

# The contribution of National Promotional Banks and Institutions in Europe

## Green Investments



Together we can do more !

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European Long-Term Association





## Preface by ELTI President Dario Scannapieco

Climate change and environmental degradation pose an existential threat to Europe and the entire world. To overcome these challenges, the European Union devised the European Green Deal strategy, which aims to transform the EU into a modern, resource-efficient and competitive economy, ensuring:

- net zero emissions of greenhouse gases by 2050;
- economic growth decoupled from resource use;
- no person and no place are left behind.

The environmental transition is a gradual process that unfolds over time rather than occurring as a singular event. The 2015 Paris Agreement, endorsed by 196 countries worldwide, triggered a multitude of measures and projects in nearly every sector globally: from small investments in heating systems to the development of electric transport infrastructure in both urban and rural areas, as well as the exploration of new technologies and cross-border renewable energy projects. All of these require long-term investments in the coming years.

Investment projects for the Green Transition are implemented at national, regional and local levels. Most project promoters are private but public investments are making a significant impact. Public promotion triggers a faster implementation of these projects to reach our ambitious goals. However, new and 'riskier' technologies also require public support.

National Promotional Banks and Institutions (NPBIs) all over Europe are experienced financing partners: they know their markets and the culture within their countries and they speak the language of their clients. In addition, NPBIs know how to shape financial products efficiently to achieve policy goals, such as the Green Transition, and how to attract much-needed private investments.

This brochure presents 13 European lighthouse projects, all of which are supported by their respective NPBIs – from Latvia to Greece, from Ireland to Bulgaria. I invite you to look at these examples as we hope that green projects will continue to find optimal financing solutions in the future. NPBIs are ready to provide this funding in the most efficient manner. Public and private project promoters are working side by side with NPBIs as a strong unit.

Together we can do more!

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# Bulgaria





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DEVELOPMENT BANK**





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**ХИТМОБИЛ**  
ЦЕНТЪР ЗА КОМПЕТЕНТНОСТ

# Hybrid Energy Technologies Ltd



**Hydrogen technology with zero  
emission**

**Sector**  
**Research and development**

Hybrid Energy Technologies Ltd was created in 2016 to work in the field of eco-energy, in particular solar energy and hydrogen technologies. Several projects have been prepared, the first of which is the current project.

So far, the company has not developed any other activity. The Bulgarian Development Bank funded a project which includes supply, installation, commissioning, operational training and warranty support of a mobile/removable Hydrogen Vehicle Refueling Station. It was developed in cooperation with experienced commercial partners and the Institute of Electrochemistry and Energy Systems "Academic Evgeni Budevski" at the Bulgarian Academy of Sciences (IEES-BAS).

The project consists of 2 main modules:

- Module 1 – Hydrogen production (stationary module)
- Module 2 – Mobile charging station located in a "2D" container, which performs compression, storage and charging of vehicles /container arrives ready/.

Both modules are of EC origin. The individual units from the respective manufacturers and comply with all EU norms for working with gases under pressure. The project is a pilot project and is part of the conditions stipulated in the "EU Green Deal", namely that there should be such a hydrogen station every 300 km on every highway, and every 150 km on all other categories of roads.



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**ХИТМОБИЛ**  
ЦЕНТЪР ЗА КОМПЕТЕНТНОСТ

# Hybrid Energy Technologies Ltd

„Хибридни енергийни технологии“ ЕООД е регистрирана през 2016 г., за да работи в областта на еко-енергията, по-специално соларната енергия и водородните технологии. Разработени са няколко проекта, първият от които е настоящият проект. Досега компанията не е развивала никаква друга дейност. Българска банка за развитие финансира проект, който включва доставка, монтаж, въвеждане в експлоатация, оперативно обучение и гаранционна поддръжка на мобилна/преместваема станция за зареждане с водород. Тя е разработена в сътрудничество с опитни търговски партньори и Института по електрохимия и енергийни системи „Академик Евгени Будевски“ при Българската академия на науките (IEES-BAS).

Проектът се състои от 2 основни модула:

- Модул 1 – Производство на водород (стационарен модул).
- Модул 2 – Мобилна зарядна станция, разположена в контейнер „2D“, която извършва компресиране, съхранение и зареждане на превозни средства/контейнерът пристига подготвен/.

И двата модула са с произход от ЕС. Отделните части от съответните производители отговарят на всички норми на ЕС за работа с газове под налягане. Това е пилотен проект и е част от условията, определени в Зеления пакт на ЕС, а именно, че следва да има такава водородна станция на всеки 300 км. по всяка магистрала и на всеки 150 км. по всички останали категории пътища.“

## Contact

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**Sofia, Bulgaria**  
**Highways in Bulgaria**

# Croatia



# HBOR

HRVATSKA BANKA  
ZA OBNOVU I RAZVITAK



## Korčula light reconstruction



**Reconstruction of the city's  
public lighting system Korčula**



**Sector  
Municipal infrastructure**

With the project "Reconstruction of the public lighting of the city of Korčula" about 74% of the lamps in this city were replaced. New LED lamps were installed instead of 1584 old lamps. The largest number of old lamps were technically outdated lamps with technology from the '70s and '80s, which contained mercury bulbs, caused high consumption of electricity and significant light pollution, while at the same time street lighting was below the level required by the relevant norm HRN EN 13201.

The project helped to meet the requirements of the "Law on Protection against Light Pollution". The new lamps have autonomous power regulation, and their power is reduced by 50% late at night, when the number of vehicles and pedestrians on the streets is significantly reduced.

