LIFE Programme: short summaries of projects resulting from the LIFE 2020 Call for proposals 2021

Brussels, 23 November 2022

Annex*

*The list of projects is being updated as new grant agreements are signed; the list will be finalised by December 2022.

Projects are listed by country of the project leader (coordinator). Organisations from your country might be involved in transnational projects coordinated in a different country.

Press Release

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Belgium

Environment and Resource Efficiency

A circular insulation material made from aerogel (CARBIP-LIFE)

Using polyurethane and polyisocyanurate in building insulation has an adverse environmental impact. The project will demonstrate an alternative composite insulation material based on aerogel combined with recycled loose-fill minerals, natural fibres and expanded polystyrene. The team will construct a large-scale facility for producing this fully circular material. They hope it will have a thermal performance comparable to conventional materials.

Project summary

Managing PFAS contamination through analysis and remediation (LIFE CAPTURE)

The project will aim to curb per- and polyfluoroalkyl substances (PFAS) contaminating soil and groundwater. PFAS are synthetic chemicals found in many products and are resistant to factors like heat, oil and water. The team will devise a protocol to analyse the presence of PFAS and determine its significance based on on-site flux and concentration measurements. They will also develop a toolkit of promising and innovative PFAS remediation technologies, as well as a 'risk-and-effect' assessment approach based on existing standardised ecotoxicity tests.

Project summary

Safer packaging and insulation materials (PermaLIFE)

The project will demonstrate the large-scale production of a circular myco-material (fungus) obtained from urban organic waste, which is naturally transformed by the action of mycelium. The new material will replace harmful materials in packaging and insulation. The team aims to optimise municipal waste collection to achieve emission savings of 2 400 tonnes of CO_2 and the substitution of 400 tonnes of high-carbon products over the five years following the project's end. They also foresee the creation of at least nine jobs and a 95% reduction in the product price. And they hope to inspire similar biomaterials initiatives by raising awareness among academic institutions, entrepreneurs, regional authorities and the public.

Project summary

Environmental governance and Information

Better air quality policies for cities (LIFE CityTRAQ)

The project will collect relevant air quality information in Flanders, Belgium. This information will provide municipalities with local, single-source assessments to help them identify hotspots, especially traffic congestion. Their findings will help policymakers to map the impact of remedial measures and optimise local air quality plans. Schools and the wider public will be engaged in air quality and traffic monitoring to achieve behavioural change. The project's tools and approach will be promoted in other EU cities and towns.

Project summary

Climate Change Adaptation

Restoring wetlands as water buffers around cities (LIFE Wetlands4Cities)

Medium-sized European cities, such as Mechelen (Belgium) and Tilburg (Netherlands), and their surroundings, face increasing threats due to climate change. Partners will create and restore wetlands on around 380 hectares. These wetlands will act as 'water buffers' around the cities to alleviate drought and reduce urban flooding. Their work will safeguard habitats for protected species and improve the effectiveness of water ecosystem restoration measures. The project will also engage citizens in climate adaptation actions.

Project summary

Climate Governance and Information

Turning climate and energy policy into action (LIFE TogetherFor1.5)

The project aims to align EU climate action with the 1.5°C goal of the Paris Agreement. The team will ensure that decision-makers take informed decisions when revising climate and energy policy, particularly concerning the EU Fit for 55 Package and National Energy and Climate Plans (NECPs). They will also increase the public's acceptance of ambitious climate action by showing its societal and economic benefits.

Project summary

Clean Energy Transition

Helping SMEs implement energy efficiency measures (EnergyEfficiency4SME)

The project team will support companies implementing energy efficiency measures. The consortium, including local and regional authorities, energy agencies, chambers of commerce and industry, will focus on accommodation, food services, as well as agri-food and metalwork industries. They aim to conduct 340 energy audits and provide company staff with improved skills and knowledge. The team will identify best practices and make cost-effective recommendations for SMEs.

Project summary

Renewable technologies to decarbonise the cooling sector (COOLING DOWN)

The project team will propose a vision for a renewable cooling sector in Europe and issue policy recommendations to achieve it. They will conduct extensive research on the potential of renewable cooling technologies aligned with the EU Renewable Energy Directive and projected technological, economic and social trends. Through expert consultations and modelling, they will assess the role of renewable cooling technologies in climate change adaptation and mitigating urban heat island effects.

Project summary

Developing narratives for more energy-efficiency policies (EEW5)

The project will focus on supporting the public sector in implementing energy-efficiency policies and the European Green Deal by developing enabling narratives and a policy dialogue platform. The narratives combine the Green Deal's aim of climate neutrality with other benefits such as innovation, new investment, job creation, energy security, improved air quality and a better quality of life. The policy dialogue platform will allow a broad range of policymakers to engage with key stakeholder groups to support the narrative development process. It will also broaden policymakers' capacities and understanding, leading to improved implementation of EU policies. Key project outcomes will include a large-scale survey, 10 narrative cases and policy recommendations for ambitious policymaking.

Project summary

Empowering citizens for the clean energy transition (TANDEMS)

The project aims to show that partnerships between cities or regions and energy cooperatives can lead to a region-wide supportive framework for community energy, one that can be widely replicated across the EU. The goal is to help and empower citizens to participate in the clean energy transition, focusing on three different areas of Europe: the province of Antwerp in Belgium, the region of Achterhoek in the Netherlands, and the municipalities of Burgas and Gabrovo in Bulgaria. The team plan to develop a wide variety of replicable models and training on renewable and citizen energy communities, trigger 67 community energy projects, support 23 citizen-led initiatives, and prompt almost €8 million in sustainable energy investments by the project's end.

Project summary

Improving access to capital for community energy (ACCE)

The project is focused on developing and scaling up collective financing tools for energy cooperatives across Europe. Using existing examples in the cooperative movement, it will develop innovative financing schemes for energy communities. Measures planned include creating five community energy financing schemes – in Belgium, Croatia, Germany, Romania and Spain – while two existing schemes will be expanded in France and the Netherlands. A European intermediary for national schemes will also be created to access EU funds. The goal is to trigger €90 million of citizen investments through the creation of community energy financing schemes.

Project summary

Flemish one-stop-shop for energy-efficient renovations (LIFE FOSSTER)

The project will improve the renovation of public and private buildings to help the Belgium region of Flanders reach EU energy efficiency targets. The project team will integrate existing Flemish energy-saving awareness programmes, guidance and support services and combine them with best practices into a 'one-stop-shop' model for different types of homeowners. They will test their concept in five Energy Houses. Once validated, the idea will be integrated into the legal framework.

Project summary

Bulgaria

Climate Governance and Information

Climate-proofing Bulgaria's water sector (LIFE WatClima)

The project will help Bulgaria overcome its water sector challenges due to climate change. The team will implement a new integrated approach to address water scarcity, floods and reduced water quality due to extreme weather events. They will develop national strategies for the water sector, embed climate objectives into policies, enhance administrative capacity, strengthen inter-institutional coordination, and raise awareness among citizens.

Project summary

Clean Energy Transition

Bolstering the BUILD UP Skills Platform for an energy-efficiency roadmap (BUILDUPSkillsBG)

The project will carry out an analysis of the achievements of the Bulgarian roadmap for energy-efficient construction and an assessment of the legislative framework and market demand for skilled workers. This analysis will feed into discussions on a national platform established to develop a roadmap for education and training on sustainable energy solutions in building. The roadmap will help overcome barriers and provide solutions for meeting 2030 targets in the construction sector. The project team will carry out a promotional campaign aimed at national authorities, educational institutions, professional associations, market players and social partners. This will ensure the roadmap is integrated into the national strategic framework and encourage uptake of the proposed solutions.

Project summary

A new financial instrument for the clean energy transition (FLAG FICET)

Bulgarian municipalities face severe challenges in the clean energy transition (CET). Considerable financial resources are needed to achieve energy-efficient buildings and for renewable energy measures, for example. But there are market barriers to accessing CET funding. The project aims to help overcome these by developing an innovative new financial instrument to support municipal CET investments in Bulgaria. Contracts for pilot investments funded through the instrument should be signed during the project. Technical assistance for preparing clean energy project proposals will also be improved. To ensure long-term sustainability and replication of the project's results, the new instrument will be widely promoted, and additional financial resources secured for subsequent funding cycles.

Project summary

Czechia

Climate Change Adaptation

Helping soils retain water to reduce climate change impacts (LIFE WILL)

The project aims to improve people and landscapes' resilience to climate change impacts, such as erosion, floods and droughts, by increasing the capacity of soils to retain water. The team will demonstrate an innovative participatory ecosystem-based adaptation methodology for water retention on three pilot sites in Czechia and Slovakia. This will enhance rural socio-economic development, landscape resilience and biodiversity. The method will be replicated at 30 other locations.

Project summary

Helping spruce forests to stand firm (LIFE Adapt Brdy)

Recent dry years have weakened spruce forest stands throughout central Europe, making them vulnerable to the European spruce bark beetle and other threats. The team will adapt forests in the Brdy Highland to climate change. They will reduce the number of damaging the cloven-hoofed game, implement close-to-nature forest management, and increase the area of natural regeneration and the proportion of minority tree species such as beech and white fir. These practices will be replicated at other sites.

