its targets for climate change, biodiversity, and land degradation. UNEP's Finance for Nature report calls for investments in nature-based solutions to triple by 2030 and increase four-fold by 2050.

The ICRI/UNEP small grants programme has supported seven projects in developing and small island states. These grants have helped to rehabilitate fast-disappearing marine and coastal ecosystems, including seagrass meadows, mangrove forests and coral reefs.

Experts say, these habitats have been under siege from a triple planetary crisis of climate change, nature and biodiversity loss, and pollution and waste.

"The health of interconnected habitats, such as mangroves, seagrasses and coral reefs is closely linked to the health of the ocean as a whole," said Leticia Carvalho, the Head of UNEP's Marine and Freshwater Branch. "On this International Mother Earth Day, let's remind one another how vital a healthy ocean is to the well-being of all life on Earth."

The pressures on both marine and terrestrial ecosystems are pushing an estimated one million species towards extinction, a decline that researchers have called "unprecedented."

One of those species under threat is the scalloped hammerhead shark. The animals, which are endangered according to the International Union for Conservation of Nature, often become fatally tangled in fishing nets.

To help save the animals, Mision Tiburon, another recipient of the UNEP/ICRI grant programme, has helped to restore degraded mangrove forests in the northern Golfo Dulce in Costa Rica. The mangroves – salt-water loving trees that sit partially submerged in the ocean – are a habitat for juvenile scalloped hammerheads.

"The restored mangroves in Golfo Dulce area are nursery grounds that offer food and protection to the juvenile scalloped hammerhead sharks from predators," said Ilena Zanella, the Director of Mision Tiburon. "The societal awareness on shark conservation via mangrove restoration and ocean literacy provides [local communities] with an opportunity to protect these endangered species for the future of our planet."

Source: UNEP

Photograph: Pixabay/joakant

COUNTRIES MUST FORGE 'GLOBAL BLUE DEAL' TO PROTECT THE OCEAN: UNCTAD

The ocean can provide vast opportunities for developing countries to build more innovative and resilient economies, but climate change, pollution and overfishing threaten the livelihoods of some three billion people who rely on it for food and income.

That's according to the UN Trade and Development body UNCTAD's Trade and Environment Review 2023, published on Monday, which analyses the world's USD 3-6 billion ocean economy, and assesses how human activity and multiple global crises have significantly impacted sectors like fishing, seafood, shipping and coastal tourism.

The report, presented at the 3rd UN Trade Forum in Geneva, calls for a global trade and investment "Blue Deal" to sustainably use the ocean - home to 80 per cent of all life.

"The ocean economy offers many opportunities. We must strike the right balance between benefitting from the ocean and protecting its resources," UNCTAD Deputy Secretary-General Pedro Manuel Moreno said.

OPPORTUNITY KNOCKS

The report highlights two particularly promising sectors for sustainable development – seaweed farming and plastics substitutes.

The global market for seaweed has more than tripled in two decades, increasing from USD 4.5 billion in 2000, to USD 16.5 billion by 2020.

Seaweed doesn't need fresh water or fertilizer to grow, UNCTAD points out. It can be farmed in many developing countries for food, cosmetics and biofuels, and provides an alternative to plastic. Around 11 million tonnes of plastics flow into the ocean each year.

There are many other sustainable materials that could be used to make eco-friendly versions of the straws, food wrapping and other plastic products we consume daily, said UNCTAD. Abundant materials include bamboo, coconut husks, banana plants and agricultural waste.

The world traded about USD 388 billion in plastics substitutes in 2020 – just one-third the amount traded in plastics made from fossil fuels.

The report calls for governments and businesses to boost funding for the research and development of emerging sustainable sectors in the ocean economy.

It urges companies to invest in developing countries to bolster their technology, skills and productive capacities, so both can capitalize on sustainable marine development.

DIVERSIFY EXPORTS

Investing in emerging ocean sectors could help developing countries to diversify their ocean exports. The global export value of ocean-based goods, such as seafood and port equipment, and services including shipping and coastal tourism was estimated at USD 1.3 trillion in 2020.

The COVID-19 crisis revealed the potential and resilience of some sectors and the extreme vulnerability of others.

Governments, the report says, should include the goal of promoting a diverse and sustainable ocean economy in crisis recovery strategies and climate mitigation and adaptation efforts.

PROTECT STOCKS, BIODIVERSITY

An estimated USD 35 billion of government subsidies go to fishing activities around the world.

A significant share – about USD 20 billion a year – could contribute to overfishing by enhancing the fishing industry's capacity through, for example, fuel subsidies or financial incentives to buy bigger boats.

With 34 per cent of global fish stocks below levels that are biologically sustainable, the report urges countries to urgently ratify the World Trade Organization's (WTO) Agreement on Fisheries Subsidies, adopted on 17 June last year.

The agreement, which is a big step in addressing harmful subsidies, prohibits support for illegal, unreported and unregulated fishing, bans support for fishing overfished stocks, and ends subsidies for fishing on the unregulated high seas.

Source: World economic forum

Photograph: Pixabay/Sharon Ang

CENTAR ZA PLIN HRVATSKE d.o.o.

HRVATSKA STRUČNA UDRUGA ZA PLIN
ČLANICA IGU

38. MEĐUNARODNI ZNANSTVENO-STRUČNI SUSRET STRUČNJAKA ZA PLIN
OPATIJA, 10. - 12. 05. 2023.

OSIGURAJTE SVOJE MJESTO NA VODEĆOJ KONFERENCIJI I IZLOŽBI U JI EUROPI NA TEMU PLINA, LNG-A I NISKOUGLJIČNIH RJEŠENJA!

38. MEĐUNARODNI ZNANSTVENO-STRUČNI SUSRET STRUČNJAKA ZA PLIN

održat će se od **10. do 12. svibnja 2023.** u Kongresnom Centru Grand Hotela Adriatic **u Opatiji** u organizaciji Centra za plin Hrvatske d.o.o. i Hrvatske stručne udruge za plin (HSUP), članice Međunarodne plinske unije (IGU).

Saznajte više u **PROGRAMU** konferencije na internetskim stranicama: **https://susret.hsup.hr/**.

TEME KONGRESA

1. POZVANA PREDAVANJA I PANEL-DISKUSIJA: Ključna uloga prirodnog plina i UPP-a pri suočavanju s međusobno povezanim izazovima: sigurnosti opskrbe, energetskom tranzicijom i pristupačnom energijom
2. Prirodni plin kao dio budućega niskougljičnog društva: plinovi iz obnovljivih izvora i niskougljični plinovi kao ključne nadopune obnovljivih izvora
3. UVODNA PREDAVANJA I PANEL-DISKUSIJA: Opsežna plinska infrastruktura uz odgovarajuće politike, inovacije i izvore financiranja imat će ključnu ulogu pri uspostavi potpuno dekarboniziranog i pouzdanog energetskog sustava
4. Budućnost ljudskih potencijala u plinskom sektoru: raznolikost, jednakost i uključivost ključna su rješenja za prevladavanje nove tržišne dinamike i tranzicije
5. Izazovi i prilike u procesu dekarbonizacije budućeg lanca vrijednosti plina i ukapljenoga prirodnog plina (UPP-a)
6. Uvođenje pametnih tehnologija, inovacija i digitalne transformacije u plinskom sektoru u eri dekarbonizacije
7. UVODNA PREDAVANJA I PANEL-DISKUSIJA: Razvojni potencijali terminala za ukapljeni prirodni plin (UPP) i njegova buduća uloga u europskoj plinskoj infrastrukturi
8. Doprinos prirodnog plina i plinova iz obnovljivih izvora u postizanju održivoga prometnog sustava
9. Problematika transporta, distribucije, skladištenja i potrošnje plina s obzirom na nužnost osiguranja učinkovitoga, sigurnog i niskougljičnoga plinskog sustava
10. Pravna regulativa, tehnički propisi, pravila struke i prava potrošača u plinskom sektoru
11. POSTER SEKCIJA: Problematika plinskoga gospodarstva i energetike

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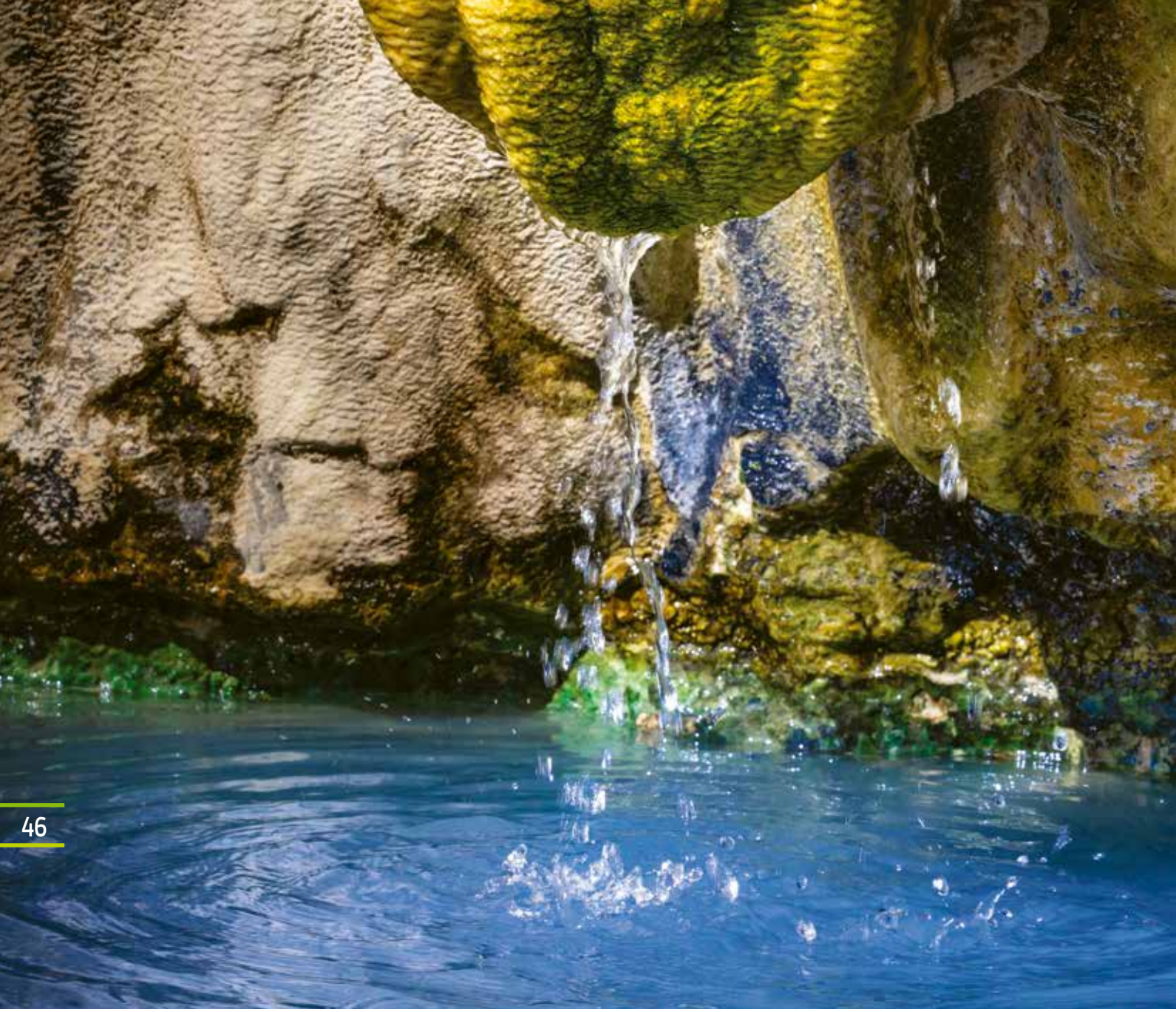


SUSTAINABILITY AS A BUSINESS DRIVER

At Microsoft, sustainability is at the heart of the business, and the success of the sustainability concept depends on the company's entire value chain. Sustainability is a responsibility but also an opportunity. It is, in fact, the only way forward.