## Korčula light reconstruction

Projektom „Rekonstrukcija gradske javne rasvjete Korčule“ zamijenjeno je oko 74% svjetiljki u sustavu javne rasvjete grada.. Umjesto 1584 stare svjetiljke ugrađene su nove LED svjetiljke. Najveći broj starih svjetiljki bile su tehnički zastarjele s tehnologijom iz '70-ih i '80-ih godina koje su sadržavale živine žarulje, uzrokovale veliku potrošnju električne energije i značajno svjetlosno onečišćenje, dok je istovremeno rasvijetljenost ulica bila ispod razine koju zahtijeva relevantna norma HRN EN 13201.

Provedbom projekta zadovoljeni su zahtjevi Zakona o zaštiti od svjetlosnog onečišćenja. Nove svjetiljke imaju autonomnu regulaciju snage te im se snaga reducira za 50% u kasnim noćnim satima kad je značajno smanjena količina vozila i pješaka na ulicama..

### Link



### Contact

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# PILI



**PILI – a pioneer in decarbonizing the color industry.**

**Sector**  
**Green chemistry**  
**Research and development**

PILI is a French biotech and green chemistry company founded in 2015 in the South of France to develop and produce biobased dyes and pigments to reduce the environmental footprint of the color industry, meeting the challenges of the color industry decarbonization by drastically reducing the use of chemicals and fossil resources, particularly oil.

Thanks to its hybrid technology combining industrial fermentation and green chemistry, the company offers an ecological and competitive alternative to petrochemical dyes and pigments, therefore radically change the textile industry, reducing its reliance on synthetic dyes as well as the huge amount of water pollution produced by dyeing facilities and offering a revolutionary step forward in the pursuit of truly sustainable fashion.

In a nutshell, PILI uses similar process design as large-scale fermentation techniques (used in the biopharmaceutical industry for decades) but instead of creating a tasty beverage, the company “brews” renewable, sustainable color. At the end of the fermentation process, the final pigments are separated by simple filtration.



## PILI

### Advantages

Better for the environment: PILI's microorganisms produce dye using no petrol, no chemicals, and grow in 5 times less water than regular dye at room temperature.

Better for health: PILI's dyes do not contain PCA (para-chloro aniline) which are the main suspects in health issues related to textile dyes.

Renewable: PILI'S first strains use sugar as a raw material.

### What's next?

Today, PILI focusses on the textile industry since it is where the highest volumes of dyes are used and it's the second most polluting industry. With around 30 employees, the company has invested, since its creation, more than €30 million to industrialize its innovative processes and accelerate its industrial scale-up by producing the first tons of high-performance bio-based indigo. The company has already secured several million euros of pre-orders of biobased dyes and pigments in the textile while it also targets other polluting applications such as, inks, polymers, paints & coatings.

### Link



### Contact

**PILI**

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France

France



**Caisse  
des Dépôts**  
GROUPE



# Dijon Metropole



## Hydrogen-powered green public transport in Dijon

## Sector Hydrogen transport sector

The metropolitan area of Dijon (23 member communes, 260,420 inhabitants) developed a regional climate, air and energy plan already in 2017 whose objectives include a 40% reduction in greenhouse gas emissions by 2030, the development of renewable energy sources to cover 60% of energy needs in 2050, and the preservation of carbon sinks in order to achieve carbon neutrality by 2050. Dijon decided in 2019 to switch to a hydrogen public mobility by 2030. The Dijon metropolitan council has voted a 60 million euros budget to acquire 53 hydrogen buses and 22 hydrogen refuse trucks.

The project consists of two sub-projects to foster Dijon's climate neutral shift in mobility: The first part includes the acquisition (ordering and commissioning) of 27 hydrogen buses and of 8 hydrogen refuse collection trucks. The 2nd part concerns the recharging infrastructures and consists in the construction, implementation and operation of two hydrogen production and distribution facilities in Dijon area: one located in the north ("Dijon Nord", 400 kg hydrogen/day) and the second one in the south ("Dijon Sud", 1600 kg hydrogen/day) of the metropolitan area. Both stations are built up by a dedicated company called "Dijon Metropole Smart EnergyHy".



# Dijon Metropole

As part of an ecosystem based on the recycling of household waste and the region's renewable energies, heavy duty vehicles will be powered by low carbon hydrogen. The construction of two hydrogen infrastructures in the municipality of Dijon allows hydrogen production in a clean way by a process of electrolysis of water supplied by electricity partly produced by recycling waste from the metropolis of Dijon. Thereby these stations will help valorising waste management as the hydrogen will be produced thanks to the energy produced in the waste incineration plant (the produced electricity will be used in an electrolysis unit). The produced low carbon hydrogen will be used to power Fuel Cell Electrical Vehicles like buses, refuse collection trucks and light vehicles.

CDC (Banque des Territoires) is supporting Dijon Metropole with a fixed-rate "Mobi Loan" of € 5 million over a period of 15 years for the acquisition of the rolling stock (i.e., the first part of the project). This offer dedicated to the modernization of transport infrastructure gives priority to projects linked to environmentally friendly mobility, as is the case with the one carried out by Dijon Metropole.

Depuis 2019, Dijon Métropole a lancé un projet de production locale d'hydrogène à partir de l'électrolyse de l'eau à raison de 440 kg d'hydrogène par jour pour alimenter dans un premier temps 8 bennes à ordures ménagères et 16 bus. Utilisant la technologie de la pile à combustible, les véhicules ne généreront aucunes émissions de gaz à effet de serre, ni de particules. Silencieux et n'émettant pas de chaleur, le projet vise à réduire les émissions de gaz à effet de serre émis par les transports publics sur le territoire de 4200 tonnes de CO2 par an à partir de 2026, soit l'équivalent de 35 millions de kilomètres en voiture.