Project summary

Clean Energy Transition

Improving the Czech and Slovak construction sector's capacity to meet energy-efficiency targets (DoubleDecker)

National energy efficiency analysis and roadmaps under the BUILD UP Skills initiative must be updated to include current technological developments and more ambitious climate goals. The project plans to identify and promote measures for increasing the capacity of Czechia and Slovakia to meet these new requirements and targets concerning construction. A secondary goal is strengthening EU policies under the BUILD UP Skills initiatives.

Project summary

Promoting home renovations for more energy-efficient buildings (One Stop Shop)

The one-stop shop model has successfully persuaded homeowners to finance renovations and improve buildings' energy efficiency, but it is not widely used in Europe. This project seeks to stimulate demand for building renovations and energy performance improvements via a new comprehensive service – a one-stop shop – covering the whole 'customer journey', from the pre-consultancy phase to monitoring. Launching an interactive online building renovation calculator should empower homeowners in building renovation design. Plus, local construction companies, architects, engineers, financiers and others will be galvanised to demonstrate the one-stop shop's positive impact on homeowners' behaviour and increase demand for building renovations. The project will also build expertise and provide training, primarily for blue-collar professionals.

Project summary

Denmark

Nature and Biodiversity

Restoring coastal habitats for nature and the climate (COASTal LIFE)

In the face of global biodiversity and climate crisis, this project will focus on improving habitats in Denmark's coastal areas. The goal is to help bring 12 different habitats to favourable conservation status, improve conditions for nine protected bird species and increase biodiversity. The project's restoration work should also help lock away more carbon, reducing greenhouse gas emissions and contributing to the EU's Fit for 55 climate package.

Environment and Resource Efficiency

Converting salmon processing by-products into food ingredients (LIFE CONQUER)

The project will convert salmon peptides and oil, a by-product of salmon processing, into viable food ingredients. The team will construct a sustainable biorefinery for extracting proteins from bones and in-situ spray drying. The project's methodology reduces bio-waste and greenhouse gas emissions while improving water use and generating energy savings. Despite the high initial investment in the refinery, the team aims to make the business case for its unprecedented approach, projecting high revenues and creating 17 new jobs.

Clean Energy Transition

Bolstering energy transition renovation in south Denmark (COHEAT2)

The project aims to show how energy transition renovations can be accelerated through novel business, technology and replication models. Demonstration activities will focus on buildings and homes not connected to the district heating systems of 22 municipalities in southern Denmark, recognising that 100 000 renovations in the region must occur before 2030. A local energy planning process will ensure that the appropriate solutions are tailored to the local community context. The project expects to facilitate the investment of €31.9 million in energy transition renovations by developing system solutions based on green technologies, fostering community cooperation and offering consumer-friendly services via development units established by the project.

Germany

Nature and Biodiversity

Boosting river mussel numbers in northwest Germany (LIFE Bachmuschel)

Thick-shelled river mussels have declined dramatically since the last century because of humans' impact on rivers and streams. Consequently, this freshwater mussel is now classed as globally endangered and critically endangered in Germany. The project team will conserve, increase and reintroduce thick-shelled river mussels on 14 Natura 2000 sites in Brandenburg state. Actions will target flowing waters in the Elbe, Havel and Spree catchment areas. Work planned includes improving habitats and conditions, creating new habitats, minimising threats, reintroducing mussels in areas where they have vanished, and boosting numbers where they are low and in decline.

Environment and Resource Efficiency

Cultivating protein-rich Lemna on a commercial scale (LIFE LEMNERGY)

The project will demonstrate the first large-scale vertical cultivation of Lemna (duckweed) to produce high-value protein foodstuffs. It will also show that aquaculture waste and other industrial waste can meet the fertiliser needs and the CO_2 input necessary for its cultivation. Water lentils, such as Lemna, have not previously been farmed on an industrial scale due to cost and safety concerns. The team will show that they are an environmentally beneficial alternative to other protein sources.

Installing a fuel cell and methanol-reforming system for clean energy on board a yacht (LIFE OCEAN)

The maritime sector was responsible for 13.5% of all EU greenhouse gas emissions in 2020. The project plans to show the environmental benefits of substituting diesel generators, commonly used in yachts to meet the energy needs of cabins, with a more sustainable alternative – a methanol reformer coupled to a Polymer electrolyte membrane (PEM) fuel cell. It will implement this auxiliary

power unit in the Sanlorenzo superyacht, demonstrating reductions in emissions and noise, both onboard and underwater.

Project summary

Environmental governance and Information

LIFE-developed tools to improve consumer behaviour towards chemicals (LIFEChemBee)

The project will run a campaign to improve consumer behaviour relating to products that use harmful chemicals. The team will promote the 'Household Check', developed by the predecessor project NonHazCity, to encourage users to make inventories of their household goods and introduce beneficial changes. The project will also promote the Scan4Chem application on toxic-free goods developed by LIFE AskREACH. With the help of Chemicals Ambassadors, the project will expand the reach of these projects via an education programme.

Project summary

Climate Change Adaptation

Balancing hydropower with river ecosystem needs (CONTEMPO)

The project aims to balance the demand for renewable energy from hydropower with the good ecological functioning of rivers. The team will implement a dynamic management approach at a pilot site to ensure sufficient water level is maintained for power generation during low water periods, which occur more frequently with rising temperatures. Water flow will be regulated with real-time data and active control of temperatures and oxygen levels to keep the river ecosystem within a non-critical range.

Project summary

Climate Governance and Information

Ensuring businesses can finance climate action (Stress)

The project team will help businesses cope with climate stress. They will reduce barriers to accessing appropriate finance for the private sector, facilitate international harmonisation through a platform of exchange for financial sector climate stress tests, and ensure that these stress tests include sustainability themes such as ecosystem service loss and just transition. They will also compile a repository of climate stress-test exercises and implement training and capacity-building actions.

Project summary

Clean Energy Transition

A new certification scheme for clean energy SMEs (CONFESS)

Small and medium-sized enterprises (SMEs) make up over 99% of all businesses in the EU and account for more than half of its GDP. However, the vast majority fall outside the reporting obligations for the EU taxonomy – a classification system for sustainable economic activities – meaning financial institutions lack access to sustainability data about them. Yet SMEs represent a substantial market opportunity for small-scale renewable energy and energy efficiency improvements. The project's goal is to foster the growth of sustainable energy investments by establishing a harmonised certification scheme for clean energy SMEs, building on the framework of the EU taxonomy. This certification scheme will help financial market actors assess their energy investments' sustainability and should contribute to the faster upscaling of sustainable energy investments.

Project summary

Green mortgage financing for home energy improvements (ENGAGE)

The project aims to provide a solution for green mortgage financing, an essential part of European decarbonisation. The team will identify key data for assessing the energy efficiency information of green mortgages and create a 'green investments portal' to simplify access to and compare green

data. This portal will offer consumers mortgage loans that reward improvements in the energy class of their properties and support them in converting their properties and obtaining new energy labels. It will be piloted in the Netherlands and Spain, while one-stop digital shops in Spain will assist consumers with the retrofit process. The project should enhance business opportunities for local contractors and companies while paving the way towards a more ethically and economically sustainable built environment.

Project summary

Estonia

Nature and Biodiversity

Bringing sturgeons back to the Baltic Sea (LIFE Baltic Sturgeon)

Sturgeons disappeared from the Baltic Sea in the last century as the rivers where they spawned deteriorated, with barriers to migration, water pollution and overfishing. The last specimen caught in the wild in Estonian waters was back in 1996. Now, conditions have improved significantly, sturgeon fishing is forbidden, and the team behind this project are looking to re-establish the species in the north-eastern Baltic Sea. To this end, they will release young sturgeons in the Narva and Pärnu rivers, the region's most important historical spawning grounds.

Project summary

A boost for biodiversity in Tartu, Aarhus and Riga (urbanLIFEcircles)

This project aims to improve city-wide biodiversity management in Tartu (Estonia), Aarhus (Denmark) and Riga (Latvia) to restore connectivity and enhance ecosystem health. In each location, continuous interconnected wildlife habitat is envisaged, which starts from peri-urban nature reserves and extends throughout each city, connected through green corridors and a network of 'stepping stones' for nature. Measures planned include restoring habitats, engaging communities in these cities to participate in conservation and restoration work, and helping businesses develop the products and services needed to support city biodiversity. With practical examples, the goal is to show that system change for biodiversity is possible in cities. The project's solutions should apply to most urban areas in Europe.

Project summary

Climate Change Adaptation

Nature-based solutions for climate resilience in urban areas (LIFE LATESTadapt)

The project aims to increase the resilience of Estonian and Latvian urban areas to extreme weather events by focusing on nature-based solutions, digital change, planning, community engagement, and enabling skills. At eight sites, the project team will develop, test and demonstrate measures to prevent local flooding caused by an overload of the urban drainage system during extreme rainfall. They will also develop an integrated decision-support system, suitable green infrastructure and nature-based solutions.

Project summary

Clean Energy Transition

Regional initiatives for a just energy transition (CEESU-DIGIT)

The project team will build capacity in six Central and Eastern European countries in carbon-intensive regions to develop holistic regional Energy and Climate Action Plans (ECAPs). They will also assist municipalities in formulating, funding, and implementing their ECAPs. At both levels, capacity building will benefit from sharing ideas, knowledge, and applications for financing. A key focus will be on energy poverty and involving marginalised and vulnerable groups in the planning process.