When we think about what we can do to prevent further climate change, we also find solutions to other challenges. For example, the digitalization of services automatically uses less paper and creates less waste, hybrid work brings us fewer trips, more time and faster collaboration, reducing air pollution affects the number of health problems, and energy-efficient buildings lead to a better quality of life. In a report by the World Economic Forum, climate protection is a mandatory part of business strategy.

Companies that base their strategy on sustainability create a long-term competitive advantage. This is how Tatjana Skoko, Sustainability Lead at Microsoft SE, discussed how Microsoft supports the Global Sustainability Strategy. For our Magazine, Tatjana explained how they help clients improve the path to sustainability and how they empower companies to become more sensitive to the topic of

The entire career of TATJANA SKOKO, Sustainability Lead of Microsoft SE, was related to the ICT industry. The main focus was selling solutions for companies and working on challenging transformational projects with the most important clients. She started her career at Hrvatski Telekom as a junior account manager. During 14 years, she developed various roles in the organization of sales for companies. She joined Microsoft as a sales manager for companies and partners in 2017, and since 2018 she has held the position of director for Croatia.

Microsoft Cloud for Sustainability helps customers advance their sustainability journey by integrating environmental, social, and governance (ESG) capabilities across the Microsoft Cloud portfolio with solutions from our global and local partner ecosystem

sustainability. Then what they base innovative projects on, as well as how advanced technology enables access, analysis, and use of global data on Earth.

EP ***What are the goals set by the Global Sustainability Strategy?***

Tatjana Skoko Climate change is a real challenge, and it is important to act immediately. Microsoft is committed to sustainability and has made considerable progress in reducing carbon emissions, increasing renewable energy use, and innovating in environmental data science to accelerate the progress. But it is clear that we need to do more. Moving forward, we have a vision of sustainability at our company's core – embedding it into all our technology solutions and incorporating them into our environmental work. Microsoft is making ongoing investments to support new research and development, innovation, and progress across all aspects of our business. Sustainability is present in everything Microsoft does. As a company, we have committed to becoming carbon negative by 2030, achieving zero waste production and positive water usage, and offsetting all greenhouse gas emissions produced since our founding by 2050.

EP ***What is the Microsoft Cloud for Sustainability initiative based on?***

Tatjana Skoko Our products and services are built with sustainability in mind. With Microsoft Cloud for Sustainability, we help customers advance their sustainability journey by integrating environmental, social, and governance (ESG) capabilities across the Microsoft Cloud portfolio with solutions from our global and local partner ecosystem. It can help organizations improve business processes, reduce environmental impact, identify opportunities to build more sustainable IT infrastructure, create greener value chains, and automate carbon accounting and reporting.

As part of our Microsoft Cloud for Sustainability platform, we offer solutions enabling organizations to progress

Photohraphs: Microsoft

PLANETARY COMPUTER

The Planetary Computer is a project developed by the Microsoft Research organization. Its role is to use advanced technology to enable access, analysis, and use of global data about planet Earth and resources for the sustainability and management of the planetary system.

"Large amounts of data from various sources such as sensors on Earth, satellites, weather stations, social media and other sources are used to create a unique digital ecosystem containing a wealth of information about the planet. This information is used for various purposes, including monitoring environmental changes, managing natural resources, analyzing climate change, providing information for agriculture and many other applications," says Tatjana Skoko.

Sustainability is present in everything Microsoft does, and as a company, we have committed to becoming carbon negative by 2030, achieving zero waste production and positive water usage

on their sustainability journey. It includes the Microsoft Emission Impact Dashboard, where customers using Microsoft Cloud can measure and report data on carbon emissions reduction.

Microsoft Sustainability Manager enables organizations to track, report, and reduce environmental impact through automated data integration that provides clear insights. This solution accelerates data integration, calculation, and reporting throughout the organization and the entire value chain. Currently, the focus is on reducing carbon emissions, while waste and water management are expected to be included soon.

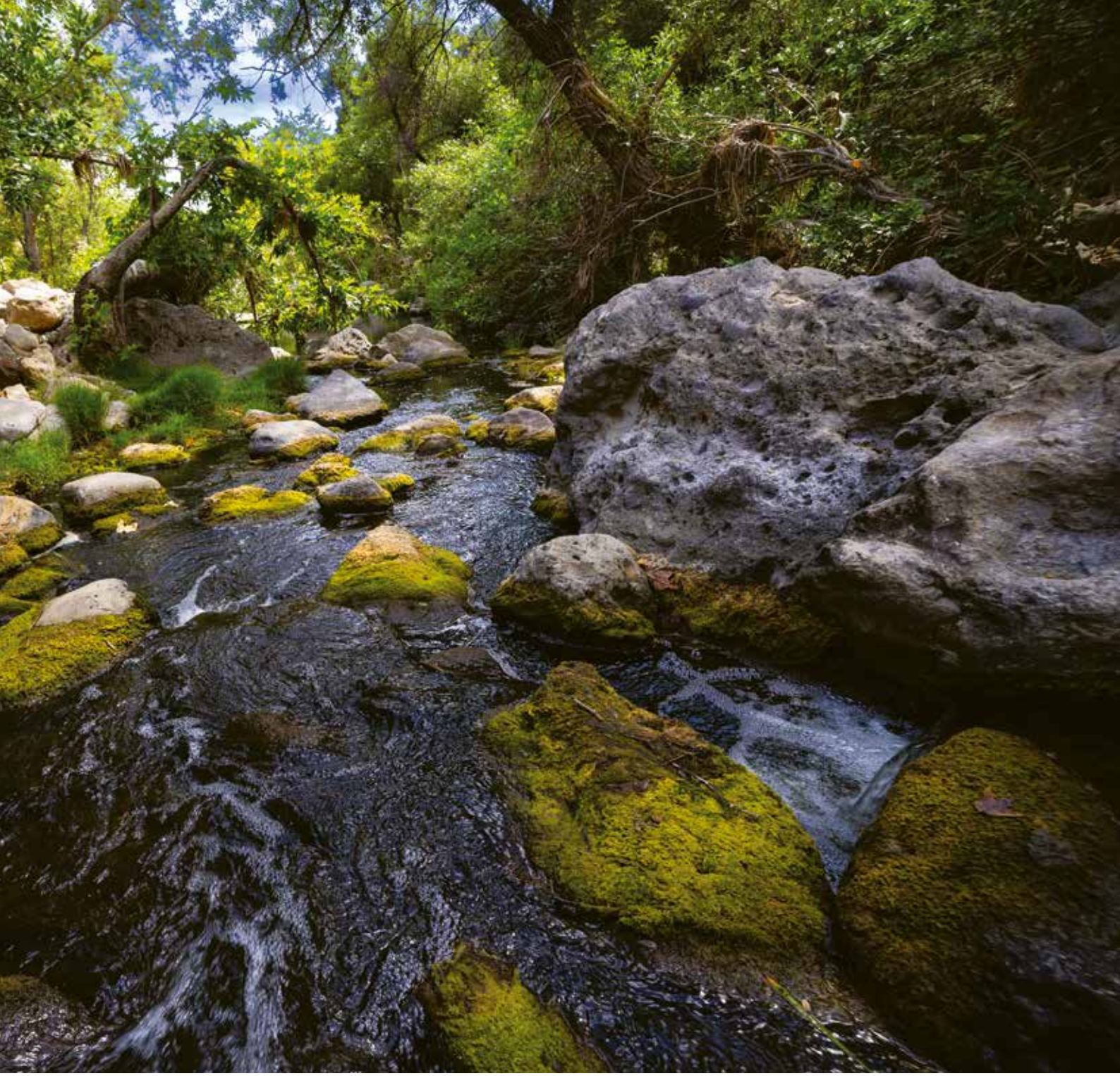
EP ***What is most important in implementing sustainability goals?***

Tatjana Skoko Digital innovations will play a crucial role in helping organizations reduce energy consumption, optimize resource utilization, and make informed decisions based on relevant data.

Data-driven organizations empower leaders and employees to make smarter decisions that improve business and sustainability outcomes. By harnessing data from across the enterprise and using artificial intelligence to create a layer of intelligence, companies can better translate insights into action, helping to drive sustainability, operational efficiency, growth opportunities, impact monitoring and reporting, and, ultimately, value creation.

EP ***On what basis should companies set their sustainability goals?***

Tatjana Skoko We believe there is a tremendous opportunity for the technology sector to improve how we manage Earth's natural resources. In 2017, we launched Microsoft's "AI for Earth" program to put Cloud and AI technology in the hands of leading global ecologists, conservation technologists, and organizations worldwide working to protect our planet. The program increases access to artificial intelligence



technologies through grants, provides education on Cloud and AI to foster collaboration within our community, and encourages innovation through research and strategic partnerships. So far, we have empowered numerous organizations in over 100 countries worldwide to work on environmental innovations that set new standards.

EP ***How can companies be empowered to become more sensitive and efficient regarding sustainability?***

Tatjana Skoko First, it is important to measure and understand the company's core activities, set ambitious goals, and integrate sustainability into its strategy. Then, learning and sharing are the key! We recognize a skills gap in specialized knowledge and sustainability skills across different levels of business and disciplines. It is necessary to combine knowledge from STEM and other fields, business skills, use of data and digital technology.

There is also a need for employers to improve and upgrade the knowledge of their employees and to support these efforts. Microsoft and its partners are working on developing and sharing sustainability learning materials to support these efforts. It includes sustainability-focused LinkedIn Learning sections in Microsoft's Sustainability Learning Center.

Microsoft's most significant contribution to reducing its carbon footprint is achieving its sustainability goals and helping our customers and partners worldwide reduce their environmental footprint through technology, innovation, and collaboration.

Interviewed by Mirjana Vujadinović Tomevski

ART THROUGH THE PRISM OF ECOLOGY

When landfills spring up on green areas, and floating waste displaces fish from rivers, instead of a beautiful landscape, we get a mockery, which can wait a long time for its clean, green-blue clothes to return. This emerging image seems to send a strong message. Although such a message is not always enough for change to take place, sometimes a glimmer of hope appears when ecology and art intertwine, creating a unique energy in this new symbiosis. Such is the art lived by muralist Andrej Josifovski, assistant professor at the Department of Architectural Technologies at the University of Belgrade's Faculty of Architecture, who is perhaps better known to the public by his nickname, The Pianist. We talked with Andrej about his artistic creations dedicated to ecology and the power of their message.

"The task of art is to refine people with its creativity, evoking beautiful and lofty feelings, thereby also highlighting all that is ugly and that needs to be changed to make the world a better and more beautiful place," says Andrej.

One of his big projects is *The golden container*, which, starting from the sociological aspect of poverty, draws attention to the idea that the attitude towards rubbish is a view of the world and its future. With this project, he participated, as part of the team led by architect Branko Stojanović, in the Biennale of Architecture in Venice in 2018, representing the Republic of Serbia.

Although nature is "rich" in the waste this artist needs for his work, it is not always easy to find. His assistants give him significant support, as do organizations that deal with waste, such as *EkoStar PAK* and *KappaStar Recycling*.

Save Our Home is the result of a joint effort – Andrej made a figure of Jovan Memedović, a renowned activist in preserving a healthy environment, from plastic bottles collected along the river. Jovan was the first to draw attention to the pollution of our rivers publicly, Andrej adds.

The *Eko čikice* project attracted the special attention of people. The inspiration for the project came from Andrej's favorite childhood pastime – stacking plastic Lego blocks.