CDC (Banque des Territoires) accompagne Dijon Métropole avec un « Prêt Mobi » à taux fixe de 5 millions d'euros sur une durée de 15 ans pour l'acquisition du matériel roulant (soit la première partie du projet). Cette offre dédiée à la modernisation des infrastructures de transport donne la priorité aux projets liés à la mobilité respectueuse de l'environnement.

## Links

**Communication Banque des Territoires**

**Communication Dijon Metropole**

**Press article "Les Echos"**

## Contact

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Germany



# KFW



## Crafting Future GmbH



**Crafting Future – From Single-Use to Reuse: The Takeaway Packaging Revolution**

**Sector**  
**Manufacturing, Reuse, Circular Economy, and plastics products**

Did you know that by 2040 global plastic production will rise to some 29 million tons a year without any meaningful action taken to reduce this exponential growth? If you take into account that only an estimated 9% of plastics are being recycled and some 12% are being incinerated, the incredible scale of the problem our earth faces becomes more obvious, given that plastics take up to 500 years to decompose. The often discussed microplastics form just one additional aspect of the wider issue, with large amounts of plastic waste ending up in our rivers, lakes, and oceans.

Plastic, however, will not disappear. As a product it offers many advantages. Thus, what can be done is to change the way we treat and use plastics!

At EU level the EU Commission has already proposed a ban on 10 single use plastic items. The proposal has by now been adopted. But this can only be a beginning and banning products is of course the most invasive in terms of rights. When it comes to microparticles, huge investments will be necessary into upgrading sewage treatment plants, to take up another legislative proposal currently being discussed by the EU legislator.

But between banning the use of plastic and filtering out micro-particles from wastewater, recycling can play an important role. Alas, in the EU only some 33% of plastic waste is being recycled. In the US, the plastic recycling rate is below 10%. And globally...

## Crafting Future GmbH

The first product was a reusable coffee cup produced – not even from plastics, but from compostable rice husks. However, as others before, the three founders soon realised that their cup was wrongly sorted with plastic, instead of ending up with organic waste. Thus, the idea to create a product that is completely bound in cycles was born: Innovative Reusable Food Packaging like the Rebowlearned them the KfW Entrepreneurs' Award in 2021.

Crafting Futures reusable packaging portfolio like the Rebowl combine durability, functionality, reusability, and recyclability at the end of a service life. Reuse is followed by recycle, which forms a second life cycle. A simple, sustainable, yet still revolutionary, principle.

To achieve these sustainability targets, Crafting Future closely cooperates with research institutions, such as the Institute for Bioplastics and Biocomposites in Hannover. These close alliances with science help the young company to continuously improve their products and ensure their quality and measurable sustainability, on a scientific level! They already decreased the CO2 footprint of their products by more than 30% by introducing innovative production technologies.

The team is driven by a joint mission: To help reduce plastic waste and make the world a better place. Everybody is invited to join this challenge. Small steps by many can make the difference. The young founders decided to undertake not just one, but several steps, taking them closer to realising their vision.

### Links

**KfW Stories: We want to be  
role models**

**Let's talk Merhweg Podcast:  
Who is behind Crafting  
Future?**



### Contact

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# Germany





# everwave GmbH



**everwave – Taking up responsibility together with companies by organizing holistic cleanup projects all over the world that collect tons of plastic and waste from waters**

**Sector  
Service**

everwave frees rivers worldwide from waste - and thus protects the oceans. By 2025, around 80 million tons of plastic waste will be floating in the oceans. The global challenge arises from the fact that more and more waste is being produced, which ends up in the environment due to a lack of disposal systems. This also applies to rivers, which are the main transporters of waste into oceans. When everwave was founded in December 2018, the startup decided to tackle this problem with a holistic approach: everwave is all about collecting waste and building up new structures for waste management.

Germany is the European leader when it comes to waste production. And Germany likes to export waste, especially to countries that do not yet have a developed waste management system. Europe's exported waste then ends up in landfills and from there it is not far into rivers. Together with companies, everwave takes over responsibility for waste with a concept called Plastic Credits. And this is how it works: everwave collects waste from rivers on behalf of companies. For every euro, everwave retrieves one kilogram of waste. This is an opportunity not only for everwave. In this way, companies wishing to assume ecological responsibility are offered a solution in which business and environmental protection work hand in hand.

Today everwave can count on the support of years of partnerships with well-known companies such as Mastercard, Grohe and the Audi Foundation for the Environment and since 2021, well-known investors. During the holistic Cleanups, the start-up uses technologies like the CollectiX garbage boats. Three of these boats are already in use in the Balkan Region and Asia. They are complemented by drones connected to artificial intelligence that not only track the waste but also analyze it, thus allowing conclusions to be drawn about the composition and origin of the waste (in collaboration with DFKI). So that the waste does not end up in nature again, the team makes sure, that the collected waste is reused as much as possible in local infrastructure. To really create a system change everwave supports the implementation of new waste management structures and e.g. builds sorting facilities for waste on its operating sites. In addition, everwave raises public awareness of the litter problem in the oceans and rivers. Through keynotes and PR work, everwave raises awareness and makes clear, why we in Germany have a responsibility for waste. For the implementation of circular economy and the development of new infrastructures in the countries of operation, everwave is also in exchange with politics, non-profit and corporate stakeholders. In a perfect world, there would be a circular economy, where no waste ends up in the nature. But until then, everwave cleans up what ends up in rivers to help promoting a circular economy, so far more than 1.000.000 KG.