Project summary

Ireland

Environment and Resource Efficiency

Recycling waste plastic into sustainable wax (PLASTIC2WAXLIFE)
Demand for wax, commonly obtained from fossil resources, is expected to exceed supply by 20%. This project will demonstrate an innovative chemical recycling process based on pyrolysis for converting waste plastics into sustainable wax, thus preventing landfilling and incineration. The team will scale up an existing process from the treatment of 4 000 tonnes of waste a year to 12 000 tonnes before its further application on an industrial scale of 40 000 tonnes. The aim is to show that a plant using the project technology can achieve savings of up to 24 000 tonnes/year of waste plastics from incineration and emissions of 23 000 tonnes of CO_2eq/year.

Project summary

Clean Energy Transition

Promoting Local Energy Agencies in peripheral regions (LEAP)

The project team will create three Local Energy Agencies in Ireland to support integrated home renovation services in peripheral regions. These will address challenges, such as dispersed and older housing and reliance on oil and solid fuels, to help achieve Ireland's target of retrofitting 500 000 homes by 2030. The Local Energy Agencies will help homeowners understand their options to ensure effective investments and work with local contractors on a cohesive home renovation service.

Project summary

Building up skills in Ireland's construction sector by 2030 (BUSI2030)

The project team will update the Irish BUILD UP Skills Platform to upskill building workers. This reflects policy and sectoral changes since 2013, including digitisation, circular economy, and climate change targets. The project brings together expertise to define education and training needs now and in the future. A key focus of the revitalised platform will be financing and investment to deliver the skills required by the construction sector to provide energy-efficient renovated and new-build houses.

Project summary

Greece

Environmental governance and Information

Improving air quality through increasing the awareness and capacity of authorities (LIFE SIRIUS)

This project aims to improve urban air quality management by promoting an integrated approach that advances responsible authorities' knowledge, skills and competencies. Specifically, it will facilitate the scaling up of solutions, emphasise the health impact of air quality, and provide a framework for increasing awareness. The project will target seven partners in Greece, Cyprus and Italy, improving their capacity and management performance while also developing standard evaluation and environmental management systems.

Project summary

Clean Energy Transition

Improving energy efficiency to reduce energy poverty (REVERTER)

The project team will alleviate energy poverty by improving household energy efficiency. They will develop roadmaps to identify the worst-performing houses and the most cost-effective renovation methods. This will help upgrade more homes for a given budget, maximise energy and cost savings, and reduce greenhouse gas and pollutant emissions. Pilots in Bulgaria, Greece, Latvia and Portugal will facilitate large-scale replication under different building, climate and socioeconomic conditions.

Project summary

Promoting the use of the Smart Readiness Indicator (SMARTREADY-easySRI)

The project team will create a web platform for the automated calculation of the Smart Readiness Indicator (SRI), introduced in the EU Energy Performance of Buildings Directive, to enable its effective implementation. The platform will also provide additional information to make the SRI more understandable for building users and customised recommendations for building upgrades. The team will produce training materials and promote using the SRI concept in EU policies.

[Project summary](#)

Ensuring just energy transitions through the standardised assessment of socio-economic impacts (SITRANS)

The project will address the need to assess the economic and social impact of introducing sustainable energy sources at the regional and intra-regional level to ensure a 'just transition'. It will also address the need for an effective governance model recognising regional specificities. A vital aspect of the project is the establishment of a Just Energy Transition Observatory for evaluating energy policies and initiatives based on indicators and criteria defined in public consultations. Reaching a joint agreement on indicators will increase the acceptance of policy and investment plans.

[Project summary](#)

Establishing a marketplace to accelerate investment in energy-efficiency renovations (ENERGATE)

Lack of funding is hampering urgently needed energy-efficiency renovations of buildings in the EU. To address this problem, the project plans to create an effective, ICT-enabled, energy-efficiency marketplace that brings together energy services and sustainable finance to support the financing of initiatives. The project team also aims to simplify the complex decision-making processes of key targeted groups.

[Project summary](#)

Revitalising the Greek National Qualifications Platform (BUS REGRoUP)

The BUS-REGRoUP aims to bolster the Greek National Qualifications Platform that was created in the first phase of the BUILD UP Skills initiative, expanding its scope by engaging new stakeholders. The project will also update the status quo analysis and the national qualifications roadmap to reflect ongoing developments in the building sector in Greece. The project will assess energy performance, contributions to 2030 climate action targets, and barriers and gaps to inform discussion among the stakeholders. The updated national roadmap will outline priority measures and the resources required to drive their implementation.

[Project summary](#)

Energy transition audits to encourage decarbonisation (EnTRAINER)

The project focuses on energy-intensive industries in Greece, Italy, Romania and Spain, which are lagging in implementing energy audits compared to other parts of the EU. The goal is to introduce a paradigm shift from conventional energy audits to new energy transition audits and provide action plans for the complete decarbonisation of audited sites. Measures planned include training for energy auditors, energy experts and company staff, a sophisticated web portal with new and upgraded tools for energy professionals, and a training platform and knowledge hub. 40 detailed energy transition audits will follow preliminary energy scans in 80 energy-intensive industries. Industrial sites will have support to implement the measures proposed by the audits, as the team will bring top management and financiers together to help them take advantage of funding opportunities. The results of the energy audits should also serve as examples for others in the same sector via the knowledge hub.

[Project summary](#)

Tools and services for assessing the smart readiness of buildings (SRI ENACT)

The EU's smart readiness indicator (SRI) is an optional scheme for rating the smart readiness of buildings. A building's capacity to accommodate smart-ready services (e.g., heating, cooling,

ventilation, lighting and charging of electric vehicles) determines its SRI rating. Several challenges affect the uptake of this indicator, such as a lack of SRI expertise among energy auditors, low engagement of stakeholders, and difficulties with informed decision-making on energy smartness upgrades. The project aims to boost SRI uptake in Europe, involving stakeholders to tailor the implementation of the indicator to different national contexts. A training and certification package will be developed for SRI auditors, while a new toolkit with SRI assessment and decision support tools should promote informed decision-making on smartness upgrades. Large-scale pilots in Austria, Bulgaria, Croatia, Czechia, Greece, Latvia, Romania and Spain will see auditors rate the smart readiness of 1 200 buildings.

Project summary

Boosting renewable heating and cooling solutions (REDI4HEAT)

Heating and cooling account for half of the European energy demand and 80% of household energy consumption. The EU's clean energy package contains several measures to boost the uptake of renewable heating and cooling solutions by 2030. However, most Member States have yet to design strategies for this sector that are ambitious enough to comply with the Renewable Energy Directive. The project's goal is to support the implementation of this directive's provisions on heating and cooling and help Member States and local authorities with this process. It will provide a better understanding of the shortcomings in current strategies as well as a set of recommendations to address them. This will be complemented by capacity-building events in five Member States and through a new knowledge-sharing platform and toolkits for public authorities at national, regional and local levels.

Project summary

Spain

Nature and Biodiversity

Improving river habitats and species around the Bay of Biscay (LIFE KANTAURIBAI)

Species and habitats in five river catchments around the Bay of Biscay have poor conservation status. River fragmentation, the presence of roads and invasive alien species have all taken their toll. The project aims to improve the conservation status of species and habitats in 15 Natura 2000 sites in Spain and France. Measures planned include enhancing river connectivity by eliminating 30 obstacles or making them passable and controlling or wiping out invasive species (American mink, coypu, muskrat and some plants). Fish that migrate between freshwater and saltwater – salmon, lamprey, shad and eel – are set to benefit. The conservation status of Pyrenean desman, European mink and some freshwater mussel species should improve.

Project summary

Environment and Resource Efficiency

An eco-efficient system for wastewater treatment and reuse (BIODAPH2O)

The project aims to demonstrate eco-efficient, nature-based tertiary wastewater treatment at two sites in water-stressed Mediterranean regions. The sites will produce reclaimed water that can be reused agriculturally, avoiding the discharge of pollutants. The technology developed by the Innoqua project and is based on the depuration capacity of biological organisms such as water fleas, microalgae, and biofilms does not produce sludge or require any chemicals. It will be validated by an environmental technology verification body ahead of its wider replication and exploitation.

Project summary

Boosting reward-as-you-throw recycling schemes (CENTS4PACK)

EU countries are introducing reward-as-you-throw schemes to meet targets for recycling. The project will develop and demonstrate a large-scale Internet of Things tool for facilitating the adoption of such schemes. Installed over all types of street bins and able to process all packaging materials, the approach will be demonstrated in Guadalajara over 12 months. The aim is to increase the recovery rates by 25% on 2018 levels, changing how waste is viewed and managed.

Recovering polyphenols from olive oil waste (CYCLOPS)

Olive oil production generates a range of waste streams, including alpeorujo, a highly polluting mixture of vegetation water, solid parts of the olive and fatty residues that are difficult to dispose of. This project aims to demonstrate a sustainable way of managing olive oil waste by recovering polyphenols (healthy compounds) as high-value products for oil and wine, nutraceuticals, pharmaceuticals and cosmetics. The remaining waste will be co-digested in an anaerobic digestion infrastructure to significantly enhance biogas production and generate digestate of sufficient quality to be applied on land. This process closes the cycle and achieves zero waste.