"Plastic waste is the biggest accumulated type of waste and, as such, is the most serious threat to the planetary ecosystem, and thus to the survival of the living world on Earth. The *Eko čikice* game is designed to develop creativity and imagination since a new, beautiful children's world of the future comes to life by stacking

ART AS A GUIDING IDEA

Andrej is confident that art will save the world because it has long since transcended the boundaries of profane life and remained pure of heart, beautiful and untouchable. "Like a bright star, the desire for a man to come close to it and touch it always emerges in the gaze. I firmly believe in that, and that's why I create," says Andrej.

Photograph: Nebojša Babić

ANDREJ JOSIFOVSKI, PhD, completed his undergraduate, master's and doctoral studies at the University's Faculty of Architecture in Belgrade and is now an assistant professor at the Department of Architectural Technologies. He painted numerous murals in the country and abroad. He exhibited at 24 collective and five solo exhibitions, among which *Face au mur*, *The golden container*, and the solo exhibition *The Pianist – five years on the streets* wall and piece are especially important. He is the founder and artistic director of the international street art festival *Runaway*. One of his artworks was included in the *Remembrance of the City* project, and his other works were published in more than ten books, catalogs, and magazines. He is the winner of numerous awards, including the first *Youth Hero* award in the field of art and culture.

From plastic bottles collected along the river, Andrej made a figure of Jovan Memedović, a renowned activist in preserving a healthy environment, who was the first to draw attention to the pollution of our rivers publicly

uniform cubes. The beginning of the game is always a new challenge, and for the game to be repeated and to last, everything is broken down at the end, and the blocks are packed in their cardboard boxes," says Andrej.

The word "lego" is a combination of two Danish words "leg" and "godt" and means "play well".

"That's how I was brought up – to play well. Children should be brought up in that spirit because the world's belongs to them," Andrej adds.

After several days of making *Eko čikice*, they ended up in unregulated landfills intending to spread the message that littering is not "playing well", but an ugly and dangerous habit. What is valid for children should also be valid for adults, and as long as it takes, Andrej will highlight this through his work, and he has no plans of stopping any time soon.

Prepared by: Katarina Vuinac

Photographs: (top left) Soultime media; (bottom right) Nebojša Babić; (Josifovski) Soultime media

PRODUCTIVITY AND A SUSTAINABLE FUTURE THE ABB WAY

Numerous measuring instruments, sensors, actuators, electronic transmitters and other devices hidden in the depths of a plant constantly record data on the flow of air, gas, water or thermal energy. With the emergence of new technologies and companies specializing in digital transformation, the conditions have been created for this source of valuable information to be the starting point for the industry's transition to sustainable business. Contrary to the conventional production process, in which a carefree attitude towards resources such as water, heat or electricity reflected the general spirit of the times, today, there is a new model based precisely on the measurements of the consumption of various resources in the plants themselves. This modern production process implies that all operations are fully connected, flexible and self-optimizing. ABB, the world's leading engineering company, stands out among the companies that can provide this to increasingly demanding industries. Their software solutions in power engineering, robotics, automation and electric drives have been implemented in many factories, power plants and other facilities, achieving greater productivity, safety and reliability while reducing the carbon footprint.

ABB in the fight against the consequences of climate change

It is known that there is no good management without measurement, and the achievement of sustainability in the industry is based precisely on the careful collection of consumption data. Research has shown that global electricity consumption could be reduced by up to 10 per cent if the world's 300 million electric-powered industrial systems were replaced with optimized, high-efficiency equipment. However, that would not be the only benefit. As a result, emissions of harmful gases, the main cause of global war-

At ABB, they say they innovate and push the boundaries of technology to enable a greener future for customers, industries and society at large

ming, would be reduced. As a world leader in resource efficiency, ABB enables the energy transition in factories, power plants and other industrial facilities. Their solutions help reduce emissions of harmful gases and preserve natural resources in the industry. They also gave a time frame to their ecological aspirations. They plan to help their customers reduce annual CO_2 emissions by 100 million tons by 2030, which is the amount of annual emissions emitted by 30 million internal combustion engine vehicles.

What does it look like in action?

Six years ago, the Swedish battery manufacturer Northvolt sought a partner to develop a new technical solution. They found the perfect collaborator in ABB, which accelerated the implementation of that solution through electrification and automation. The applied technology enabled the transformation of the factory. Northvolth is today the world's most environmentally friendly battery manufacturer, but it is not the only Swedish company to which ABB has provided this very flattering title. You may have heard about the new textile raw material called Circulose® or the term "circular fashion". A company from Stockholm has developed a technology that enables a new life cycle for used cotton and other materials with a high percentage of cellulose. Instead of new cotton, clothing factories can now use Circulose, a biodegradable pulp derived entirely from textile waste. For this Swedish factory to meet all the criteria of the circular economy, they hired ABB to introduce complete automation of operations, a quality measurement system and electrification.

At ABB, they say they create innovation and push the boundaries of technology to enable a greener future for customers, industries and society. Their sustainability initiative, Mission to Zero™, which should accelerate the transformation in the industry, speaks for itself. It is an open-source program that allows companies to use and modify technical drawings for smart buildings with their energy production from renewable sources and solutions for its storage.

By using the incredible capabilities of technologies to digitally connect all components within an industrial ecosystem so that they are subject to control, thanks to the connection of data on heating, lighting, ventilation, security and room utilization, energy consumption can be drastically reduced, and with it, harmful gas emissions. ABB's expertise and experience represent safe support for companies on the way to achieving goals such as reducing the carbon footprint and, ultimately, climate neutrality by 2030 and 2050.

Prepared by: Jovana Marković

Photographs: ABB

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ENVIRONMENTAL PRESERVATION IN LINE WITH PRIORITIES AND STANDARDS

When discussing environmental security, we should first highlight the problem of different attitudes towards it. Previously, there were two understandings in the study of environmental safety. According to the first, people cannot influence the climate, and the argumentation was based on the works of our prominent scientist Milutin Milanković. According to another understanding in circulation since the 1980s, people have significantly impacted the climate. Both understandings are correct because Milutin Milanković died in the 1960s when people still didn't cause substantial negative effects on many environmental factors.

Another problem relates to adopting international agreements and laws regulating environmental protection, environmental safety and sustainable development

Photograph: Pixabay/geralt/25717

in our country. Following the United Nations Agenda 21 (1992), we adopted the Law on Environmental Protection, the Law on Environmental Impact Assessment, the National Strategy on Sustainable Development, the National Millennium Goals of Sustainable Development and several other regulations. Based on this, many Local Environmental Action Plans – LEAPs were adopted too, such as LEAPs for the City of Niš (2001), the City of Belgrade and the City of Smederevo (2005), and later for many other cities and municipalities. Belgrade municipalities such as Zemun, Savski Venac, and others all have LEAPs. However, the issue with the implementation of many documents remains. Based on the United Nations 2030 Agenda (2015) and the Sustainable Development Goals (SDG) related to water, it is estimated that 75 per cent of people in our country have access to healthy drinking water, while about 21 per cent of people use clean energy. Furthermore, under the 2015 Paris Agreement, United Nations member states committed to reducing greenhouse gases to curb the growth of average global temperatures to between 1.5 and 2 degrees Celsius by the end of the century. Based on this agreement, each country has Nationally Determined Contributions (NDCs), and Serbia needs to reduce greenhouse gas emissions to around 10 per cent by 2030, compared to emissions in 1990.

Associate Professor VERA AREŽINA, PhD, has been a lecturer at the University of Belgrade's Faculty of Political Sciences since 2011, where she teaches Environmental Safety, Methodology of Political Sciences and other subjects in master's and doctoral studies. Before that, she worked at the Diplomacy and Security Academy since 2006 in different non-teaching positions since 1994. PhD Arežina has published three books and several scientific papers in environmental security and political science methodology. She is a member of several organizations such as UN HESI, Greenpeace, Women Engage for a Common Future – WECF, the Institute for 21st Century Questions, the International Association of Methodologists of Social Sciences, and the Danube – River of Cooperation International Scientific Forum.

> Because we have not defined environmental safety priorities in Serbia, we are facing many consequences of climate change

The third and main problem is defining priorities, especially in our country. Are our priorities protecting water resources, air, biodiversity, reforestation and education? Environmental safety is a long-term process that begins at home, with education at all levels, socialization and dissemination of information, more people reporting environmental crimes, and more people being indicted for them. Students study environmental protection at our higher learning institutions and in elementary and high schools in Serbia. The University of Belgrade's Faculty of Political Sciences has several courses related to environmental security and policies, and we have also organized events such as sustainable development weeks. For instance, students of the University of Gothenburg, the University of Michigan, and others study ecological methodology, ecological assessments, and the like. Recently, I took part in the United Nations Higher Education Sustainability Initiative (HESI), which aims to implement sustainable development, with an emphasis on quality education and lifelong learning. Some countries have defined afforestation as priorities. As of 2019, Italy has planted around 300,000 trees and reforested 30,000 hectares of land. Pakistan plans to plant 10 billion trees, and so far, they have planted one-third of that number. Ten years ago, the Wall of Trees project was launched in over 20 African countries, spanning over 8,000 kilometres. Around 15 per cent of this project has been implemented to date.

We face many climate change consequences because we have not defined environmental safety priorities in

Photographs: Pexels/Meryem Sevim; (Arežina) courtesy of Vera Arežina

Serbia. Furthermore, we have air and water pollution, problems with waste disposal and wastewater processing, outdated industrial facilities and thermal power plants that have not been renovated, and more. New industrial plants being built on agricultural land should also be considered, such as the tire production plant in Zrenjanin that is being built near Carska Bara, despite Zrenjanin having an adequate industrial zone. According to estimates by the European Environmental Agency (EEA), one in eight deaths in Europe is related to environmental pollution, mostly air, noise or poor water quality. The population in the Balkans is most at risk, especially in Albania, Serbia, Montenegro and Bosnia and Herzegovina. It is estimated that in Serbia, 6,000 people die each year due to air pollution alone, of which there are about 2,000 cases in Belgrade alone. Also, environmental safety in our country can be jeopardized by the installation of derivation mini-hydroelectric plants and the opening of new mines while disregarding the ISO 14000 environmental standards, for instance, in Loznica and other populated places, which are known as fruit growing and generally agricultural areas.

Although hydropower plants in Užice and Ivanjica date back to the 1900s, after more than a century, we are faced with the construction of derivation mini-hydroelectric plants in the vicinity of Pirot, on Golija, Stara Planina and other protected areas which are detrimental, pose a permanent environmental threat and will force the locals to migrate Of course, the development of every region in our country should be encouraged, but not at the cost of jeopardizing environmental safety. The proposal is to develop technologies promoting economic growth and preserving the environment.

> Environmental safety is a long-term process that begins at home, with education at all levels, socialization and dissemination of information, more people reporting environmental crimes, and more people being indicted for them

Sometimes, adopted laws are implemented too slowly or worse than 50 years ago. For example, we have adopted the Law on Packaging and Packaging Waste (in 2018) and the Draft Amendments to this law (in 2020), which regulate rules for paying a deposit on plastic, glass and cans. However, no feasibility study was done beforehand to determine

Photograph: courtesy of Vera Arežina

the fixed costs of establishing a deposit system in our country. A deposit, that is, a deposit on glass packaging, could be collected in any store in our country in the 1980s. In the past decade, the ISO 14022 environmental standard has been much better implemented in Croatia than in Serbia, especially in Germany, Italy, France and other EU countries. For instance, this environmental standard is applied even in smaller shopping malls in Szeged, Hungary.

Since 2011, I have been monitoring water quality at public fountains in Belgrade. According to data collated by the City of Belgrade Public Health Institute, the water in public fountains is usually not safe to drink, or if people do drink it, an appropriate filter should be used. First of all, it is both sad and funny that these water quality reports are published at least a month after a public fountain has been put to use. Secondly, I seriously doubt that Belgrade's public fountain near the Church of Saint Petka, also known as Hajdučka Česma, has a filter. World empires such as the Roman or Ottoman were known for having public fountains, and here we are, in 21st century Belgrade, still having a problem with them.