NRW.BANK

everwave

## everwave GmbH

everwave befreit weltweit Flüsse von Müll - und schützt so die Meere. Bis zum Jahr 2025 werden rund 80 Millionen Tonnen Plastikmüll in den Weltmeeren schwimmen. Die globale Herausforderung besteht darin, dass immer mehr Müll produziert wird, der aufgrund fehlender Entsorgungssysteme in der Umwelt landet. Dies gilt auch für Flüsse, die die Haupttransporteure von Abfall in die Ozeane sind. Mit der Gründung von everwave im Dezember 2018 beschloss das Startup, dieses Problem mit einem ganzheitlichen Ansatz anzugehen: everwave sammelt Abfälle und baut neue Strukturen für die Abfallwirtschaft auf.

Deutschland ist europäischer Spitzenreiter bei der Müllproduktion. Und Deutschland exportiert gerne Müll, vor allem in Länder, die noch kein entwickeltes Abfallwirtschaftssystem haben. Europas exportierte Abfälle landen dann auf Deponien und von dort ist es nicht mehr weit bis in die Flüsse. Gemeinsam mit Unternehmen übernimmt everwave mit einem Konzept namens Plastic Credits die Verantwortung für den Abfall. So funktioniert es: everwave sammelt im Auftrag von Unternehmen Müll aus Flüssen ein. Für jeden Euro holt everwave ein Kilogramm Müll heraus. Das ist eine Chance nicht nur für everwave. Unternehmen, die ökologische Verantwortung übernehmen wollen, wird so eine Lösung geboten, bei der Wirtschaft und Umweltschutz Hand in Hand arbeiten.

Heute kann everwave auf die Unterstützung jahrelanger Partnerschaften mit namhaften Unternehmen wie Mastercard, Grohe und der Audi Stiftung für Umwelt und seit 2021 auch mit namhaften Investoren zählen. Bei den ganzheitlichen Cleanups setzt das Start-up Technologien wie die CollectiX-Müllboote ein. Drei dieser Boote sind bereits in der Balkanregion und in Asien im Einsatz. Ergänzt werden sie durch Drohnen, die mit künstlicher Intelligenz verbunden sind und den Müll nicht nur aufspüren, sondern auch analysieren und so Rückschlüsse auf die Zusammensetzung und Herkunft des Mülls zulassen (in Zusammenarbeit mit dem DFKI). Damit die Abfälle nicht wieder in der Natur landen, sorgt das Team dafür, dass die gesammelten Abfälle so weit wie möglich in der lokalen Infrastruktur wiederverwendet werden. Um einen wirklichen Systemwechsel herbeizuführen, unterstützt everwave die Implementierung neuer Strukturen in der Abfallwirtschaft und baut z.B. Sortieranlagen für Abfälle. Darüber hinaus sensibilisiert everwave die Öffentlichkeit für das Littering-Problem in den Meeren und Flüssen. Durch Keynotes und Öffentlichkeitsarbeit sensibilisiert everwave und macht deutlich, warum wir in Deutschland eine Verantwortung für den Abfall haben. Für die Umsetzung der Kreislaufwirtschaft und den Aufbau neuer Infrastrukturen in den Einsatzländern steht everwave auch im Austausch mit Politik, Non-Profit-Organisationen und Unternehmen. In einer perfekten Welt gäbe es eine Kreislaufwirtschaft, in der kein Abfall mehr in der Natur landet. Aber bis dahin säubert everwave das, was in den Flüssen landet, um eine Kreislaufwirtschaft zu fördern. Bisher hat das Startup mehr als 1.000.000 KG Müll gesammelt!

### Links



### Contact

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# Greece







ΔΗΜΟΣ **Άργους  
Μυκηνών**

# Municipality of Argos-Mycenae



**Supply of magnetic induction lighting fixtures for the energy upgrade of municipal street lighting at the Municipality of Argos-Mycenae**



**Sector**  
**Energy Efficiency**

With an international tender, a company was awarded a project of 12 million regarding the supply and installation of magnetic induction lighting fixtures replacing old technology lamps for the street lighting of the cities of Argos and Mycenae. A total of 15.895 bulbs were replaced.

The electricity saving from the replacement of the lamps amounted to 7.206.673 KWh/year and the annual reduction of street lighting expenditure amounted to €1.297.201 per year. For the environment, the benefit in CO<sub>2</sub> was 7.127,40 Tons/KWh.

The Municipality has demonstrated its strategic vision and intent for the project through a special study which presents the total benefits of the project including energy saving and cost reduction. The same study justifies the viability of the project with the satisfaction of the required financial ratios.

This project can be replicated by any other municipality. This project has led to a brighter streetlighting and thus increased safety for the citizens. All the funding comes from CDLF.

The vision of the municipality for energy saving, cost reduction, increased safety for the citizens with a significant environmental benefit through the CO<sub>2</sub> reduction has been achieved with the implementation of this project. The significant cost reduction leads to excess availability of funds which are used for other sustainable/green developments. Therefore a long term sustainable impact on the community is evident.

The project has led to a reduction of CO<sub>2</sub> from 12.705,45 to 5.578,05 tons/KWh thus there has been a reduction of 7.127,40 tons/KWh. Moreover, new working positions have been created especially for electricians.



ΔΗΜΟΣ **Άργους  
Μυκηνών**

# Municipality of Argos-Mycenae

Με διεθνή διαγωνισμό κατακυρώθηκε σε εταιρεία έργο 12 εκατομμυρίων για την προμήθεια και εγκατάσταση φωτιστικών μαγνητικής επαγωγής αντικαθιστώντας λαμπτήρες παλαιάς τεχνολογίας για τον οδοφωτισμό των πόλεων Άργους και Μυκηνών. Αντικαταστάθηκαν συνολικά 15.895 λαμπτήρες.