A closed-loop system for reusing water from textile finishing (LIFE ANHIDRA)

This project will develop an innovative and efficient regeneration and reuse solution for water from the textile finishing process. It will show the wastewater's potential for reuse in industrial washing machines, with savings of up to 21 000 m3 foreseen over 60 days. Integrating this closed-loop system into a conventional textile finishing process is expected to reduce water consumption by 92% and wastewater generation by 98% while avoiding the discharge of emerging pollutants, microfibres and pathogens into the environment. Energy consumption will also be reduced by 15%. The project team will draw up business plans for the technology's replication, with 36 facilities expected to implement it within three years of the project's end, increasing to at least 100 within five years.

Preventing evaporation loss at agricultural reservoirs (LIFE H2OLOCK)

Although agricultural water reservoirs play a significant role in Europe's irrigation systems, evaporation can negatively affect them. This project will demonstrate a cost-effective way of addressing this problem at larger reservoirs, improving the performance of current solutions. The project's approach, which comprises a novel combination of floating modules and 'blankets' with solar cells, suppresses algae growth without using algicides and produces renewable energy for irrigation systems.

A circular seawater desalination process that produces renewable energy (LIFE INDESAL)

The project will develop a novel, integrated and circular seawater desalination process for producing multi-purpose desalinated water. The method applies reverse electrodialysis to convert the generated brines into a renewable energy source. Further electrodialysis treatment with bipolar membranes produces sodium hydroxide and hydrogen chloride that can be reused in the desalination stage. The team will demonstrate the process on a pilot scale over two years to highlight its economic and environmental benefits before transferring it to full-scale plants.

A biorefinery for producing high-value products from fishing discards and by-products (LIFE REFISH)

The discarding of unwanted catch and the current management of by-products challenges the sustainability of the fishing sector. This project will create a biorefinery to turn these challenges into an opportunity for generating high-value-added products, such as protein hydrolysates, oils, mineral fractions, collagen hydrolysates, gelatines, fish mince, chitin and chitosan. The consortium will offer three to six times the price currently available for discards and by-products for their use as fishmeal and oil. The aim is to reduce the discard of fish by 6% in Spain by 2030, valorising 2.7% of the fish and seafood by-products.

Reusing end-of-life electric vehicle batteries in hybrid renewable energy plants (LIFE ReLiGHT)

Improving energy storage is vital for achieving EU climate goals, especially given the expanding market for electric vehicles. This project aims to demonstrate a modular battery energy storage solution for the reuse of end-of-life lithium-ion batteries from electric vehicles on a large scale. The team will show that the end-of-life batteries can be integrated into renewable plants attached to the electrical grid, thus creating a hybrid system that can be deployed in regions where renewable sources alone cannot guarantee sufficient supply. The system reduces waste from electric vehicles while generating significant greenhouse gas emission savings.

Project summary

Using technology to optimise agricultural processes (LIFE AIs)

The project will employ 3D stereo vision and artificial intelligence (AI) post-processing technologies to improve knowledge of crops and adjust management practices and agricultural machinery to achieve savings in pesticide, fertiliser, water and diesel use. The project's approach will be trialled at three demonstration olive, grape and avocado farms in Spain and Portugal. The agronomic input savings will be mapped to estimate the resulting greenhouse gas emission reductions.

Project summary

Removing contaminants of emerging concern from water (PRISTINE)

The project aims to develop an adaptable solution for permanently removing contaminants of emerging concern from water streams. The solution is based on a combination of technologies that will be supported by a decision support system comprising AI-based soft-sensors for estimating the concentration levels of contaminants. These include Per- and polyfluoroalkyl substances (PFAS), pesticides, toxins, antibiotic-resistance genes and microplastics. The team expects to show that more than 80% of contaminants can be removed from wastewater and drinking water at a cost 30% lower than current technologies.

Project summary

Developing a water reclamation train for crop irrigation (WARRIOR)

The project will demonstrate an innovative, cost-effective water reclamation 'train' for crop irrigation based on the application of reused ultrafiltration (Re-UF) membranes and a chemical-free, energy-efficient disinfection process. A digital tool for risk management and process optimisation will support this so-called' WARRIOR' process. The team will also develop a digital platform for connecting used-membrane providers, such as water utilities, with end-users. This treatment train will be demonstrated in Murcia, one of the most water-stressed regions in Europe.

Project summary

Reusing a toxic waste stream from the paper and pulp industry (ZEBRA LIFE)

Europe's pulp and paper industry produces around 11 million tonnes of waste annually. Much of this is black liquor, a toxic waste mostly burnt for energy recovery or sent to disposal sites. This project will demonstrate a process that will enable paper mills to reuse this black liquor by-product as a natural antioxidant and UV filter product. This will help lower the environmental impact of the rubber, fuel, lubricants, food and cosmetics sectors.

Project summary

Climate Change Adaptation

Climate-resilient agroforestry in northwest Iberia (LIFE SILFORE)

Climate change is causing significant harm to Europe's forests, increasing droughts and the risk of fire, disease and flooding. This project focuses on the northwest Iberian Peninsula, an area greatly affected by these hazards. The plan is to develop silvopastoral systems – a method that combines forestry and grazing of livestock – to help increase climate change resilience on land used for

agroforestry and reduce the risk of fire. This should boost biodiversity at both plot and landscape scale. Different silvopastoral systems will be applied according to the potential of each zone, and these systems should result in diversified and more profitable agroforestry.

Project summary

Precision soil monitoring for water savings on farms (HYDROSTICK)

Extreme drought and flooding will seriously disrupt the agriculture sector in Spain. However, precision farming can lessen climate change impacts. The project team will explore this by demonstrating a new modular, autonomous, user-friendly and customisable 'hydrostick' technology. It allows real-time monitoring of soil characteristics to show its ability to achieve substantial water savings and efficient fertiliser use. The technology will be tested in a greenhouse and on four pilot crops in Navarra and Extremadura.

Project summary

Climate Change Mitigation

Certifying sustainable cereal production (LIFE Innocereal EU)

The project team will develop and demonstrate a sustainable and competitive system for cereal production chains. The aim is to increase productivity, with more efficient use of nutrients, herbicides and fertilisers, through practices that secure more carbon in the soil and lower greenhouse gas emissions. Contracts will ensure cereal products comply with food standards, leading to a new sustainability label and a low-carbon emission cereals certification system.

Project summary

Biofuel to replace the burning of rice straw (LIFE REPTES)

Vast amounts of rice straw are burned annually in fields near Albufera Natural Park (Spain), emitting greenhouse gases and particulate matter. The project will develop a new circular model for valorising rice straw and sewage sludge to produce renewable gas biofuels. The team will implement a combination of technologies based on the novel dark fermentation process (DFP) to produce biohydrogen. They will also use an innovative methodology for pre-treating rice straw.

Project summary

Climate mitigation through land management in mining areas (LIFE CARBON2MINE)

The project team will develop innovative land and vegetation management models to optimise the carbon sink effect in mining areas in Asturias, Spain, to mitigate climate change. These models will ensure cleaner energy production, increase biodiversity and enhance ecosystem services. They will also promote the circular economy in managing forests and grasslands by using ash from local bioenergy production as fertilisers.

Project summary

Promoting sustainable forestry (LIFE TOKEN CO2)

The project team will develop a set of novel close-to-market products and services that incentivise sustainable practices in European forests. They will validate a large-scale predictive remote sensing-based model to calculate the absorption of carbon dioxide by forest stands and assess the effectiveness of interventions. Their digital platform will include a carbon credits market tool that uses blockchain technology.

Project summary

Climate Governance and Information

Adapting beaches to climate change (LIFE AdaptCalaMillor)

Beach ecosystems in the Balearic Islands in Spain are vulnerable to climate change impacts such as mean sea-level rise, shoreline erosion and coastal flooding. Partners will implement local adaptation practices for urban beaches in the seaside tourist resort of Cala Millor in Mallorca. They will develop a participatory and multi-level governance approach to select adaptation measures and integrate the physical, environmental, socio-economic and urban dimensions.

Project summary

Clean Energy Transition

Building skills in the Spanish construction sector (Construye 2030)

The project team will accelerate the cost-effective renovation of existing buildings and promote the use of smart technologies in buildings. This will help achieve policy targets for energy efficiency, circular economy, and the use of renewable energy sources. The project team will train construction workers, building on a national skill development initiative in Spain. This training will provide skills related to digitalisation, smart buildings, heating and cooling, and life-cycle carbon assessment.

Project summary

Developing technical assistance to boost energy communities across Europe (LIFE BECKON)

The project plans to encourage the creation of 'energy communities' across Europe by developing support mechanisms for public authorities, promoters and Local Action Groups. This support will include a technical assistance 'cookbook' that provides guidance on establishing technical assistance offices and a capacity-building programme for increasing stakeholder knowledge and offering integrated services on a one-stop-shop platform. The support mechanisms will be validated in Avila, Sofia and Copenhagen ahead of replication across Europe.

Project summary

Supporting the energy transition on tourist islands (GENERA)

The project is designed to help public authorities on tourist islands transition to a decarbonised and sustainable economy. It will establish a framework of energy transition measures for tourist islands, assisting municipalities along the path from planning to implementation and citizen engagement, in line with the EU's island clean energy transition agenda and the Covenant of Mayors. Actors involved in the energy transition will design roadmaps to achieve energy goals and put them into practice locally, producing a replicable methodology and sustainability guidelines. The project aims to provide novel energy monitoring tools tailored to the islands' needs to help decision-making and drive the sustainable energy transition. Other measures include large-scale capacity-building programmes and engagement of local societies, permanent and seasonal inhabitants and tourists via a digital platform and physical events to create a new generation of energy-sensitive citizens.