We need to harmonize and improve the work of many institutions, especially environmental inspections and courts. Also, based on the defined priorities, more projects should be implemented with the Green Climate Fund (GCF), which budget is about 100 billion dollars. Currently, we have three GCF-funded projects implemented in Serbia. Also, a reward system should be introduced for everybody working on preserving the environment. For example, they could be rewarded with a week of free parking in a certain city zone, winning a competition for the most beautiful green balcony, or creating green spaces around city buildings.

Serbia needs to reduce greenhouse gas emissions to around 10 per cent by 2030, compared to emissions in 1990

Photographs: (sredina desno) Pixabay/Kanenori; (dole) courtesy of Vera Arežina

INTELLIGENT ELECTRIFICATION FOR THE INDUSTRY

For the decarbonization of the industrial sector, efficient management of energy consumption is of decisive importance, and the best way to achieve this is intelligent electrification

Miroslav Ristić, Head of Business Unit Electrification & Automation; Siemens Serbia

We spoke with Miroslav Ristić, from the company Smart Infrastructure, at Siemens Serbia, about the ways of supporting the industry in reducing emissions and decarbonization and the possibilities for greater sustainability within the work processes.

"Industrial companies, as well as the rest of the economy, have years behind them that were marked by the covid 19 pandemic. Some companies are in a better position than others due to the location where they operate or the sector in which they are located. Regardless of how they overcame the previous period, there is now an opportunity to shape the post-pandemic recovery in a greener way, especially because this year of uncertainty has exposed an additional problem that affects us all – climate change," Ristić said.

Significant and mutually coordinated measures are necessary to reduce greenhouse gas emissions. It also applies to the industrial sector, especially the process and manufacturing industry, which consumes a lot of energy.

Miroslav Ristić pointed out that adequate processes are crucial in this sector because industry represents a third of the total energy consumption. And not only that. While sectors such as power generation, agriculture and households have started to reduce their own greenhouse gas emissions, industry has so far seen little progress compared to how much can be done.

"We have identified three levers that will drive emissions reduction and decarbonization in the industry. The first is the introduction of greater flexibility in the use of energy, for example, by using storage solutions and virtual power plants. Second, we need to digitize operational processes, which will allow us to use energy efficiently. This can be achieved using IoT devices, sensors, and software. Third, we need intelligent electrification in all driving processes," says Ristić.

Of the three levers mentioned, the third one has the greatest potential for decarbonization and can greatly profit from the first two. With electrification, two aspects should be considered: the supply of energy to the industrial site, for example, the possible use of renewable energy from wind farms, solar plants, and hydroelectric plants without

Photographs: (left) Siemens; (Ristić) Darko Ristić

Siemens has been competitive for 175 years because they are committed to innovation and sustainable business. How did they do it? They decided to transform themselves and make a large conglomerate into several smaller companies, which accelerated the company's development and allowed them to think entrepreneurially.

In the company, they monitor and encourage the development of technologies, but as an organization, they are constantly transforming and improving.

"We are one of the first companies in the world that eight years ago committed to be carbon neutral by 2030. So far, we have reduced CO_2 emissions by 46 per cent in our facilities and factories, we have invested 65 million euros in energy efficiency projects, which resulted in about 13 million savings per year, and 78 per cent of the energy in our business premises comes from renewable sources," said Ristić.

Almost two years ago, they defined even more ambitious sustainable development goals through the DEGREE framework (Decarbonization, Ethics, Governance, Resource efficiency, Equity, Employability), which implies a complete transition to electric vehicles, use of energy exclusively from renewable sources, but also a 20 per cent reduction in CO2 emissions from our suppliers.

"We follow a holistic approach in six action areas with strict and measurable indicators. As demonstrated by our accelerated goals and extensive investments, it is deeply embedded in our business activities, investment decision-making and company strategy," says Ristić.

They try to be an example to other companies and associates. As a technology company with a unique portfolio, they support clients in their increasingly stringent ESG goals.

Making electrification "smart" means introducing IoT sensors and platforms to collect massive amounts of data

CO_2 emissions, as well as energy management at the site itself, for example in the form of software demand management.

Emission-free processes

Miroslav Ristić says that electrification has a large potential impact on decarbonization. It allows clean electricity from renewable sources to drive processes that previously used high-emission technologies, such as diesel generators. The process, which until this moment has led to high emissions of harmful gases, can be carried out entirely without emissions if renewable energy is used for the drive.

There are numerous opportunities for on-site energy management, as electrification opens the door to

Photographs: SIEMENS

digitization and more intelligent electrification. In this way, numerous possibilities are opened for energy efficiency, operational resistance, and plant optimization.

Making electrification "smart" means introducing IoT sensors and platforms to collect massive amounts of data. Data is accumulated and analyzed using algorithms and software to help plant operators identify opportunities to increase efficiency in the plant's energy system and overall operations.

Our interlocutor points out that this, among other things, leads to optimized production and low energy consumption. At the same time, it is possible to recognize early situations that can negatively affect the system's efficiency, such as machine downtime.

Digitization enables the creation of a digital twin of the factory's energy system.

In combination with industrial automation, designers can thus test numerous operational scenarios. The purpose of testing is the optimal coordination of systems and services. It contributes to lower error rates and also lower design, construction, and maintenance costs.

Examples from practice show what opportunities are available to industrial companies.

Significant and mutually coordinated measures are necessary to reduce greenhouse gas emissions

"A large number of industrial companies have used our solutions. The number of satisfied users is increasing daily, and new opportunities for cooperation are opening up. As one example, I would single out cooperation with the MIND Kragujevac industrial complex, where our advanced solutions and sophisticated equipment are installed in all distribution substations, enabling reliable electricity supply and monitoring and analysis of all system parameters," says Ristić.

Efficient management of energy consumption

For the decarbonization of the industrial sector, efficient management of energy consumption is of decisive importance, and the best way to achieve this is intelligent electrification. Plant operators feel the benefits of greater flexibility in production, life cycle optimization and higher power. Decarbonizing industrial sector is becoming something that can be achieved, thanks to ecological electricity and numerous opportunities to improve energy efficiency.

Thanks to intelligent electrification, companies can improve their environmental impact and support national and regional sustainability commitments, such as the Green Deal in Europe.

"The pandemic forced us to stop and think about traditional work processes. If industrial companies want to prepare for the post-pandemic period, they must include intelligent electrification in their recovery and growth strategies," says Ristić.

In this way, companies will improve their balance sheet but also do something for the benefit of customers and the entie planet.

Source: Siemens

GREEN KILOWATTS FOR SECURE SUPPLY

Environmental responsibility has become a guiding idea for companies whose developed awareness allows them to see the bigger picture of their business. And it extends beyond the boundaries of the quality of the products or services and the company's profit. The inclusion of renewable energy sources in business is an indicator of responsible behavior towards the current energy crisis in the world, the needs of one's country, but also the environment through the preservation of non-renewable energy sources, the use of which impairs the health of the planet.

The STOP SHOP company, as one of the leading brands of the IMMOFINANZ company, which is the largest operator of retail parks in Central and Eastern Europe, has recognized the importance of caring for the environment, including environmental responsibility through the use of solar energy as the guiding principle of its business. The design was entrusted to the CEEFOR company, and as a pilot project in the retail park 2 in Požarevac, on the roof of the STOP SHOP facility, a solar power plant with a power of 989.74 kWp was built. The power plant includes 2,414 monocrystalline solar panels of the brand Luxor Solar LX410M/182-108+, with a power of 410 Wp.

The total power of all power plants will be able to cover, on average, between 60 and 70 per cent of the electricity used

AC distribution cabinets are an indispensable part. It was decided to use the *Fronius* monitoring system and smart meters, necessary additional equipment that allows the solar power plant to be maximally efficient.

The CEEFOR company pays special attention to always using only the best and highest quality products on the market. So, for this solar power plant, they chose inverters

Photograph: Unsplash/Albert Hyseni

produced by *Fronius*, which are known to be among the highest quality on the market. Forty-six inverters of different power are installed on the roof of this retail park. The roof surface of this building required the installation of a D-Dome construction manufactured by *K2 Systems*. The annual production of the power plant is expected to be 1,140 MWh, while the carbon dioxide savings will reach about 530,000 kg.

This entire project was entrusted to Bojan Jovanović, a young electrical engineer who is part of the CEEFOR company team. Thanks to his previous involvement in similar projects, all the obstacles he encountered during the development of the solution for this solar power plant were quickly and easily removed, and the client was offered the best solution.

"Designing the solar power plant at the STOP SHOP facility in Požarevac was very interesting for me as an engineer. The facility has over 25 measuring points at low voltage and one common measurement at medium voltage. In order to simplify the procedure, we decided to make one power plant that will be connected to medium voltage.

The specific thing is that we had to evenly distribute all the energy obtained from the solar power plant to each measuring point. We did this by distributing the electricity obtained from the solar power plant as a percentage in proportion to the consumption of each measuring point. My colleagues and I believe this is the best solution for this kind of facility," said Bojan.

Apart from Požarevac, work is currently underway on designing 13 more power plants on the roofs of STOP SHOP facilities throughout Serbia. Most of the buildings will be equipped with power plants of similar power as in Požarevac, while two locations will have higher power. At all locations where solar power plants will be installed, *Luxor Solar* brand solar panels with individual panel power of 545, the latest generation, are planned. Also, a D-Dome-type structure manufactured by *K2 Systems* will be installed on all other buildings. The total power of all power plants will be able to cover, on average, between 60 and 70 per cent of the electricity used.

Bojan Jovanović,
electrical engineer

Apart from Požarevac, work is currently underway on designing 13 more power plants on the roofs of STOP SHOP facilities throughout Serbia

"In the coming period, we plan to install photovoltaic plants in all our facilities and ensure that STOP SHOP retail parks produce green energy, all in cooperation with the CEEFOR company. Sustainability is an essential part of our corporate strategy, and accordingly, we will continue to expand our services towards a clean and sustainable future," says Maja Marić, regional operations manager and leader of the Belgrade office within CPI Property Group.

The Center for Energy Efficiency and Sustainable Development (CEEFOR) has been successfully operating for more than a decade in the field of developing sustainable projects and energy efficiency in the Balkan region. It offers its clients consulting and design services in renewable energy sources. The company's professional team is ready to answer all client requests and questions.

Prepared by: Katarina Vuinac

SOLAR ENERGY FOR ELECTRIC VEHICLES

Green energy obtained from solar power plants at these retail parks will be used to supply chargers for electric vehicles, which will save carbon dioxide emissions.

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Photographs: CEEFOR

SUSTAINABLE DEVELOPMENT OF URBAN PLANNING AND ECOLOGY

Apart from the conventional challenge of making cities a better place to live, urban development today must also respond to the challenges created by climate change by adapting the physical space to heat waves, droughts, floods, and other increasingly frequent manifestations of these changes. At the same time, urban planning should actively contribute to reducing human impact on the climate by providing efficient and sustainable housing models. Nevertheless, the pressure of capital on urban development is getting stronger, and in the war with profit, green space almost always loses. We talked about the problems of urban planning in Belgrade and possible solutions with Marko Aksentijević, Programme Coordinator from the Ministry of Space.

"The concept of the 2024 General Spatial Plan of Belgrade proclaims a healthy city, revitalization, and preservation of the urban core, increasing energy efficiency, resilience, and decentralization as its goals. To make this decentralization principle operative, the plan envisages the relocation of sports fields, colleges, and hospitals, to reactivate these "attractive and marketable locations". Instead of more social and green infrastructure, we get more concrete and bigger crowds," Marko explains.

The problem also lies in the fact that the plan fails to consider the demographic study, although it is an integral part of the plan, which unequivocally predicts a population decrease. Instead, it has been projected that the city will gain additional 100,000 inhabitants and therein lies the answer to the question of how to make city development more sustainable – by planning in accordance with the real needs of people, not capital. According to the preliminary data from last year's census, 136,336 new apartments were built in the last 11 years, while the number of households increased by only 46,414.