Η εξοικονόμηση ηλεκτρικής ενέργειας από την αντικατάσταση των λαμπτήρων ανήλθε σε 7.206.673 KWh/έτος και η ετήσια μείωση της δαπάνης οδοφωτισμού ανήλθε σε 1.297.201 € ετησίως. Για το περιβάλλον, το όφελος σε CO<sub>2</sub> ήταν 7.127,40 τόνοι/KWh.

Ο Δήμος έχει αποδείξει το στρατηγικό του όραμα και τις προθέσεις του για το έργο μέσω ειδικής μελέτης που παρουσιάζει τα συνολικά οφέλη του έργου συμπεριλαμβανομένης της εξοικονόμησης ενέργειας και της μείωσης του κόστους. Η ίδια μελέτη δικαιολογεί τη βιωσιμότητα του έργου με την ικανοποίηση των απαιτούμενων οικονομικών δεικτών.

Αυτό το έργο μπορεί να αναπαραχθεί από οποιονδήποτε άλλο δήμο. Αυτό το έργο οδήγησε σε φωτεινότερο φωτισμό των δρόμων και ως εκ τούτου αυξημένη ασφάλεια για τους πολίτες. Όλη η χρηματοδότηση προέρχεται από το CDLF.

Το όραμα του δήμου για εξοικονόμηση ενέργειας, μείωση κόστους, αυξημένη ασφάλεια για τους πολίτες με σημαντικό περιβαλλοντικό όφελος μέσω της μείωσης του CO<sub>2</sub> έχει επιτευχθεί με την υλοποίηση αυτού του έργου. Η σημαντική μείωση του κόστους οδηγεί σε αυξημένη διαθεσιμότητα κεφαλαίων που χρησιμοποιούνται για άλλες βιώσιμες/πράσινες εξελίξεις. Ως εκ τούτου, ο μακροπρόθεσμος βιώσιμος αντίκτυπος στην κοινότητα είναι εμφανής.

Το έργο οδήγησε σε μείωση του CO<sub>2</sub> από 12.705,45 σε 5.578,05 τόνους/KWh, επομένως υπήρξε μείωση κατά 7.127,40 τόνους/KWh. Επιπλέον, έχουν δημιουργηθεί νέες θέσεις εργασίας ειδικά για ηλεκτρολόγους.

## Contact

**Municipality of Argos-Mycenae**

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**Project location:**

**City of Argos and City of Mycenae**

# Ireland





**Anseo chun gnó a fhorbairt**

Corparáid Baincéireachta  
Straitéiseach na hÉireann

**Here to build business**

Strategic Banking  
Corporation of Ireland



# Woodco Renewable Energy Ltd



## Woodco Renewable Energy Ltd

### Sector

**Biomass Heating Solutions  
 Sanitation  
 Energy/heat production with zero emissions**

The core business activity is the manufacture and supply of cleantech / biomass heating products to both domestic and commercial users. The business is highly acclaimed with several awards: Green Product Award at the Green Energy Awards; Innovator of the Year Award at Small Firms Association Awards; Enterprise Ireland Innovation Award; European Innovation Council (EiC) – EiC Seal of Excellence Award.

The business is also involved in the renewable energy business, as an alternative to the use of fossil fuels to heat both business premises and domestic homes. The use of renewable biomass e.g. sustainably produced willow as an alternative to fossil fuels also provides Irish farmers with an alternative enterprise to supplement their existing core farming enterprises and thus help to sustain more viable farm families is an excellent example of a positive social impact by this enterprise.

Expansion plans are heavily weighted towards the commercial sector, with several large scale projects commissioned in recent years. Many other large projects are underway and planned. A cross section of large projects completed in 2022 include: Agri sector (mushroom / pig), hotels, care homes, engineering business, large retail outlet, religious institution. The company is poised for significant growth, driven by a need for economies worldwide to de-carbonise their energy supply sector.



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Corporation of Ireland

woodco

# Woodco Renewable Energy Limited

Woodco acquired Bioenergy Installations Ltd in January 2021 – 100% subsidiary of Rathlynin Investments Ltd. It is a Special Purpose Vehicle (SPV) known as an ESCO (Energy Supply Contract).

The company purchases the biomass boilers directly from Woodco and supplies heat under an ESCO to businesses with a large energy demand, e.g. nursing homes, schools, etc. The ESCO takes care of the operation and maintenance of the system and organises the supply of the fuel (wood pellets), with the client paying only for the heat it uses. The ESCO receives the 15 year SSRH (Support Scheme for Renewable Heat) and pays Woodco for the equipment from this revenue stream. The SEAI (Sustainable Energy Association of Ireland) administers the SSRH. ESCO clients are guaranteed a discount of 10% to 15% compared to the fossil fuel equivalent (oil / gas). The market position is reviewed annually with any price adjustments made. Existing fossil fuel sources must be displaced for the ESCO to apply. The client has no Capex, maintenance or operating costs, only paying for the heat used, with guaranteed cost saving compared to using oil/gas.

Employment and Investment Incentive Scheme EIS funding of 0.5 million was raised in 2021, with a further €1 million planned in 2022 to finance these ESCO's.

Woodco also has a Solar PV installation division which began operations in mid-2018. The company is one of the leading Solar PV installation companies in Ireland undertaking both domestic and commercial Solar PV projects. Since January 2022 clients with Solar PV panels are paid for excess power which is fed into the national grid. This is seen as a game changer to the development of commercial scale Solar PV in Ireland and Woodco is experiencing strong interest in this area, with four significant sized projects completed in 2022: 138kw Seaworld in Lahinch; 180kw Knockfee Farm, Cahir Co. Tipperary; 90kw Woodlands Hotel, Adare, Co. Limerick; 116kw Apartment complex in Dublin (Note: kw = Kilowatt; i.e. energy unit).