Project summary

Bringing local actors together for regional energy communities (JALON)

This project will use a new approach to stimulate European citizen-led energy community projects. The approach is rooted in close collaboration with local stakeholders so that energy communities act as an instrument of social innovation and solve local needs, especially for rural regions. It will be demonstrated via a large-scale regional energy community bringing together 87 rural villages in Spain. This will engage 5 000 citizens, 40 local authorities and 75 businesses and is aimed at mobilising €13 million for investment in photovoltaic-energy facilities. Six other EU regions will work with the project partners to develop implementation plans so they can follow the example. Promotion of the project's results should help foster replication across the EU.

Project summary

Supporting the sustainability of European energy communities (COMANAGE)

Once begun, energy community projects often struggle to take off. The team will tackle the primary

governance and management barriers such projects face by creating a governance framework for energy communities. They will also equip public authorities with services, support mechanisms and tools to help govern and manage energy communities and other forms of citizen-led energy initiatives. Ultimately, the goal is to stimulate new community-owned energy projects and to ensure that existing projects can grow in the medium and long term. To this end, the team will establish a transnational network of knowledge and competence providers and set up three service hubs in Spain, Poland and Italy.

Project summary

France

Nature and Biodiversity

Stopping ships from colliding with cetaceans (LIFE SEADETECT)

Ship strikes are the biggest non-natural threat to whales, dolphins and porpoises, collectively known as cetaceans. The project team will develop new technologies to reduce the risk of collision. Innovative systems should ensure that cetaceans within one kilometre can be detected in real-time and in most weather conditions, day or night. This will allow vessels to change course to avoid striking marine mammals. The plan is to test an onboard system on three high-speed ferries. Also, a new system of buoys to detect and triangulate cetaceans' position in real-time will be deployed in key areas in summer – the most dangerous period for ship strikes. Detections will also feed into an existing software system that prevents collisions between vessels and large cetaceans. After the project, it is hoped that broader use of the technologies will mean at least 100 cetaceans' lives are saved yearly.

Project summary

Safer power lines for birds in France, Belgium and Portugal (LIFE SAFELINES4BIRDS)

More than 1.8 million kilometres of electric power lines in France, Belgium and Portugal present a danger to some birds. Every year millions die after colliding with or being electrocuted by them. Maintenance work can also disturb breeding birds, causing nests to be abandoned. The project focuses on reducing non-natural bird deaths by making high-risk power lines, dangerous poles, and pylons safer. Methods will include anti-collision and deterrence devices, dismantling lines and putting them underground, modification of high-risk pylons and installation of nesting platforms. Also, using unmanned aerial vehicles for maintenance should help reduce disturbances. The little bustard, bearded vulture, Bonelli's eagle, cinereous vulture, Egyptian vulture, lesser kestrel, common crane, osprey, white stork, black stork, Eurasian woodcock, Eurasian curlew and northern lapwing are all set to benefit.

Project summary

Environment and Resource Efficiency

Re-using the primary waste product from brewing as a sustainable fuel and high-value foodstuff (LIFE FWFB)

Around 85% of waste from the brewing industry takes the form of brewer's spent grain, which is commonly used as low-value animal feed or sent to landfill sites. However, this project aims to valorise the proteins and fibres in this waste stream, developing a prototype process for their extraction. While the proteins will have nutritional applications, the fibres can be re-used as biomass with a higher thermal efficiency in the brewery's combustion plant. The project process, which will be implemented on a large scale at a Heineken brewery, will generate no residual components since the wastewater is also treated to produce biogas.

Project summary

Highlighting the environmental benefits and economic viability of digital tickets and receipts (Ticketless_LIFE)

The thermal paper that is currently used for tickets and receipts contains toxic substances such as bisphenol A. The project will demonstrate the feasibility of digitalising these tickets without the need to request personal data or additional online contact. The project process avoids waste and the use of

natural resources while reducing energy consumption. The project will aim to develop solutions for a range of applications, such as credit card receipts and machine-issued tickets.

[Project summary](#)

Environmental governance and Information

Developing virtual reality tools to raise awareness of air quality impacts (LIFE V-AIR)

While poor air quality is one of Europe's leading causes of death, it is not widely understood or addressed by decision-makers. The project will develop innovative tools that use gamification and virtual reality to show the impact of air quality. The team will also train decision-makers to use the tools and inform the public about the issues through an entertaining virtual reality escape game. Since the tools will be adaptable, they have a high potential for application outside the project area.

[Project summary](#)

Climate Change Mitigation

Substituting the greenhouse gas SF6 in gas-insulated substations (LIFE SF6-FREE GIS)

The project will apply an alternative to the coolant and powerful greenhouse gas sulphur hexafluoride (SF6) in a 245 kV gas-insulated substation, where there are currently no SF6-free solutions. This is important because 245 kV is vital for the European high-voltage network. The team will also seek digital solutions for the electricity grid, which becomes more complex with the introduction of intermittent renewable energy sources.

[Project summary](#)

Recovering and reusing F-gases to reduce greenhouse gas emissions (LIFE@F-Gases)

The project will contribute to the industrial development of a new treatment system for refrigerant fluorinated gases (F-gases), using a circular economy, from recovery and treatment to reuse. The innovative distillation system to recover fluorinated greenhouse gases will, directly and indirectly, reduce greenhouse gas emissions and contribute to the EU's self-sufficiency in fluorinated gas supply.

[Project summary](#)

Restoring Jura peatlands for their climate resilience (LIFE RestituO)

Peatlands in the Jura Mountains have been degraded by activities such as drainage and peat extraction, lowering water levels and turning the land from a carbon sink into a source of emissions. The project aims to reduce greenhouse gas emissions from degraded peatlands by restoring 70 sites in the departments of Doubs and Jura. To this end, nature-based solutions will be developed to stop water draining away from the land, revitalise former peat extraction sites, restore watercourses and more. The work should increase the peatlands' resilience to climate change and improve their ecosystem services.

[Project summary](#)

Clean Energy Transition

Local ownership of power (LIFE LOOP)

An innovative programme has enabled local authorities and six EU Member State regions to develop sustainable energy plans through community energy partnerships. The project will replicate this approach in another four countries (Bulgaria, Cyprus, Romania, Italy) and then EU-wide. The project team will build capacity and empower local and regional governments and residents to work together to develop and deliver clean community energy.

[Project summary](#)

Building skills for energy-efficient renovation in France (BUS2 FRANCE)

The project team will address the need to upskill the workforce to support France's energy and building renovation goals. They will relaunch a national skills-building platform with a local/regional focus to mobilise and coordinate public and private stakeholders and to match market demand to upskilling initiatives. The platform will complement other national training programmes and create synergies with circular economy and other EU policy areas.

Project summary

Developing tools to meet the growing demand for net zero energy renovation (LifeGigaRegioFactory)

The project addresses the need to step up efforts to achieve targets for energy-efficiency renovations of European homes. The project team will engage with housing associations and industrial players to build on existing initiatives, including those carried out under the EnergieSprong programme. The aim is to develop an open-source tool for the qualification of housings and introduce a total solution integrator accelerator that trains companies that integrate and assemble industrial solutions. The creation of an industrialisation giga factory kit that enables solution providers to scale-up operations to meet significantly rising demand is also foreseen.

Project summary

Maintaining up-to-date databases on energy efficiency policies and their impacts (OdysseeMure fit-4-55)

The project plans to create up-to-date and user-friendly databases and online tools for monitoring and evaluating the impact of energy-efficiency policies. The ODYSSEE and MURE databases will be extended to nine EnC countries. New tools, such as a web-based energy efficiency policy assessment tool and a policy radar, will strengthen the capabilities of these countries and the Member States. The project results will be disseminated in cooperation with the European Council for an Energy-Efficient Economy and other international and regional organisations, such as the Energy Community Secretariat and the International Energy Agency.

Project summary

Roundtables to help deliver on climate and energy targets (NECPlatform)

Collaboration between different levels of government and stakeholders is vital for the clean energy transition. The project will support six Member States in setting up platforms for multi-level dialogue on climate and energy. Taking the form of roundtables, these platforms will help France, Bulgaria, Croatia, Italy, Portugal, and Romania comply with the EU's Governance Regulation. Each platform will meet six times during the project, bringing together a wide range of stakeholders to ensure that energy and climate policies are co-created and consistent at all levels of government and amongst different sections of society. The goal is for these platforms to deliver draft and final updated national energy and climate plans in 2023 and 2024, respectively.

Project summary

Developing a model for energy transition investments for business parks (LIFE CirculEnergies)

Business parks represent a third of all urbanised areas in France and are significant contributors to climate change. High costs and unstable legal frameworks hamper energy transition initiatives at these business parks. The project will address these problems by developing a scalable, turnkey (ready-to-go) model for investing in energy-efficiency renovations. Its multiple-stakeholder approach will be ensured by establishing a consortium of companies with strong credentials in this area.

Project summary

Supporting energy transition renovations through improved scenarios and streamlined communication (CONCERTO RENOV)

The project aims to support companies providing energy transition solutions to ensure that homeowners are accompanied throughout the renovation process – from the initial evaluation to monitoring energy savings over time. The team will develop a tool for accessing multiple national housing and energy databases to provide more detailed renovation scenarios than currently available. They will also create a platform for streamlining exchanges among the actors engaged in the process. The economic viability of its approach will be demonstrated in the Landes and Jura Department, with an expected fivefold increase in deep renovations.