"In Belgrade, at the same time, there is a large overpopulation of apartments and a large number of empty apartments. This is not a characteristic of a city that operationalizes its resources well, and it is certainly not the direction in which it should continue," says Marko Aksentijević.

Illegal construction

Illegal construction used to be tolerated in the past because it was mainly family houses, the construction of which solved the housing problem of many families who immigrated due to the wars in Yugoslavia that were illegally built.

"In the last 15 years, entire buildings have been built illegally because certain property developers are tolerated, as they always find it more profitable to subsequently legalize the building than to build it in line with regulations and with all permits obtained. Thus, the developer generates faster and bigger profit and the future tenants and the city administration are left with the hassle of utility infrastructure. In the parts of the city where this is most pronounced, the spatial plans show *post-festum* what has been built and what needs to

MARKO AKSENTIJEVIĆ graduated from the Faculty of Political Sciences. He has been working at the Ministry of Space for 10 years and currently holds the position of programme coordinator. He is one of the authors of the publication.

Photographs: (background) Pixabay/fotos1992; (top right) Ministry of Space

be upgraded accordingly regarding utility infrastructure rather than planning new development. Such a situation makes any planned city development impossible," explains Marko.

It also inevitably causes a problem with the traffic infrastructure. The widening of streets congested at rush hour and which often have only one lane in each direction often requires the expropriation and demolition of not only individual houses but also entire buildings that have sprung up in the last few decades.

"The city is planning to drill a tunnel stretching from the Faculty of Economics to Despot Stefan Boulevard, and that is perhaps the most vivid example of where we have space left for constructing infrastructure; that is underground. However, if we look at the plans for the subway, we don't have many reasons for optimism," Marko adds.

Speaking about traffic, he says that the subway construction could cause fewer traffic jams. On the other hand, the subway's performance will depend a lot on the location of its lines.

"The current plan for the first line envisages that it will stretch from Makiš via Belgrade Waterfront to Mirijevo; that is, it connects large housing construction projects that most have yet to take place instead of connecting those parts of the city where people already live and which they actually frequent, such as are the Clinical Center and the Railway Station, and traffic jams are frequent. One part of the public, led by the Faculty of Civil Engineering, believes the route should go from Zemun to Kralj Aleksandar Boulevard. The city government has announced that the subway lines are subject to change, which is a good signal, but it is probably also a sign that we will have to wait for a long time to have a subway," Aksentijević points out.

According to current forecasts, the average speed of cars moving through the city is expected to decrease from 31.6 km/h, as it was in 2015, to 16 km/h in 2033. Due to constant motorization, city traffic will slow down twice more in the next 18 years. For the forecasts to be proven wrong, the city authorities need to enable and stimulate alternatives to private cars – from public transport to walking. One of the solutions is cycling. However, there must be an adequate spatial infrastructure to promote cycling. For several years, the idea of repurposing the Old Sava Bridge between Novi Beograd and Ada Ciganlija into a pedestrian-cycling bridge has been under consideration. According to Marko Aksentijević, its conversion would contribute more to the recreational use of bicycles than to fewer traffic jams. Concerning that, a more significant contribution would be bicycle paths that would not be marked on the sidewalk, where there is a constant conflict with pedestrians; rather, they would be marked on the roadways, which would form a unique network of paths.

"Adequate infrastructure would certainly increase the number of users. People will always choose a more comfortable and faster transport mode. The envisaged system of public bicycles, for which the Belgrade authorities gave a concession a year ago, can help here, but we have yet to see how it will look," Marko notes.

Environmental consequences of spatial planning

The overloading of cities with buildings and traffic infrastructure, as a result of which space for green areas has also been reduced, inevitably leads to environmental problems. Speaking of Belgrade and climate change, heat waves are the greatest climate risk here. In the publication, Marko Aksentijević explains that one of the most significant manifestations of the increase in temperature, specific to cities, is the appearance of the so-called urban heat islands. It consequently leads to an increase in energy consumption, most often the use of air conditioning and cooling devices, and the fact that a large quantity of electricity in Belgrade is produced by burning fossil fuels, which creates a problem of the carbon footprint, which cannot be ruled out. According to the World Health Orga-

HEAT ISLANDS

The phenomenon of heat islands occurs when urban areas have significantly higher temperatures than their surroundings. The main cause of this phenomenon is the lack of sufficient green areas and vegetation because they have been replaced by asphalt and concrete, with minimal ability to absorb solar radiation.

Fotografija: Pixabay/fotos1992

nization's estimate, 3,585 people die prematurely annually in Serbia from exposure to PM2.5 particles, of which 1,796 live in Belgrade.

As Marko explained in the publication, the main polluters in Belgrade are companies that produce electricity, provide heating and are industrial. At the same time, transport is the biggest polluter regarding nitrogen oxide. The increase in temperature also leads to an increase in the intensity of extreme precipitation. When it comes to heavy rainfall and the risk of flooding, the lack of green infrastructure is a big problem because materials like concrete cannot absorb a significant amount of water compared to green areas. In addition to increasing the quality of life by providing a larger space for recreation and relaxation, green areas also protect against numerous disasters. A glimmer of hope that things can change comes from projects like this that advocate urban solutions to reduce the impact of climate change.

Prepared by Katarina Vuinac

Photographs: (top) Unsplash/Nikola Aleksić; (bottom left) Pixabay/red__koral__ph

THE DOOR IS WIDE OPEN FOR COOPERATION AND LEARNING IN THE PHOTOVOLTAIC INDUSTRY

Energetik energija, the leading distributor of solar components, recently held a very successful meeting dedicated to business and cooperation in Belgrade. The meeting provided valuable insights and fostered new partnerships with current and potential clients.

The gathering was attended by various industry experts and stakeholders, who participated in informative and productive discussions on the latest developments in the energy sector. The meeting served as a platform for *Energetik energija* to showcase its expertise in this area and highlight its commitment to delivering innovative solutions to clients.

"The educational meeting was a long-awaited event that showcased the latest advances in photovoltaic technology. We achieved remarkable success, bringing together a diverse group of participants, including installers, builders, company engineers and potential clients from different regions. The meeting is designed to provide new solutions for photovoltaic systems and highlight the benefits of incorporating 2023 GUIDE TO BATTERY SYSTEMS into their operations. The guide is undoubtedly the most important tool created for each participant, a comprehensive resource that presents the latest technologies in the rapidly changing photovoltaic environment. It is a valuable tool for installers, builders, and company engineers, providing practical information on designing and installing PV systems that meet their customers' needs and presenting

2023 GUIDE TO BATTERY SYSTEMS is translated into Serbian and is available only to subscribers of the www.energetik.si newsletter

Photograph: Pixabay/Nicolás

various storage solutions. This gives attendees a holistic view of the options available and how they can be incorporated into their projects," said Riccardo Frisinghelli, CEO of *Energetik energija*.

Integrating energy storage solutions into PV systems has been one of the most significant developments in the PV industry in recent years; the 2023 GUIDE TO BATTERY SYSTEMS is a key tool to help installers, engineers, and companies stay abreast of the latest developments in energy storage technology. The guide is designed to be accessible to everyone and at all levels of expertise. It provides practical information on designing and installing energy storage systems that meet customer needs while ensuring that PV systems are reliable, efficient, and cost-effective. In addition, the guide is a valuable resource for companies looking to expand their business into the energy storage market.

The guide has been translated into Serbian and is available only to subscribers of the www.energetik.si newsletter. Subscription is available for all photovoltaic professionals. To sign up, simply write 2023 GUIDE TO BATTERY SYSTEMS in the message box, and you'll receive your copy of the guide shortly.

The educational meeting served as a platform for *Energetik energija* to showcase its expertise in this area and highlight its commitment to delivering innovative solutions to clients

Riccardo Frisinghelli
CEO of Energetik energija

"We are constantly preparing new materials and tools for our existing, new, and potential customers so that everyone can be informed about the latest technologies, solutions, best product performance and all the details. More tools like this are being prepared, and we are sure that our efforts in creating them are highly appreciated and expected by clients," announced Frisinghelli and added that for *Energetik energija*, human and personal contact is everything.

"The atmosphere was professional yet friendly, which made it easy to connect with professionals and like-minded people and learn from their experiences to understand their needs and problems better and provide the best solutions for each customer. This meeting was just an introduction because we are preparing a bigger meeting with the producers soon. It will be a great opportunity for old, new, and future customers to meet the most important manufacturers, ask questions and learn even more about the industry, the latest trends, and best practices in this area," said Riccardo Frisinghelli.

Educational meetings organized by *Energetik energija* are highly recommended to everyone interested in keeping up with the latest developments in the field of business and cooperation in photovoltaics.

Energetik energija

Photographs: (Frisinghelli) courtesy of Riccardo Frisinghelli; (middle) Unsplash/Michael Fortsch; (middle bellow) Pixabay/Como una Reina; (bottom right) *Energetik energija*

A BOUILLON CUBE THAT SAVES THE PLANET

The popular saying that the world belongs to the young is often heard, but it seems that we do not understand its meaning as we should. We should correct our wrong decisions before leaving it to the young generations to make new solutions. Because we often fail to do this, children repeatedly remind us by offering us lessons as reading material to learn from. The Hospitality and Tourism High School students in Niš, who founded *NiFood*, offered us a lesson and an innovative, healthy, and ecologically significant product to the market. We talked about it with Milica Todorović, the marketing manager of this company.

After visiting several school offices and other facilities, they noticed that a large amount of food was being wasted. Through a more detailed study, they concluded that in Serbia, as many as 770,000 tons of food end up as waste per year. Guided by the desire to participate in the fight against the waste of this resource, they researched which foods most often end up as waste and how they could, at least partially, prevent it.

"From the point of view of ecology, the problem of throwing away food and food ending up in a landfill is reflected in the fact that by rotting, due to the absence of special processing, food becomes biowaste that emits, among other things, methane. Carbon dioxide is often talked about as a significant environmental problem, and it is forgotten that methane emissions have a much stronger negative impact than CO2," says Milica Todorović.

In this company, through diligent work, they came up with the common idea to contribute by producing soup cubes that preserve the environment. This product is unique due to its natural composition, since among the ingredients are pumpkin and carrot trope, root and whole vegetables of celery, parsnip, onion, and parsley, as well as spices, pepper and bay leaf. It goes without saying that it does not contain artificial colors, flavor and aroma enhancers, emulsifiers, and glutamate.

Fotografija: Unsplash/Anna Bratiychuk

"The bouillon cube is suitable for all ages, for people with cardiovascular diseases, diabetics, vegans, as well as babies because it contains vitamins A, C and B that are obtained from the tropical pumpkin," says Milica.

The product is not yet on sale because the students are working on improving its qualities to extend its shelf life. However, they are already planning to expand the range when the opportunity arises.

A successful young team

In the *NiFood* company, in addition to teachers who provide them with constant support, young people have formed a team in which everyone has a role. Apart from our interlocutor, that team includes top manager Vuk Jovančić, finance manager Miloš Tošev, procurement and sales manager Momčilo Mitrović and production manager Luka Marković.

The message coming from these young people points to the importance of developing awareness about preserving our planet. In order to have a positive impact on the environment, we need to be open, to read and absorb information in various ways, especially about the consequences of wasting food and other resources.

"Young people are not aware that whatever they throw away, they are destroying the chance for better development and life on Earth," concluded Milica Todorović.

Prepared by: Katarina Vuinac

Photographs: Nifood

URBAN GARDENS ARE GOOD FOR THE ECOSYSTEM

Urban agriculture or urban gardening is a growing global phenomenon. This world trend is increasingly being applied in the countries of the region.

In four countries of the region – North Macedonia, Croatia, Bulgaria and Serbia – the urban agriculture project called "Education in urban agriculture for a sustainable future", financed by the European Commission as part of the Erasmus Plus programme, is being implemented.