## Links



## Contact

Woodco Renewable Energy Ltd  
Ger Crosse (Director)  
Woodco Renewable Energy Limited  
"Woodco"  
Mark Harris & Maurice Fitzpatrick

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# Italy



cdp 



## Be Charge + Plenitude



Be Charge + Plenitude

Sector

Sustainable mobility

The main objective of the project supported by Cassa Depositi e Prestiti is to implement a network of publicly accessible recharging stations for light-duty electric vehicles to allow electric charging along the TEN-T road networks in Italy, France, Germany, Austria, Spain, Portugal, Slovenia and Greece.

The project concerns the deployment of ca.500 charging stations (sites) equipped with ca. 2.000 recharging points, with a minimum power output of 150 kW each and with more than 500 grid connection of 600 kVA each, fully operational and 24/7 available for consumers.

The project benefits from the established presence in each target country of Eni-Plenitude group through a widespread network of proprietary gas stations that could host EV chargers (Italy, Germany, Austria, France, Spain, Slovenia) and/or a strong presence in energy retail market (Italy, France, Spain, Portugal, Greece).

The project of Be Charge is absolutely in line with European strategy to reduce CO2 emissions through the growth of EV cars throughout the European territories. In addition, Be Charge has decided that 100% of the energy supplied by the EVCs will come from renewable sources through the Guarantee of Origin certification.



plenitude



becharge

## Be Charge + Plenitude

L'obiettivo principale del progetto è la realizzazione di una rete di stazioni di ricarica elettrica per veicoli elettrici leggeri lungo le reti stradali TEN-T in Italia, Francia, Germania, Austria, Spagna, Portogallo, Slovenia e Grecia.

Il progetto prevede la realizzazione di circa 500 stazioni di ricarica dotate di circa 2.000 punti di ricarica, con una potenza minima di 150 kW ciascuna e con oltre 500 connessioni alla rete da 600 kVA ciascuna, pienamente operative e disponibili 24 ore su 24, 7 giorni su 7.

Il progetto beneficia della presenza consolidata, in ciascun Paese target, del gruppo Eni-Plenitude attraverso una rete capillare di stazioni di servizio proprietarie che potrebbero ospitare le stazioni di ricarica per veicoli elettrici (Italia, Germania, Austria, Francia, Spagna, Slovenia) e/o una forte presenza nel mercato retail dell'energia elettrica (Italia, Francia, Spagna, Portogallo, Grecia).

Il progetto di Be Charge è assolutamente in linea con la strategia europea di riduzione delle emissioni di CO<sub>2</sub>, da perseguire anche attraverso la crescita della diffusione delle auto elettriche in tutti i territori europei. Inoltre, il 100% dell'energia fornita dagli EVC provverrà da fonti rinnovabili attraverso la certificazione della cd. Garanzia d'Origine.

### Contact

CDP:

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Project location:  
Spain, France, Austria,  
Germany, Italy, Portugal,  
Slovenia, and Greece

# Latvia





# EE in multi-apartment buildings



## Energy Efficiency in Multi-Apartment Buildings in Latvia

## Sector

Residential housing / energy efficiency

At the end of 2016, ALTUM started implementing a new program for improving the energy efficiency and transitioning to renewable energy technologies of multi-apartment buildings financed by ERDF. In 2016 and 2017 a lot of work was spent on informational and advisory activities to assist final beneficiaries to prepare project applications. 94% of the projects supported within the programme have been committed since January 1, 2018. Hereinafter, all numbers and project (expected) results are provided for the projects committed since 2018.

The programme, administered by ALTUM, provides loans or guarantees for energy efficiency projects and grants (50% of eligible project costs) to projects implemented by housing associations and building managers. The final recipients are owners of apartments – private persons and companies (a very limited number of apartments are owned by legal entities).

Energy efficiency in multi-apartment buildings was supported by ERDF also in the 2007-2013 EU funds programming period but only in the form of grants (the programme was not managed by ALTUM), and loans had to be attracted only from the commercial banks.

# EE in multi-apartment buildings

The main goal is to provide a simple way for housing associations to access financing for project implementation – primarily through commercial loans that were, where necessary, guaranteed by ALTUM, and for projects that were considered too risky by commercial banks – to access loans provided by ALTUM. For all projects also grants were made available, and Altum monitored the implementation of projects for compliance with the grant rules and loan/ guarantee requirements.

As a result, commercial banks expanded their offering and could provide better loan terms, since a part of their risk was secured by ALTUM guarantees (up to 80% of the eligible loan amount). Three commercial banks have provided continuous support for energy efficiency projects.

As part of the project implementation monitoring process ALTUM has also helped the final recipients to ensure appropriate quality of construction works, and the role of building supervisors in the renovation process.

As a result, by the end of 2023 the total number of newly renovated and energy efficient buildings, mainly multi-family houses will be 589. These buildings not only provide a better quality of life for their inhabitants (lower energy bills, improved micro-climate and ventilation, lower expected repair works in the upcoming years, increased lifespan of the buildings built in the Soviet period), but also serve as good practice examples for their neighbours and encourage other people to start implementing energy efficiency activities in their own property.