Project summary

Reducing the cost of energy transition renovations in social housing areas (EP-O)
This project aims to support the deep energy renovation of buildings in disadvantaged areas to combat energy poverty. Its focus will be on decreasing the cost of social housing renovations by supporting the development of industrialised, prefabricated solutions. The project will build on existing initiatives, including those carried out under the EnergieSprong programme. A key outcome will be tools that allow cities to assess the potential for retrofitting in each district.

Project summary

Croatia

Nature and Biodiversity

A better conservation status for the Balkan terrapin (LIFE for Mauremys)

The Balkan terrapin, an iconic freshwater turtle, has an unfavourable conservation status in Croatia. The project will combat the terrapin's decline across five Natura 2000 sites in Dubrovnik-Neretva County. A breeding programme at Zagreb Zoo should provide 40 hatchlings for release on one site, saving one of the country's most threatened populations. Their work will raise awareness about the importance of the Balkan terrapin, biodiversity protection and the Natura 2000 network. Working closely with the local community, the project team will restore ponds and other wetland habitats across four Natura 2000 sites and remove invasive alien species, improving habitat quality and connectivity. They will also secure turtle nesting sites from predators and invasive agricultural practices through collaboration with landowners. Also, a turtle-friendly fish trap will help avert by-catch deaths.

Project summary

A brighter future for griffon vultures (LIFE SUPport)

The Kvarner Islands are the last stronghold for griffon vultures in Croatia, where just 110-130 pairs remain. To ensure their survival and hopefully an increase in numbers, the project will tackle the most significant threats in the birds' breeding grounds: nest disturbance, lack of food, poisoning and electrocution. Improvements are planned at a local griffon vulture rescue centre; an expanded network of feeding stations and more natural feeding opportunities will increase food availability. The project team plans to explore ways of deterring poisoned bait use, promote lead-free ammunition and boost enforcement agencies' capacity to fight illegal wildlife poisoning. They will also reduce griffon vulture deaths in critical electrocution hotspots.

Project summary

Clean Energy Transition

Supporting local and regional energy and climate plans through structural integration (LOCAL-IN-PLAN)

The project will develop, test and roll out the IN-PLAN support structure for local and regional authorities seeking to implement sustainable energy and climate plans. The project's approach allows these plans to be integrated with other planning forms and included in local budgets. The team will carry out a two-step programme for enhancing the capacities of the 15 local and regional governments engaged in the project. The programme will include training key personnel who will subsequently be able to replicate the training at all levels of government.

Project summary

Facilitating investment in energy-efficient district heating systems (PDA-D2Heat)

District heating systems have a vital role in reaching climate change targets. The D2Heat project will develop a tender dossier for investments in district heating that incentivises the use of innovative energy-efficiency technologies. In partnership with the four largest district heating companies in Croatia, the project will also develop a technical support facility for stakeholders in the sector. The aim is to facilitate the investment of around €39.9 million in renewable energy production capacities and heat storage within the existing district heating networks. These funds will also go into retrofitting and replacing old pipes and distribution network equipment and upgrading monitoring and control mechanisms.

Project summary

Supporting skills improvement in the building industry (CRO skills RELOAD)

Energy inefficient buildings are responsible for 40% of Croatia's energy consumption and 36% of CO_2 emissions. Almost one-third of the country's buildings are in the worst category for energy performance. To improve this, Croatia needs an educated workforce on issues affecting the decarbonisation of the building sector, such as new technologies, innovative renovation and construction methods, and standards of nearly zero-energy buildings. The project will re-establish a national platform supporting the upskilling of building industry professionals in energy efficiency and renewable energy. It will also improve the national roadmap on skills development in the building sector to help achieve Croatia's energy and climate goals.

Project summary

Italy

Nature and Biodiversity

Restoring rocky reefs to enhance biodiversity (REEForest)

Macroalgal forests, one of the most productive and valuable habitats in the Mediterranean, are rapidly being lost. With an important role in supporting biodiversity, their loss is leading to a decline in critical ecosystem services – the benefits provided by nature – and a reduction in the sea's ability to lock away carbon and help mitigate climate change. Partners are looking to reverse the degradation of rocky reefs and provide habitat for endangered brown algae through restoration and monitoring work in four marine protected areas (MPAs) – three in Italy and one in Greece. Building on the results of an earlier project, the goal is to restore the MPAs' ecological status via conservation and reforestation measures. The team will develop guidelines on Mediterranean marine forest restoration and also share methods that can be used to replicate and scale up restoration in other areas and with other species.

Project summary

Protecting lakes from invasive catfish (LIFE PREDATOR)

The project will combat the spread and further introductions of wels catfish in southern European lakes, supporting the EU Invasive Alien Species Regulation. An early detection system based on environmental DNA, which works by detecting catfish DNA left behind in the water, will be developed and tested in 50 lakes in Italy, Portugal and Czechia and combined with citizen science data. Different techniques will be trialled in 10 lakes where catfish are widespread to find the best way to capture them selectively and effectively. With the help of commercial fishers and anglers, this method will reduce catfish numbers in different lakes and reservoirs. Extensive awareness-raising campaigns are planned and expected to reach 1 million people by the end of the project. In northern Italy, where the catfish invasion is more advanced, the plan is to encourage its consumption as food. Fish caught during control work will be used to prepare meals sold by social cooperatives to people facing socio-economic challenges. The project's best practices will be shared for use in other Natura 2000 sites, while a South European catfish management group will be set up to replicate the project's results.

Project summary

Regenerating deep reefs in the Mediterranean Sea (LIFE DREAM)

Marine deep reefs attract a wide range of animals and act as carbon sinks. However, they face many threats, from climate change to fishing and litter. In line with the EU's biodiversity strategy for 2030, the project aims at reducing the pressure humans put on these deep, sensitive habitats. The plan is to help regenerate deep reefs by deploying artificial structures for reef-forming species to colonise and grow. Also, marine litter will be removed and converted into biofuel, helping to reduce carbon dioxide emissions. Involving fishers and other stakeholders in activities should increase the project's impact and change behaviour. The team will provide information to help extend Europe's Natura 2000 network of protected areas to the deep Mediterranean Sea. They will also develop best practices for deep reef restoration.

Project summary

Conserving freshwater fish in tributaries of the upper Po (LIFE Minnow)

This project aims to prevent the decline of six types of freshwater fish in tributaries of the upper Po River. The species, which include the Po brook lamprey, South European and Italian nase, and Italian loach, have an unfavourable conservation status. To combat this, connectivity will be restored to more than 120 kilometres of watercourses currently interrupted by barriers, along with habitat improvements at 13 strategic points. River populations will be restocked with five species from a fish farm. The project team will tackle invasive alien species, controlling and reducing their presence over 440 kilometres spread across 20 Natura 2000 sites in the Piedmont region. Fishers, volunteers, students and citizens will be actively involved in conservation work. Guidelines on river continuity will feed into the Po River Basin Management Plan – a vital tool for implementing the EU Water Framework Directive. The project team also plans to transfer results to other areas of Italy, Spain and France, facing similar threats.

Project summary

Safeguarding the European pond terrapin (LIFE URCA PROEMYS)

This project aims to improve the European pond terrapin's conservation status in Italy and Slovenia while maintaining the genetic diversity of existing populations. The natural habitats of this freshwater turtle will be improved on at least 29 sites, with 13 areas or more set for restocking with terrapins. In addition, seven rescue and breeding centres will be restored, and populations of invasive turtles reduced or eradicated on at least 42 sites. The team will develop a plan for protecting European pond terrapin populations in Italy and Slovenia for adoption in all Natura 2000 sites involved in the project. And public awareness will be raised about the conservation of this turtle and the threat posed by releasing invasive species in natural habitats.

Project summary

Better conservation of Mediterranean forests (LIFE GOPROFOR MED)

Many Mediterranean forest habitats can be classified according to their different conservation and management regimes. However, there is no standard system for recognising and classifying the habitats or precisely evaluating their conservation status. This hinders the development of clear, shared strategies for conserving them. The project's goal is to provide flexible models of close-to-nature forest management. These will be applied to demonstration areas in Italy, Spain, France and Greece, where oak, sweet chestnut and pine forests are widespread yet threatened by careless management of silvicultural practices.

Project summary

Environment and Resource Efficiency

Exploiting the carbon content of sewage sludge (CROSS-LIFE)

The sludge from wastewater treatment systems contains a high quantity of organic material with great potential for reuse. The project will convert this carbon content into crotonic acid, used to manufacture paint, textiles, adhesives, ceramics and agrochemicals. Crotonic acid is currently derived from fossil fuels, but the project's process requires no additional resources, leading to carbon emission savings and a reduction in the amount of sludge for disposal. Partners will set up two pilot

plants to demonstrate the feasibility of its approach.

Project summary

Electric agricultural machinery and tractors as a sustainable alternative to combustion engines (LIFE ATENA)

This project aims to facilitate the electrification of agricultural machinery by changing the mindset of the farming community. It will promote hybrid and fully electric tractors for use in vineyards and orchards and the electrification of supporting machinery. Such a transition to more sustainable and less polluting equipment will show that it is feasible to reduce fuel consumption by 45% and the use of lubricant oil by 30%. Electrification of machinery also lowers noise pollution. The team expects to achieve an uptake of 3 440 green tractors within five years after the end of the project.