The project partner organizations are the Forum for Strategic Research and Documentation from Skopje, Eko Udruga from Zadar as the project leader, the Association for Policymakers from Sofia and the Serbia Organika National Association for the Development of Organic Production. The project will be implemented by late 2024.

Ivana Simić, Secretary General of Serbia Organika, says that the urban agriculture concept is known in the region, but that due to new global challenges such as global urbanization, the need for environmental protection and the current destabilization in food production and transport chains, it has gained even greater importance.

"Small, green plots for growing crops in big cities contribute to mitigating the bad effects of the economic and food crisis," says Ms Simić, adding that city dwellers enjoy

Photographs: (top) Pixabay/zhugher; (middle right) Pixabay/Rebecca Matthews

multiple benefits from working in gardens tucked between neighbourhoods and on the outskirts of cities. They no longer play a passive role of exclusively consumers/buyers but become active micro-producers. Produced fruits and vegetables, as well as herbs, are used for their own needs. By tilling the land, they positively impact environmental protection, and by engaging and selling surplus products, they provide additional economic value to household budgets.

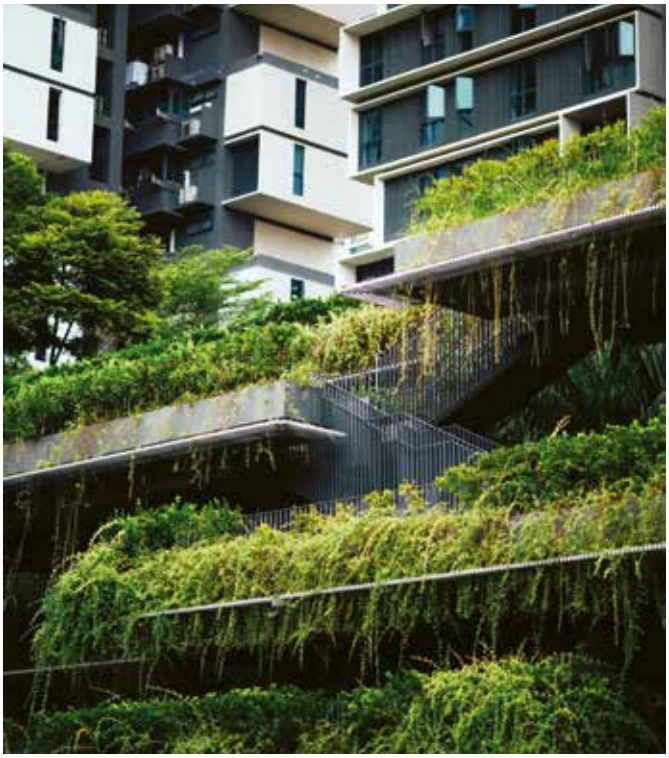
Urban agriculture implies that free land is leased, and the area can vary in size - from a few square metres to several hectares. Land users can be individuals or civil communities engaged in agriculture, vegetable growing, horticulture, fruit growing, composting, setting up beehives and organic agricultural production.

By learning and implementing land-to-table agronomic processes, urban dwellers pave a green road through concrete, thus blurring the strict division line between rural and urban. While this impact of urban gardening is undoubtedly significant, we should not forget the social and health aspect engaging urban residents to tend to land plots in cities because planted gardens become places for socializing, developing community and having physical activity.

Urban agriculture is also a way to promote the social inclusion of marginalized, particularly vulnerable social groups. By working together in the urban garden, intergenerational ties are strengthened more easily because fellow citizens of different ages are directed to each other. At the same time, city gardens are also suitable for creative workshops for school and preschool children.

The project, implemented in four SEE countries, envisages the dissemination of knowledge and improving the skills of city dwellers, encouraging them to take an interest in environmental protection and sustainable development while strengthening urban agriculture principles contributes to the fight against climate change.

> Urban gardens become places for socializing, developing community and having physical activity



"The goal of this regional project contributes to the EU's Green Agenda, the fight against climate change and the sustainability of cities," Ivana Simić underlines.

Educational activities, courses and training sessions are planned in the countries of the region. During the project, a study will be drafted that will contain an analysis of the current situation in terms of the possibility of developing urban gardens in each of these countries, as well as an educational package containing videos, infographics, guides for beginners, development of training curriculum and information on promotional events.

Prepared by Mirjana Vujadinović Tomevski

Photographs: (bottom) Unsplash/Jonathan Kemper; (middle right) Unsplash/chuttersnap

ATLAS OF GOOD ENERGY

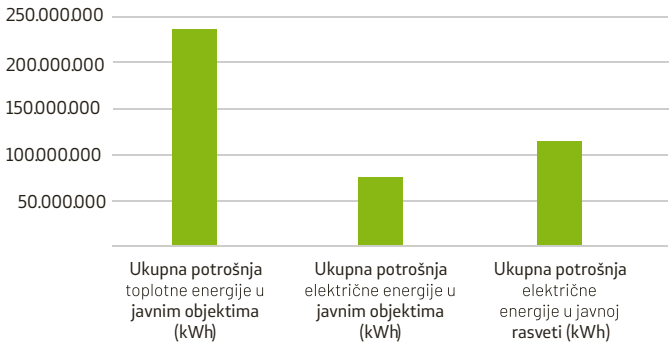
ATLAS OF GOOD ENERGY AS A PREREQUISITE FOR BETTER DEVELOPMENT POLICIES

The Atlas of Good Energy was conceived as the first step in preparing and showing an energy identity card in local governments in the Republic of Serbia and Bosnia and Herzegovina in a systematized, participatory and transparent manner.

Knowing the purpose of energy consumption, the structure of consumption and production at the local level are all necessary for making fact-based decisions. Understanding the impact of meeting our energy needs on the environment and health and how many of our fellow citizens cannot afford the energy necessary for a healthy life are prerequisites for creating good development policies.

With the support of our long-term partners, the Heinrich Böll Foundation and the Rockefeller Brothers Fund, and with financial assistance from Sweden, the civil society organizations gathered under the auspices of the Good Energy Network designed the look of the energy ID card, as well as devised a process which creates a network between many young energy agents who are trained to recognize and collect data for the energy ID card.

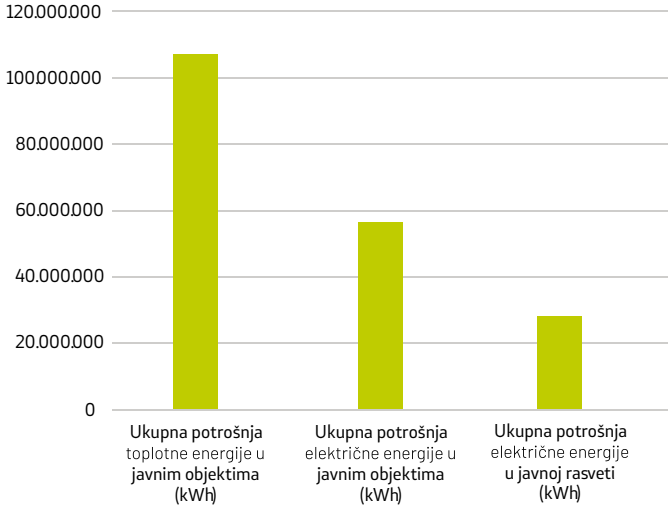
The Serbian Atlas of Good Energy shows data on final energy consumption, expenditure on energy procurement and the last price of purchasing electricity for 30 local government units (LSGUs). A total of 1,876,461 people live in these LSGUs, which span 19,856 square kilometres. The collected data show that the total costs for energy and energy products used in public buildings, public lighting and communal services in Serbia amounted to more than 7.5 billion dinars annually. The total annual budget expenditures amounted to more than 83 billion dinars. Furthermore, emissions of CO_2 and other local pollutants resulting from energy use are also shown. The atlas also includes a description of LSGU activities regarding tenders for boosting energy efficiency and reducing pollution, data on the number of energy-jeopardized customers and public-private partnerships for more efficient public lighting.



According to the collected data, the most energy is consumed for heating purposes in public buildings. In contrast, the electricity consumption for public lighting is higher than the total electricity consumption in public buildings.

Energy consumption in Bosnia and Herzegovina

Bosnia and Herzegovina's Atlas of Good Energy contains data on final energy consumption, expenditures for energy procurement in 10 local government units, emissions of CO_2 and other local pollutants resulting from energy production. 468,115 people live in these LSGUs, spanning a total area of 5,927 square kilometres. The collected data show that the total costs for energy and energy products used in public buildings, public lighting and communal services amounted to more than 33 million convertible marks per year, while the total budget revenues amounted to over 385 million convertible marks per year. The collected data also show that



the largest segment of energy in Bosnia and Herzegovina is consumed for heating purposes in public buildings, while the consumption of electricity in public lighting is less than the total consumption of electricity in public buildings.

The Atlas of Good Energy is only a good starting point for continuing the data collection process until all local government units are covered. It creates the opportunity to establish cooperation with local governments in checking, confirming, and improving the collected data, which contributes to the development of the open data concept.

Prepared by: Mirjana Vujadinović Tomevski

Illustration: Atlas of good energy

SET TREBINJE 2023

ACCELERATION OF THE REGIONAL ENERGY SUPPLY

The fourth consecutive SET Trebinje 2023 summit was held in March this year under the slogan "Energy stability of the Western Balkans". During three summit days, 720 participants heard from energy experts from almost all countries of the region everything about renewable energy sources, decarbonization, energy independence, power system, energy storage, electromobility and fuel prices.

At the Summit opening, Luka Petrović, Director General of Elektroprivreda Republika Srpska (Electric Power

Industry of the Republic of Srpska), noted the possibility of establishing a joint energy community.

"Through this association, we could delegate problems and solve them together so that no one is harmed and suffers negative effects. I am confident that in such an energy community, we can achieve profitability, stability and independence in terms of energy," Petrović explained.

On the first day of the Trebinje Summit, topics of discussion were the development of the infrastructure of electricity grids, the optimization of the interconnection process in the region, and the current position of prosumers. The Summit participants agreed that one of the biggest ongoing problems in the region is connecting new RES capacities to the grid. All regional distributors have been experiencing almost the same problems. They unanimously agreed that a lot of investments in the grid are needed, as well as its well-planned development so that all new capacities generated from renewable sources can be connected to the grid without interruption.

Photographs: SET Trebinje

With the passing of new laws both in Serbia and the region, individuals can now become prosumers, resulting in the installation of numerous solar power plants. On the first Summit day, the participants discussed relevant procedures, shortcomings and processes that should be simplified to shorten the process of acquiring prosumer status.

"Two years ago, Serbia, through its Renewable Energy Sources Law, stipulated the institution of prosumer, which was very ambitious, reformed the system and brought it closer to new standards. There were problems of a logistical and technical nature. Still, they are being worked on, and changes are expected to occur," said Petar Mitrović, a lawyer from the Karanović& Partners law firm and one of the Summit participants.

It was an ideal opportunity for companies operating in the RES sector to present their offer on the regional renewable sources market. Miloš Kostić, Director of the MT-KOMEX Company, which is a leader in the construction of solar power plants, explained in detail the method, procedure, and benefits of constructing such power plants to the SET Trebinje 2023 participants. During his presentation, he clarified the legal and regulatory framework for consumers and the connection of solar power plants to the grid.

Electricity prices and service flexibility

Summit participants expressed a great interest in the panel discussion about electricity prices in the region. It was an ideal opportunity to announce the opening of new markets: Montenegro in late April, Albania in May, and North Macedonia on May 10. SEEPEX representatives at the Summit in Trebinje used the opportunity to announce that they would start with the intraday market.

In terms of future development, it was important for the contracting parties of the Energy Community to hear that a new set of electricity measures was adopted, which for the first time, ensures the regional market's equal position on the European market. The new set of measures enables the countries of our region to fully integrate into the European market.