## Links



## Contact

**ALTUM**

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# Netherlands





# Elestor B.V.



**Elestor – a Venture Capital investment in Long Duration Energy Storage**

**Sector**  
**Manufacturing, energy storage**

Elestor is a scale-up developing an innovative battery: a hydrogen bromine flow battery for large scale (GWh), long duration (8h – several days) electrical energy storage. It has the potential to reach an economically competitive price point for its technology within 3 years, while using battery materials that are and remain abundant in the future.

Elestor's battery technology has the potential to ensure a secure supply of power by bridging the gap in low-solar-irradiation and low-wind periods which Lithium-ion battery technologies cannot. Elestor's bold ambition is to replace gas-fired power plants by using its battery at a GW scale as bi-directional power plants.

Elestor technology can be integrated in hydrogen infrastructures and electrolyzers, resulting in largely reduced production costs of green hydrogen. Furthermore, through this integration of both hydrogen and electricity-based energy storage technologies, new optimization options on overall energy system level are unlocked.

## Elestor B.V.

Het vermijden van materiaalschaarste en het vinden van de meest kosteneffectieve oplossing is het uitgangspunt geweest voor het ontwerp van Elestor. Alle materialen zijn in zeer grote hoeveelheden beschikbaar - de wereldwijde broomreserves bedragen in totaal een astronomische 100 biljoen ton, gewonnen uit zeewater - waardoor geopolitieke risico's worden vermeden. Door al vroeg in het proces blijk te geven van een sterke overtuiging, heeft Invest-NL een cruciale rol gespeeld bij het aantrekken van 15 miljoen euro van commerciële investeerders in deze investeringsronde, met name van hoofdinvesteerder Equinor Ventures, Vopak Ventures en bestaande aandeelhouder InnoEnergy.

De investeringsronde van €30 miljoen werd afgerond met een bijdrage van €15 miljoen van Invest-NL, waarvan 43% gestructureerd is als een Innovatielening die gedekt wordt door de InnovFin MKB-garantie van het EIF. Er is al concrete commerciële belangstelling voor de batterijen van Elestor vanuit de hele EU. Deze financieringsronde stelt Elestor in staat om zijn R&D-routekaart uit te voeren, de productie op te schalen en zijn kostenverlagingsdoelstellingen te halen.

Samenvattend kan Elestor met zijn economische langetermijnopslag van elektriciteit het elektriciteitsnet volledig koolstofvrij maken.

### Link



### Contact

**Elestor B.V.**

**Guido Dalessi, CEO**

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**Project location:**

**Arnhem, the Netherlands**

# Poland



# BGK

BANK GOSPODARSTWA  
KRAJOWEGO



# Hydrogen Mobility Phase 2



## Clean cities – hydrogen mobility in Poland (phase II)

## Sector Alternative Fuel Infrastructure (Transport)

BGK promoted the national distribution of hydrogen refuelling stations (HRSs) by financing the construction of five HRSs in Bielsko-Biala, Gorzow Wielkopolski, Cracow, Pila and Warsaw. This project comprises the necessary infrastructure, including stationary hydrogen storage facilities. The projects helps to expand the HRSs network being under development within "Clean Cities – Hydrogen mobility in Poland (Phase I)" financed by CEF Transport Blending Facility. The project will be an important element supporting the implementation of the "Polish Hydrogen Strategy until 2030 with an outlook until 2040".

The effects of the project can be used in the further development of automotive quality hydrogen production installations. The implementation of the described HRS network will create the necessary basis for vehicle manufacturers to start the roll-out and scaling of FCEVs in the European transport sector.

The main expected results of the project are:

- reduction of infrastructure bottlenecks and gaps related to refuelling allowing uninterrupted movement of hydrogen-power vehicles along the TEN-T road network in Poland;
- promoting of economically efficient available 24/7 transport (including public transport) based on hydrogen refuelling contributing to further economic growth and competitiveness.
- reduction of greenhouse gas emissions, promoting of clean transport, fuel security, and environmental protection;
- meeting the needs of the users related to the access to hydrogen refuelling infrastructure

# Hydrogen Mobility Phase 2

Rozwój infrastruktury tankowania wodoru w Polsce zapewni także transgraniczny ruch pojazdów wodorowych na głównych szlakach transportowych i europejskich korytarzach TEN-T, w pierwszej kolejności w korytarzach Bałtyk-Adriatyk i Morze Północne-Bałtyk Sieci Bazowej TEN-T (szczególnie od Niemiec do krajów Morza Bałtyckiego, a stamtąd na Słowację, Austrię i Włochy). Wszystkie wymienione HRS-y zostaną wyposażone w dystrybutory o ciśnieniu 350 i 700 barów, które pozwolą na tankowanie wszelkiego rodzaju transportu drogowego napędzanego wodorem. Wodór dostarczany do pięciu nowych HRS zainstalowanych w ramach tego Projektu będzie pochodził z nisko- i/lub zeroemisyjnych instalacji do produkcji wodoru budowanych przez PKN Orlen w Polsce.