Project summary

Removing PFAS from groundwater and aquifers (LIFE FOUNTAIN)

The project addresses the problem of harmful per- and polyfluoroalkyl substances (PFAS) in groundwater and aquifers. PFAS are chemicals found in many products. The team will propose a remediation process based on functionalised magnetic nanoparticles and advanced electrochemical oxidation that allows treated groundwater to be reused in the surface finishing industry. They will also improve knowledge of the environmental impact of PFAS while promoting acceptance and the business opportunities related to its cost-effective approach to remediation. A network of industrial partners to foster the technology's rapid uptake is foreseen.

Project summary

Producing green composite sinks from reused waste (LIFE GREEN COMPOSITE)

The manufacture of sinks involves the landfilling of vast quantities of mineral waste contaminated with polymers. This project aims to show that mineral composite sinks can be produced on a pilot and industrial scale by reusing waste from acrylic mineral composites and producing these composites from secondary raw materials. The process, which will comprise new product designs, is expected to confirm that all sink waste can be recycled. The beneficiary will promote its green composite production line to consumers, bringing a new range of products to market.

Project summary

A copper-free alternative pesticide for grape, tomato and olive cultivation (LIFE MICROFIGHTER)

The pesticides used to cultivate grapevines, tomatoes, and olives are currently copper based. The project aims to demonstrate the viability of an environmentally sustainable alternative called zeo-biopesticide. Partners will show that using this pesticide decreases the amount of copper accumulated in the topsoil by at least 0.7 ppm each year, thus improving soil biodiversity. They will promote the project's results to farmers and policymakers, drawing up a business plan for their exploitation.

Project summary

Reusing brewing by-product as packaging material (LIFE RESTART)

The brewing industry produces 6.4 million tonnes of brewer's spent grain annually in the EU, 20% of which is landfilled. The project will show that this by-product can be reused as a substitute for fossil-based plastics in packaging. The team will also recover water from the brewer's spent grain, improving wastewater quality and reducing the consumption of natural resources. They will demonstrate the economic viability of the process, with the target of achieving revenues from the by-product of €21.5 million three years after the end of the project. And they foresee the creation of 35 jobs.

Project summary

Reusing worn-out shoes and production scraps as secondary raw materials (LIFE RE-SHOES)

Most shoes are disposed of in landfill sites at the end of their life, with only a small percentage recycled – due in part to the difficulty of separating shoe components. This project aims to develop a new circular economy business model based on collecting, sorting and recycling used outdoor shoes to obtain secondary raw materials for the manufacture of new generation of high-quality shoes.

Project summary

Creating a supply chain for reusing bio-lubricants (LIFE BIO-LUBRICANT)

While bio-lubricants are increasingly replacing less sustainable mineral-based lubricants, the two lubricants are not collected separately. This prevents the regeneration of waste from the biological source. This project plans to introduce, on a semi-industrial scale, a system for collecting used bio-lubricants from several industrial sectors. The team will apply an innovative technology for removing impurities and transforming the obtained fatty acids into new base oils. The by-products from the process will be reused in advanced biofuels.

Project summary

Highlighting best practices in water management and savings for bus operators (LIFEH2OBUS)

Vast quantities of freshwater are used every year to clean Europe's buses. The project aims to manage this water consumption via a flexible software system that can be adapted to different economic, geographic and climate contexts. The approach involves wastewater reuse, the harvesting of rainwater and the use of waxing without water. These techniques will be applied over a one-year testing period. The Sapienza University of Rome will analyse the results ahead of the drawing up of guidelines on their use.

Project summary

Reducing pollutants from buses braking (RE-BREATH)

Bus stop pollution levels can be very high due to the particulate matter emitted when vehicles brake. The project will demonstrate a braking system that reduces the emission of this harmful pollutant while supporting the monitoring of non-exhaust emissions across Europe. The team will show that the system lowers the wear rate and is thus more sustainable. It will be applied to a fleet of 10 buses in two cities, Bergamo and Bratislava, which have high concentrations of particulate matter.

Project summary

Reusing protein from grape pomace (SEEDSPRO2WINE)

Around 40% of the grape pomace generated as a by-product by the winemaking sector is reused as fertiliser or fuel despite its rich protein content. However, proteins extracted from grape seeds could be reused in the stabilising phase of the winemaking process. This project's circular economy model consists of substituting protein gelatine, usually obtained from animals and crops at a greater environmental cost, with protein extracted from the pomace. Until now, this extraction has proved technically tricky, but the team hopes to demonstrate a solution that achieves an economically viable yield.

Project summary

Pioneering the manufacture of recyclable composite materials (TOOL4LIFE)

Although composite materials are lighter than other materials without compromising rigidity and resistance, they are not easily recyclable. The project, however, will demonstrate the production of tools using thermoplastic materials that can be fully recycled after use. Its approach, moreover, can be retrofitted into composite processing plants. And its deployment at an Italian composite manufacturer is expected to recoup investment costs in the short term thanks to resource and energy savings and the generation of additional revenues.

Climate Change Adaptation

Making forests resilient to climate-exacerbated pathogen outbreaks (LIFE FAGESOS)

The project will remediate climate change-exacerbated outbreaks of invasive plant pathogens that adversely impact forest ecosystems, particularly fungal Phytophthora diseases in evergreen oak and chestnut ecosystems. The team will introduce tools to enhance forest resilience. These will include regional maps for risk assessment of diseases, Integrated Pest Management (IPM) protocols tailored to specific ecosystems, and monitoring protocols based on innovative models and technologies.

Enabling pollinators to locate earlier-flowering plants (LIFE BEEadapt)

Climate change can cause desynchronisation between pollinators and the flowering periods of plants they pollinate. This project aims to enhance habitat connectivity to reduce the impacts of this effect. The project team will design pollinator-oriented Green Infrastructure (GI) in rural and urban areas and demonstrate actions in five Italian regions. They will also develop a governance model that involves farmers in GI design and management and establish criteria for the payment of pollination-related ecosystem services.

Climate Change Mitigation

Promoting tools for climate-proofing forests (LIFE ClimatePositive)

In Italy, 31.5% of the land is covered by forests, but only 15% of this area has management plans. This project will promote innovative and digital forestry to enhance responsible management and carbon removal. The team will also promote the national carbon monitoring tool to enable the full certification of climate impacts. And they will develop business models to remunerate landowners for providing carbon and biodiversity benefits. Interventions will be demonstrated in five pilot forests.

Climate Governance and Information

Supporting the EU Emissions Trading System (LIFE COASE)

This project will support EU and Member State policymakers in developing and implementing the EU Emissions Trading System (ETS), including its integration with other carbon markets. Partners will establish the first observatory for ETS assessment. This will improve data for ETS assessment, generate new firm-level data on climate investments, produce indicators for monitoring the ETS, synthesise model-based ETS assessments, support international dialogue, and disseminate knowledge.

Clean Energy Transition

Enabling communities to generate clean energy (CONNECTHEAT)

The project team will develop an enabling policy framework to boost community-led energy initiatives to decarbonise the heating and cooling (H&C) sector. They will implement seven pilots of H&C community energy in seven countries, with dissemination and replication actions planned across the EU. The project team will train people with the necessary skills, develop seven policy roadmaps, and propose tools and supporting schemes to develop community energy further.

Boosting building space cooling across the EU (CoolLIFE)

Demand for building space cooling has been increasing steadily in Europe and is expected to grow over the coming years. The project team plans to create a tool for mapping demand for space cooling to help meet this rising demand. It will also provide other valuable indicators such as user behaviour, the legislative environment and the economic situation. To further address the lack of data on space cooling, the project will develop an online knowledge hub comprising FAIR (findable, accessible, interoperable and reusable) and quality-controlled sources. Both tools will be developed closely with target users and tested across Europe. Finally, the project will create a strategy for ensuring their widespread application.

Project summary

Supporting home renovations via a one-stop shop for technical services (EASIER)

The project aims to update the one-stop-shop established by a Horizon 2020 initiative to provide technical services to condominium managers, property professionals and homeowners. The team plans to develop a new public-private model for household renovation needs. They will involve all stakeholders in the value chain in redesigning the one-stop shop and increasing its geographical reach. A virtual platform with guided access to services is also foreseen.

Project summary

Increasing uptake of energy efficiency measures (AUDIT-TO-MEASURE)

Energy audits are essential for improving business and industry's energy efficiency but implementing the energy-saving measures proposed by these audits is relatively low. The project's objective is to support companies in applying the necessary measures to reduce their energy consumption. First, the project team will identify barriers to adopting energy-saving measures and develop solutions to overcome them. Then they will create a programme to motivate and increase the capacity of company professionals to improve energy efficiency. The effectiveness of this method will be tested by helping a series of companies apply selected energy-saving measures. A new knowledge exchange space should ensure that results are sustainable and replicated elsewhere after the project ends.

Project summary

Cyprus

Climate Change Adaptation

Adapting agriculture to a changing climate (LIFE AgrOassis)

Partners will support climate change adaptation in the agricultural sector in Cyprus and Greece. To this end, they will develop, demonstrate and promote innovative techniques and approaches to reduce the risks associated with desertification, inappropriate land use and wildfires. They will also implement measures to regenerate ecosystem services and restore biodiversity through the afforestation of degraded field margins and aiding pollinators.