The Energy Community's experts recently completed a study that deals with the flexibility services of the power system in the process of decarbonization.

"This is a study about the sources of flexibility to support the decarbonization of countries that are parties to the Energy Community. The study gave an overview of all possible flexibility sources. Power systems should be able to equalize production with consumption at all times so

that the frequency remains at 50Hz," explained Davor Bajs from the Energy Community.

He also pointed out that that is not a novelty, acknowledging big challenges in balancing the system with numerous integrations of renewable energy sources.

"Higher the renewable energy sources integration (and I am referring to solar and wind energy), the more demanding it is to achieve flexibility. The study gave an overview of all possible sources of flexibility, which includes an incredible amount of technical, non-technical, financial and regulatory measures and activities", Bajs added.

Nemanja Pandurević, Director of the Independent System Operator in Bosnia and Herzegovina (NOSBiH), reminded that Bosnia and Herzegovina currently has seven virtual power plants, which are the parties responsible for balance, so now, at the distribution level, electricity producers can choose to whom, under what conditions and at what price to sell electricity. These seven power plants have close to 120MW of installed power.

Miloš Mladenović, Executive Director of SEEPEX, spoke about two key documents published by the European Commission and expert bodies – on the digital energy community and market design.

Development of electromobility in the region

The panel discussion on electromobility was also quite appealing to summit participants. The panel discussed electric cars and the development of charging infrastructure, legislation and subsidies.

Željko Purgar, an electromobility consultant, spoke about the ban on the sale of cars with IC engines after 2030 and the trade in emission coupons in the transport segment. As he pointed out, this transition is expected to happen as early as 2026, when the sale of cars with an internal combustion engine will be banned.

Miloš Kostić, Director of the MT-KOMEX Company, which was the first in Serbia to start installing e-chargers, pointed out that Serbia does have subsidies for the purchase of electric vehicles. Currently, there are about 1,000 electric vehicles in Serbia, which were mostly purchased with the help of these subsidies, which can go up to 5,000 euros per car.

"We initially installed AC chargers to demonstrate that a large number of charging points can be executed with a small investment. We realized that we needed to continue investing, so we dedicated ourselves to developing a network of ultra-fast chargers, and so far, we have installed 54 of them. We also have a platform – Charge&GO – which allows all our users to quickly and easily find chargers, charge their vehicles and pay for the use of the charging station," Kostić added.

The panellists also spoke about the importance of electric car drivers planning their journey according to the availability of charging points and about the available applications that help them easily locate chargers. They also talked about how important subsidies are for purchasing electric cars and that the examples of European Union countries show that subsidies significantly facilitate people's decision to buy an electric vehicle.

There are 300,000 charging points for electric cars throughout Europe, and the plan is to increase that number to a million by 2025. The panellists agreed that it is a very demanding project and that a good plan should be put in place for its implementation, which includes the provision of huge financial resources.

Since, according to estimates, the price of fuel will be very high in 2026, all owners of conventional vehicles will want to drive electric cars. The savings when driving an electric car are already substantial even today because it is up to eight times cheaper to drive an electric car than a conventional one.

MH Elektroprivreda Republika Srpska, the Town of Trebinje and SET d.o.o, organized the SET Trebinje 2023 summit under the auspices of the Ministry of External Trade and Economic Relations of Bosnia and Herzegovina and the Government of the Republic of Srpska.

Prepared by Milica Radičević

BIOMATERIAL IS THE FUTURE OF DESIGN

While numerous industries are shutting down their plants, overwhelmed by innovative technologies, the fashion and design industries are constantly accelerating their growth. Research shows that the fashion industry contributes 10 per cent to the total global pollution, which is a significant share when you consider that many people do not perceive it as a polluter. In recent years, progress has been made in solving this problem, so in stores, we have been increasingly coming across clothes that carry a more sustainable product origin

INNOVATIONS

"Experiments and working on innovations are a constant. This year, I plan to launch the first biomaterial products. We have already entered the market with candle containers, and other products are coming soon too. New organic waste and bacteria products will mark the whole year. For the first time, I will offer products that can be purchased."

label.

Following this trend, biodesign is gaining more and more attention. We asked Maja Halilović, a biodesigner who works with organic waste and living single-celled organisms to create new biodegradable materials, what are the advantages of biodesign.

Ten years ago, Suzanne Lee presented the first project that could be considered biodesign, in which she stimulated the Scoby bacterium to produce cellulose. Three years later, Maja started using this bacterium to obtain biomaterials.

Scoby is the only bacterium that produces cellulose as a byproduct of its symbiosis with yeast. It is a very interesting bacterium that should be studied carefully in the scientific world. There are different processes that Maja uses to get the best quality pulp for processing, and one of them is controlling the bacteria's environment. The process involves isolating bacteria that can form a symbiosis to improve biomaterial's generation rate and quality. Among other things, Maja uses organic food waste to experiment with bacteria, all to obtain a higher quality product.

BIOLOGICAL REVOLUTION

"All my work is tied to nature protection. When introducing biodesign to a wider audience, I usually connect the story with the current economy, the state of the industry and why we have to embark on the 4th revolution, which I call the biological revolution," says Maja Halilović.

The biodesigner MAJA HALILOVIĆ is the recipient of the award for innovative ideas related to female entrepreneurship and has been nominated for the best design at the International Design Biennale. She is the co-founder of Bio Co Culture, a collaborative project aimed at educating a wider audience about biodesign and bioart, implemented throughout the Balkans. She holds numerous workshops on the production of biomaterials, climate change, greenwashing, ecology and zero-waste practices. Maja also helps companies to re-purpose their waste.

Working with organic waste is different. To make a biomaterial from this type of waste, Maja designs a bioglue that glues organic waste so that it becomes a usable material. The process usually begins with waste collection, followed by processing that includes cooking to kill bacteria, drying and grinding, and finally, an amalgamation experiment. Biodegradability is later tested in soil, as are the strength, durability, longevity and other properties of this new material.

Unlike most materials made from crude oil, which is very dangerous for every ecosystem on the planet, biodesign respects nature and all its inhabitants. Moreover, the whole process is healthy, and there are benefits for nature when the product is discarded. Due to the presence of numerous minerals, vitamins, as well as microorganisms, biomaterial nourishes the soil when the product decomposes.

Although the majority of the public is still not familiar with the concept of biodesign, Maja, through her work, lectures and workshops that she holds throughout the Balkans, contributes to disseminating knowledge about its importance daily. Although, at first, the work with the Scoby bacterium was only an experiment, today, Maja sees biodesign as something that could be fully viable in the future. Her experience has shown that young people and children are most familiar with environmental protection, which is encouraging for a more sustainable future for the planet. It is supported by the fact that biodesign has been introduced as a subject at several higher learning institutions, which is a sign, as Maja says, that we can only grow further.

Seven years ago, the first lecture on biodesign was held in Belgrade. Every year, Maja visits Serbia, and last year, as part of a project implemented with Creative Europe, she taught children from the Bogdan Šuput School of Design about biodesign and held workshops on the production of biomaterials. She will not come to our capital this year, but she hopes to receive an invitation soon to bring us new knowledge.

Prepared by Milica Radičević

Photographs: Almin Zrno

AN INCREDIBLE 102,239 VISITORS ATTEND THE BELGRADE MOTOR SHOW

Few expected the success that the 55th International Motor Show and the 15th International Motorcycle, Quad, Scooter and Equipment Show, Motopassion, have achieved. It is the largest auto show held in March in the world. The official data show that a total of 102,239 people visited the show between March 22 and 28, 2023, at the Belgrade Fair, which speaks for itself.

The show was held during incredible global economic, energy, communication, technological and market changes in the automotive industry caused by the consequences of the global pandemic, and then followed by the Ukrainian crisis, the shortage of automotive parts and components, major technological changes and new business concepts. This fact caused the absence of the show's commercial effect, the usual discounts and the stock of vehicles for quick delivery. Nevertheless, the Serbian Association of Vehicle and Parts Importers, which brings together all the stakeholders in the Serbian car and motorcycle market, managed to gather all its members, i.e. the automotive brands, around the idea and plan to have as many novelties and novelties as possible at the Belgrade Motor Show. Getting exhibition pieces was an incredible challenge in the existing circumstances. Still, the brand representatives

did everything to present the latest offer from the international market, primarily new electric, hybrid and plug-in hybrid models and the latest generation of ecologically perfected models with conventional drives.

This year's International Motor Show brought together 250 exhibitors who presented 33 automotive and 7 light commercial vehicle brands with over 40 premieres. 60 exhibitors showcased over 40 brands of motorcycles, quads, scooters and equipment at the Motopassion event. It should be noted that the show's motorcycle segment showed an enormous expansion in terms of the number of brands, models and novelties.

The redesigned space – Hall 3 of the Belgrade Fair – was reserved for premium brands such as *Mercedes, Maybach, BMW, Mini, Maserati, Audi* and *Porsche*. All other car brands were exhibited at Hall 1 – *Volkswagen, Nissan, Chery, Skoda, Subaru, Geely, Volvo, Kia, Mazda, Renault, Dacia, Hyundai, Ford, MG, Citroen, Fiat, Alfa Romeo, Jeep, Suzuki, Peugeot, Opel, Toyota, Honda, Seat* and *Cupra*. Exhibition showpieces were located in Hall 4, light commercial vehicles in Hall 3A and automotive equipment in Halls 2 and 1A.

This year's edition of Motopassion showcased an extensive offer of motorcycles of all relevant global brands, numerous premieres and new models and equipment

The visitors found the prices of the exhibited models and the conditions under which they could buy them the most interesting. The most expensive models exhibited at the Motor Show were individual models of *Maserati, Mercedes, Porsche, Audi* and *BMW*, which prices ranged from 170,000 to 300,000 euros. In the lower price category, ranging from 13,000 to 20,000 euros, the Motor Show featured *Hyundai, Fiat, Opel, Dacia, Suzuki, Citroen, Ford, Kia, Renault, MG* and *Toyota* models. The cheapest *Volkswagen* model cost just over 25,100 euros. *Nissan's* cheapest model cost about 30,000 euros, while the Škoda Kamiq, with full equipment, was sold for 27,000 euros.

ATTRACTIVE FOLLOW-UP PROGRAMME

For many visitors, the follow-up programme was the main reason for their visit. This also applies to the Journalists' Rally and Journalists' Day, centred around media professionals. The visitors responded well to the Family Day, which entailed discounted entrance fees for families with children. Another attraction point was the Miss Motor Show, the traditional parade of vintage cars called the Prince Tomislav Karađorđević Memorial, the selection of the Car of the Year in the AANS segment (*Peugeot 408* and *Opel Mokka Electric*) and the selection of the most successful automotive company.

This year's edition of Motopassion showcased an extensive offer of motorcycles of all relevant global brands and numerous premieres and new models and equipment, which sales have been growing year-on-year. Road traffic, automotive and related industries, light delivery vehicles and garage-service equipment, as well as the banks, leasing companies and insurance companies' offers, were also at a high level. Manufacturers made a breakthrough in this sector of compatible and accompanying equipment for environmentally advanced vehicles, chargers for electric vehicles and solar modules for use in the auto industry.

Source: Belgrade Fair

Photographs: Belgrade Fair

WHAT IS YOUR CARBON FOOTPRINT?

He paid off his debt to the planet last November by donating over $1 million from his retirement fund to carbon elimination projects

In January this year, a man set out on a mission. On the way from Europe to Asia, he will not try to convert you to a new religion, but he will preach a new view of the carbon footprint each of us leaves behind. His name is Craig Cohon, and as we write this text, he is in Serbia, one of the legs of his six-month journey to undo the carbon emissions he left behind during his lifetime. Craig was born in 1963 and has released 8,147 tons of carbon into the atmosphere.

This Canadian businessman lives in London, where he started his journey to walk 4,000 kilometers. The plan is to arrive at his destination in Istanbul on June 5, his 60th birthday, also World Environment Day.