## Link



## Contact

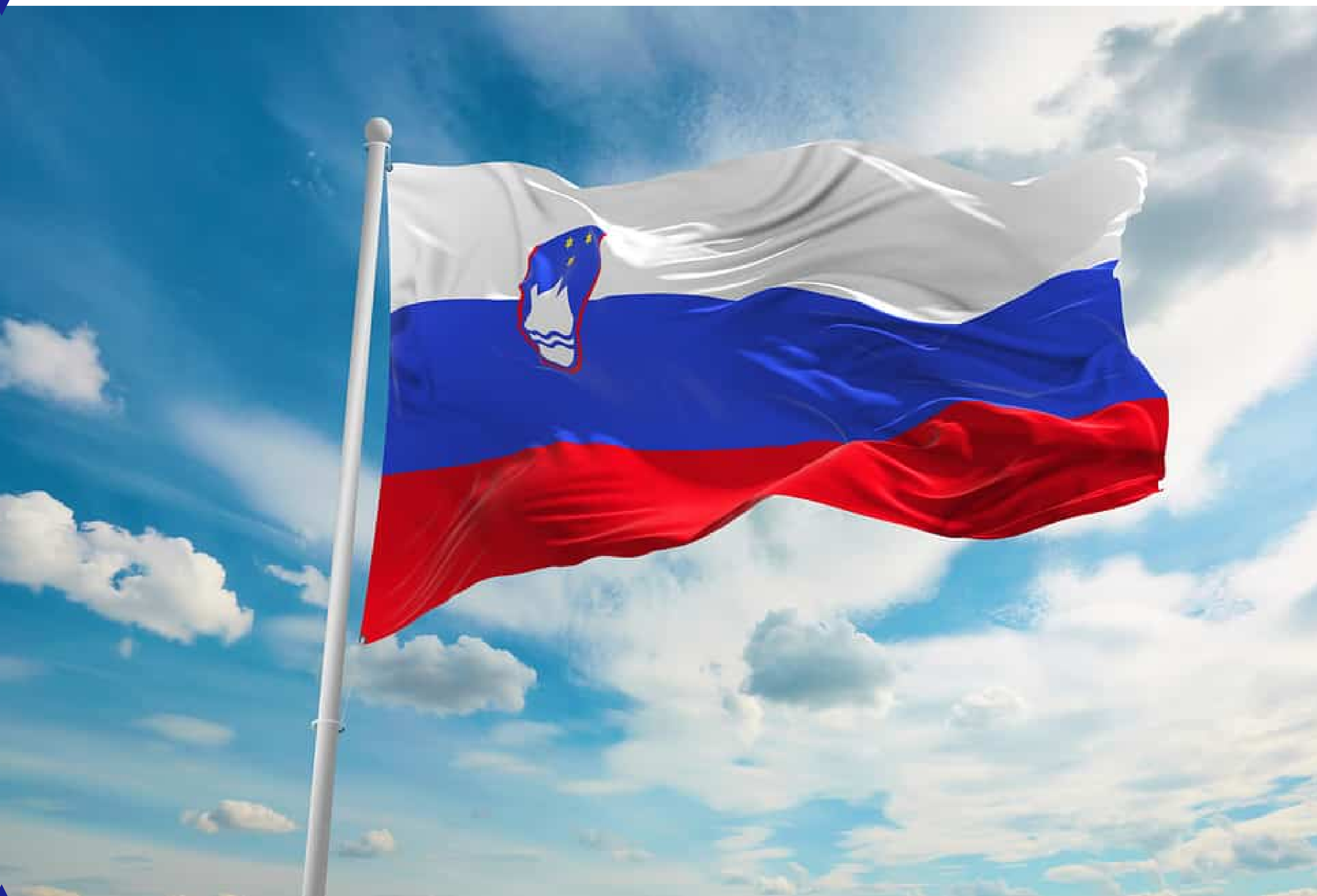
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S.A.**

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Warsaw)**

# Slovenia



• SDD Banka



# Radeče papir nova d.o.o.



**Radeče papir nova d.o.o. –  
financing of the renovation of the  
water treatment plant**

**Sector  
Production**

Radeče Papir Nova d.o.o. is engaged in paper production, and their business is growing and expanding. Therefore, appropriate technology, particularly regarding wastewater treatment, is crucial. The existing wastewater treatment plant is a bottleneck in the paper production process, causing limitations in production, having a greater environmental impact, and not enabling the achievement of a circular economy concept as the secondary waste materials (treated wastewater and sludge) are not returned to the production process.

With the new wastewater treatment process based on ozone oxidation, the circular economy concept would be greatly advanced. SID Bank has provided financing from the Fund of Funds for a circular economy project aimed at renovating the existing wastewater treatment plant of Radeče Papir Nova d.o.o, for a total amount of EUR 2,100,000.

The renovation of the wastewater treatment plant will introduce a different wastewater treatment process based on ozone oxidation, which is expected to significantly advance the circular economy concept. It is estimated that up to 80% of the waste material (sludge) generated from the paper production process could be returned to production, amounting to approximately 1,040 tons per year.

The paper industry is known to be a significant consumer of fresh water, which serves as a transfer medium in paper production. In 2020, Radeče Papir Nova used 958,000 m<sup>3</sup> of fresh water and discharged 813,000 m<sup>3</sup> of treated wastewater. However, after the renovation of the wastewater treatment plant, it is estimated that up to 50% of the treated wastewater could be returned to the production process, contributing to water conservation and sustainability efforts.

# Radeče papir nova d.o.o.

Prenova in uvedba drugačnega postopka čiščenja odpadne vode, ki temelji na konceptu ozonizacije, naj bi znatno pospešili koncept krožnega gospodarstva. Po ocenah bi lahko do 80 % odpadnega materiala (mulja), ki nastane v procesu proizvodnje papirja vrnil v proizvodnjo, kar znaša približno 1.040 ton na leto.

Papirna industrija je velik porabnik sveže vode, ki pri proizvodnji papirja služi kot transferno sredstvo. Leta 2020 je družba Radeče Paper Nova porabila 958.000 m<sup>3</sup> sveže vode in izpustila 813.000 m<sup>3</sup> prečiščene odpadne vode. Po ocenah bi se po prenovi v proces vrnilo do 50 % očiščene odpadne vode, kar bi prispevalo k varčevanju z vodo in prizadevanjem za trajnost.

## Contact

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ELTI  
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