Every day, Craig walks 25 kilometers to manage to visit France, Belgium, Germany, Poland, Czech Republic, Austria, Slovakia, Hungary, Serbia, Bulgaria, Greece, and Turkey by the deadline.

Turning back his carbon clock isn't Craig's only goal. In this campaign called Walk it Back, in which he has invested more than a million dollars, he has placed all his hopes, believing it will encourage many similar activities and initiatives to cancel no less than 100,000 tons of carbon.

The goal is clear; we must remove as much carbon from the atmosphere as we have released into it. That's why Craig talks to activists, government representatives, policymakers, and all interested actors in the field of environmental protection on his journey to light a spark from which self-aware interlocutors will succeed in igniting numerous proposals and ways to remove carbon.

The story of Craig Cohon

Due to the nature of the work, Cohan traveled around the world for years, and thirteen years ago, he moved to a barge anchored on the banks of the river Thames. Last year, he reviewed its lifetime carbon consumption following the UN Climate Change Conference (COP26). He is the first natural person who calculated to the smallest detail how many tons of carbon he emitted during his busy lifestyle (travels, vacations, numerous airplane flights and eating hamburgers). That's why he paid off his debt to the planet

Photograph: courtesy of Craig Cohon

Craig Cohon,
founder and initiator of the campaign *Walk it Back*

The goal is clear; we must remove as much carbon from the atmosphere as we have released into it

last November by donating over $1 million from his retirement fund to carbon elimination projects.

"Like many people of my generation, I had no idea for years about the dangers of climate change. However, when I learned that not all the carbon we emitted during our lifetimes was eliminated, I began investigating how this could still be achieved. I discovered that it is possible to remove huge amounts of CO_2 from the atmosphere, but it requires a lot of goodwill and investment. Technology is constantly being improved, but we must be faster and better at applying it. If we succeed in this, we will probably change the course of climate history," Cohon points out.

He supports his position with the fact that since 1860 we have released two trillion carbon dioxide into the atmosphere. That's why Craig is investing in new technologies that will suck up large amounts of carbon, including his 8,147 tons.

Craig accompanies the truck on its journey, where it interactively presents solutions that can help remove carbon dioxide.

"I think the most important thing is to try something – enough talk. Take action. Use materials that will absorb CO_2 or research how you can make a difference," Cohon says.

The Walk it Back campaign raises the question of how decarbonization is currently perceived and supported globally while at the same time calling for wider dialogue, coordination, knowledge acquisition, governance, and investment in relevant sectors to implement decarbonization solutions safely and quickly.

This campaign supports local, city-based projects that accelerate decarbonization efforts in the energy industry, transport, industry, agriculture, oceans and building industry.

Prepared by: Milica Radičević

Illustration: Pixabay/Gerd Altmann ▪ Photographs: (Cohon) courtesy of Craig Cohon; (bottom) Unsplash/Yohan Marion

APPLICATION OF ENVIRONMENTALLY FRIENDLY MATERIALS IN CONTEMPORARY ARCHITECTURE

The degradation of the environment has taken green architecture out of its exclusively aesthetic concept, leading it to today's inevitable need to create a more sustainable future. In Serbia, the concept of green and sustainable architecture is becoming increasingly popular, although many economic and bureaucratic obstacles challenge it, including a lack of support and corruption. We discussed the potential and advantages of this kind of architecture with the architect Ljubica Arsić, the designer of the Hemphouse on the Homolje Mountains. The Hemphouse demonstrated that, through the synergy of dedication, knowledge and love, a person can build a house that will not damage nature, a home to all living beings.

Although it represents a more sustainable way of constructing new buildings, green architecture often requires the demolition of existing buildings. The construction, operation and demolition of buildings are responsible for 40 per cent of global CO_2 emissions.

LJUBICA ARSIĆ, Master of Architecture, works in architecture, urban planning, and visual art. She completed her undergraduate and master's studies at the Faculty of Architecture in Belgrade. She gained professional experience in Serbia, Switzerland, India and Russia. Ljubica co-authors several projects in cooperation with the Swiss architectural firm *Bach Mühle Fuchs*. Since 2019, she has been engaged in numerous activities and projects with the architecture and urban planning company *Salewski Nater Kretz* from Zurich, and together they won numerous awards. She received the 44th Architecture Salon award for her Hemphouse project in 2022.

NATURAL MATERIALS

Besides hemp, natural materials suitable for building environmentally houses include wood, straw, clay and wool. These materials are renewable, biodegradable, abundant, and require less energy during production. They often have good insulating properties or regulate humidity, which helps reduce energy costs and improve indoor air quality.

Photographs: courtesy of Ljubica Arsić

A new, energy-efficient building takes up to 65 years to save the energy lost when the existing building is demolished. Furthermore, what happens to the material when the building's lifetime is over also poses an issue.

One of the biggest trends in sustainable building practice in the West is the concept of the circular economy, which sees waste as a resource and aims to minimize the use of limited resources. In many cases, preserving and renovating existing buildings is more sustainable than demolishing and building new ones.

Together with Daniel Fuchs, Ljubica is the co-author of numerous projects. They are currently working on a new project as part of a cooperative called *Stadtufer*, which bought an old textile factory to transform it into a living, working and cultural space. With this venture, they want to demonstrate how to reuse old structures, adding only sustainable materials and thus reducing the environmental footprint.

"I have the impression that there is a need in Serbia for a more focused discussion on the potential of adaptation and reconstruction of existing buildings instead of predominantly building new buildings. Many buildings throughout Serbia can be reconstructed. It is a huge job waiting to be done," Ljubica pointed out.

For urban planning to be truly sustainable, it must incorporate many factors and processes, such as existing facilities, green space, energy-efficient construction, alternative transportation options, and water management systems. By using biodegradable materials, incorporating energy-saving technologies, and fostering community through shared spaces, sustainable homes can be created that contribute to a greener future.

"Together with the Zurich-based company *Salewski Nater Kretz*, I worked on a project that entailed the development of the eastern part of Bern in Switzerland by the year 2065, in which regenerative agriculture practices are used to structure and manage the landscape that was conquered by removing the existing motorway. The project demonstrates how the collaborative work of architecture, urban planning, landscape architecture, traffic, agriculture, and sociology experts, which were previously mostly considered separate disciplines, creates a new city look," says Ljubica.

In Serbia, the awareness of the importance of sustainability in architecture is in its infancy because the understanding of issues such as CO_2 emissions and their impact on the environment is still limited. Using abstract terms like "climate crisis" or "negative footprint" is not as effective in promoting change compared to using more concrete words like "unhealthy", which are somehow closer to people.

"Another problem is that the end users, just like architects and construction people, are still far from the process of creating building materials and see them as a finished product imposed on the market. They often do not understand

the impact that the production and use have on the environment", Ljubica explains.

She adds that, for sustainable architecture to progress in Serbia, changes at the institutional and legal level, as well as the cooperation within the industry, the development of strong and competent architectural associations and the popularization of the topic are much needed.

"The future of architectural education in Serbia is going in the right direction, with an increasing emphasis on sustainable design. Although I can't say this with certainty, I believe that Serbian students are exposed to these ideas

through international projects and trends, which is certainly a step in the right direction for the Serbian architectural scene," says Arsić.

Humidity and heat regulation

Due to its uniqueness because of the biocomposite materials used and its architectural features, the house on the Homolje Mountains was declared the House of the Year in 2021. Considering that such projects are not common in Serbia, the challenges related to the project implementation were expected, starting with the procurement of machines for processing hemp, through the construction of walls made of hemp concrete, which is used for the first time in this part of Europe, the lack of experience and the uncertainty of how the walls will 'behave' after construction.

Hemp is a plant grown in different climates, needs very little water to grow and does not require pesticides. It can be grown throughout the year, with two or three harvests annually. The plant's stem, combined with a binder, produces a strong, durable, and environmentally friendly building material known as hempcrete, which is used in construction. Hempcrete has good insulation properties and can regulate interior humidity and store and release heat. Still, it is only used for non-bearing walls, as well as for floor and roof insulation.

The cement industry is a substantial source of greenhouse gas emissions, accounting for around five to seven per cent of global CO_2 emissions. Storing CO_2 by growing industrial hemp and using it in home construction is one way to decarbonize the construction industry.

"In addition to using sustainable materials, the project entails a rainwater collection system, which can later be used in the house, as well as the treatment of wastewater to make it safe for reuse and subsequent discharge into nature. There is also an organic waste collection system, which transforms organic waste into compost which is then used as natural fertilizer in the greenhouse," says Ljubica Arsić.

Regarding energy efficiency, the design process rested on the principles of passive solar energy collection through the orientation of the house and its openings, as well as the angle at which sunlight enters the house, depending on the season. Thanks to night cooling, pleasant indoor air conditioning is created without mechanical devices.

The project aims to show the beauty of the stripped, monolithic material of hemp stalks and lime binder, which changes over time and ages with the house. In addition to reducing the environmental footprint, it is also important to raise awareness of sustainable construction practices, launch a discourse on the Serbian architectural and construction scene, and challenge the common perception that environmentally friendly materials cannot meet the aesthetic standards of modern architecture.

Prepared by: Katarina Vuinac

URBAN BEEKEEPING REQUIRES LOCAL INITIATIVE

Urban beekeeping involves setting up and maintaining beehives with bees on the flat roofs of buildings in urban areas. Still, we can say that the real answer is environmentally conscious citizens, companies and institutions, those who recognize the importance of bees in the ecosystem, their vulnerability, and who decided to take care of bees and thus contribute to the preservation of the biodiversity of plants, bees and nature.

The bee is the most important insect, responsible for pollinating an incredible 85 per cent of flowering plants. The fact that bees produced every third bite of food speaks vividly about the invaluable role of bees as pollinators of various plant species that people use in their diet. The disappearance of bees in the last ten years has contributed to the fact that more and more people in cities are engaged in beekeeping.

Why are bees disappearing? The answer is not simple, and the fact that the International Union for Conservation of Nature (IUCN) has included some species of bees on the European Red List of endangered species threatened with extinction shows how serious the situation is.

What are we doing to save the bee? There are various mechanisms and ways in which ecologically conscious individuals, organizations and government representatives try to point out the danger of bees and take concrete actions to preserve them.

As much as the disappearance of bees is a global problem, urban beekeeping requires local action. Urban beekeeping needs a city. The global problem of disappearing bees through the revival of urban beekeeping becomes a local challenge, and its ecological aspect comes to the fore.

One of the pioneers in the development of urban beekeeping in Belgrade is the company MPC Properties, which, in cooperation with the Belgrade Beekeepers Association and the Mad Med Association, has installed as many as 12 beehives on the roofs of its shopping and business centers, including the UŠĆE commercial complex and the Navigator Business Center 2. In just a few months, the bees in these hives produced 130 kg of honey. In addition, as part of promoting and implementing its ESG strategy, MPC launched a series of green events and workshops, including a honey spinning series and a presentation on the importance of bees for children, to introduce them to the topic of urban beekeeping in an inclusive way. At the honey-making workshops, many MPC business partners had the opportunity, for the first time, to witness the process of making honey live, to get to know better how bees are organized, and to taste fresh honey directly from the MPC hives.

The beekeeping workshops for children, *Let's buzz together*, were organized in UŠĆE Hub in cooperation with the educational center *Košnica Dorćol*. They also attracted a lot of attention from the community, where the little ones had the opportunity to visit MPC beehives and plant honey plants in the garden in front of the UŠĆE business complex.

The MPC Properties company gave a good example of concrete actions to save bees from extinction while at the same time improving the environment in cities. If you have a suitable place for a mini apiary, contact the Belgrade Association of Beekeepers and the *Mad Med* Association, whose experienced beekeepers will evaluate each location and, in cooperation with MPC Properties, propose an urban beekeeping project.

Source: MPC Properties

Fotografija: MPC

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