Project summary

Clean Energy Transition

Smart tools for smart buildings (SMART SQUARE)

The project team will develop tools for increasing the smartness of buildings (Smart²) based on the EU Smart Readiness Indicator (SRI) scheme. They will deliver a cloud-based open platform for assessing buildings to identify cost-effective smart building improvements, an SRI observatory to monitor progress, and an SRI audit process to foster standardisation. Real-time data will also be used to resolve interoperability and cybersecurity issues.

Project summary

Latvia

Nature and Biodiversity

Restoring neglected grassland habitats (GrassLIFE2)

Long-term neglect of semi-natural grasslands in Latvia has left these habitats fragmented and in poor condition, with a dramatic decrease in coverage. The project will build on the work of an earlier project, which introduced a range of innovative restoration approaches in Latvia and revived grassland habitats on 14 Natura 2000 sites. With a package of measures from best practice restoration to trialling new methods, the team will tackle all significant factors responsible for the habitats' unfavourable conservation status on 11 Natura 2000 sites. These sites are essential for connecting the country's grassland habitats. Overall, 1 260 hectares will be restored, an area almost twice the size of Gibraltar. The project will support the implementation of the EU's Habitats Directive and the Biodiversity Strategy for 2030.

Project summary

Climate Change Mitigation

Restoring peatlands and monitoring changes in greenhouse gas emissions (LIFE PeatCarbon)

The project team will implement climate change mitigation measures on peatlands in Latvia and Finland. They will demonstrate innovative tools for monitoring greenhouse gas (GHG) emissions and peatland restoration, including remote sensing and modelling. They will also produce an internationally applicable best practice guide on mitigation measures, harmonised GHG measurement and data processing methods, and an ecosystem model for degraded peatlands in the Baltic Sea region.

Project summary

Clean Energy Transition

Engaging municipalities in sustainable energy and climate action plans (OwnYourSECAP)

A range of obstacles to the implementation of local, sustainable energy and climate action plans persist, including a lack of a sense of ownership of these plans among municipalities. The project will introduce the OwnYourSECAP concept to address this problem. The approach is based on energy management systems that follow the ISO 50001 standard, urban climate adaptation in compliance with ISO 14092, and innovative engagement approaches. The team will help municipalities to strengthen governance structures, secure more substantial political commitment and resources, ensure sectoral integration and set more ambitious targets for carbon neutrality and resilience. They will train and assist more than 110 target and replication municipalities and 1 500 public officers.

Project summary

Promoting non-energy benefits in energy audits to boost efficiency investment (KNOWnNEBs)

Current energy audits do not cover the non-energy benefits of energy-efficiency investments, such as improved product quality and indoor comfort. These audits, therefore, do not effectively promote efficiency measures. National energy efficiency programmes for industry also neglect to include non-energy benefits. To address this oversight, the project will develop a methodology for assessing all the potential benefits of energy-efficiency measures to boost investment. This new approach will be added to the auditing practices of each partner country and tested via pilot energy audits in the food and drink sectors. The results will be presented to policymakers, energy experts and other industrial sectors to support replication on a broader scale.

Project summary

Lithuania

Nature and Biodiversity

Sustainable farming to benefit corncrakes and wading birds (LIFEfarms for birds)

The project will see sustainable farming methods and mobile grazing used to support corncrakes and threatened grassland waders in six special protection areas (SPAs) – sites home to rare and

vulnerable birds. Wet meadows and mire habitats will be restored on 460 hectares of agricultural land – an area more than twice the size of Monaco – by regulating water levels and getting rid of overgrown vegetation. Cattle-breeding farms and mobile grazing will then maintain these habitats and some additional sites. The idea is to show that climate-friendly farming is economically sustainable for extensive cattle farms while maintaining habitats. Populations of corncrake and threatened grassland waders should double in each of the six SPAs. By promoting sustainable, nature- and climate-friendly farming across Lithuania, it is hoped that 40 farms will follow suit and adopt the project's practices.

Project summary

Clean Energy Transition

Building skills in Lithuania's construction sector (REBOOT-SKILLS-LT)

The project team will revitalise the construction sector in Lithuania by upskilling building professionals, in line with the EU BUILD UP Skills initiative. They will also update the national roadmap previously developed under the initiative to reflect new 2030 energy and decarbonisation targets. The focus will be on filling skill gaps in digitisation, smart buildings, resource efficiency, circular economy, renewable energy, heating and cooling, and industrial renovation.

Project summary

Hungary

Nature and Biodiversity

Restoring rivers to return water to Hortobágy wetlands (SODIC WETLAND SYSTEM)

Regional drawdown of rainwater combined with climate change has meant less water entering sodic wetlands in Hortobágy every year, causing a significant water deficit. Dry habitat in riverbeds has increased, with the wetlands' water balance further upset by the spread of reeds, cattails and water-hungry trees and shrubs. The conservation status of the Pannonic salt steppe and salt marsh habitat has worsened significantly as a result, reducing populations of essential bird species by 300-400% and affecting the wetlands' ecosystem services – the benefits provided by nature. The project is aimed at tackling the water deficit in 15 sodic wetlands. This should be achieved by restoring watercourses which will channel more rainwater from the wider catchment area into the wetlands, reducing the proportion of dry sodic habitats from 33% today to 5% by the end of the project. The number of breeding and migratory birds should increase, reaching close to the maximum levels that the wetlands can support.

Project summary

Recovering the North-Hungarian Plain's saker falcon population (LIFE SakerRoads)

Saker falcons are on the decline on the North-Hungarian Plain. The project aims to reverse this decline, increasing the population's size and breeding success by 20%. An intensive surveillance system in breeding territories will seek to rapidly detect and deal with problems, reducing deaths caused by power lines and persecution. The project team also hopes to increase bird mortality detection significantly and will investigate the reasons behind deaths and breeding failures. Saker falcons' breeding success should increase thanks to greater availability of prey species – through the restoration of a dirt road network between agricultural land to improve habitat conditions along the food chain – and more nesting sites, with artificial nests provided in all active and abandoned territories. To decrease conflicts of interest and ensure adequate conservation measures, intensive communication work will focus on raising awareness about the species and its threats.

Project summary

Clean Energy Transition

Developing construction skills in Hungary (ConstructSkills4LIFE)

The project team will reboot the national BUILD UP SKILLS Platform to reskill construction workers in Hungary for all life cycle phases of buildings to help the industry reach energy efficiency targets by 2030. They will integrate digital technologies and renovation practices and foster cooperation and

entrepreneurship among construction industry stakeholders. The beneficiaries will also update the national Roadmap of the Platform to provide an effective strategy and recommendations.

Project summary

Netherlands

Nature and Biodiversity

Support for the critically endangered black vulture in Portugal and western Spain (LIFE Aegypius return

The cinereous vulture, also known as the black vulture, is critically endangered in Portugal. The species faces many threats, such as increasing forest fires, poisoning, limited food availability or unsafe food, disturbance during breeding, collision with power lines and electrocution. The project will tackle these threats, managing habitat to prevent forest fires in existing colonies and improving food availability by creating new feeding areas. Switching to non-lead ammunition on several hunting estates should reduce the risk of lead poisoning. Partners will also manage habitat around existing and potential new colonies in Portugal and at nearby Spanish sites to expand the vulture's range, encourage new colonies and support the species' expansion. The plan is to double the breeding population in Portugal from 40 pairs in four colonies to at least 80 pairs at five sites. By the end of the project, it is hoped the vulture's conservation status will improve from critically endangered to endangered, eventually reaching favourable status in the long term.

Project summary

Environment and Resource Efficiency

Developing a fully circular reinforced concrete (CIRRCON)

The project will demonstrate a fully circular process for producing reinforced concrete with full load-bearing capabilities. Its technology uses low-grade recycled concrete fractions and eliminates the need for primary materials. It could reduce raw limestone use by more than 90%, potentially saving around 7.3 million tonnes annually in the EU. Partners will use the new circular concrete to manufacture tunnel components, railway sleepers, slabs and cladding. The aim is to show that this technology is ready for upscaling.

Project summary

Demonstrating the first circular bus concept in Europe (LIFE CICLE)

The circular economy concept can be applied to the transport sector just as readily as other industrial sectors. The project will design and construct a circular bus that has been retrofitted with a hydrogen-powered engine along with tyres and seats made from reused materials. The team will also devise a route for the bus in the South Holland province of the Netherlands that features bus stops that respect circular economy principles. The project's concept will be replicated in Italy and Croatia during and after the project.

Project summary

Environmental governance and Information

An innovative green public procurement approach to artificial turf pitches (LIFE GREEN PITCHES)

This project will implement an innovative green public procurement method known as 'Scale Up' to facilitate the uptake of circular, bio-based, non-polluting, climate-resilient and energy-efficient artificial turf pitches. The approach fosters cooperation in drafting ambitious tender specifications and monitoring. The project's method will be applied in three prototype and pilot locations. The team will monitor and evaluate the applied innovations, which are expected to reduce the use of raw materials and plastics and lower carbon emissions. The team aims to replicate the project approach at 25 additional sites within five years of the end of the project.

Project summary

Climate Change Adaptation

Precision farming for water-efficient agriculture (LIFE Future farming)

Partners will help prepare the EU's farming sector for increasingly frequent water scarcity and droughts by optimising water use through precision farming. They will deploy 450 sensors to enable 150 farmers to use water more efficiently in six countries: Spain, Italy, Portugal, France, Romania and Greece. The project's solutions will then be promoted in other countries, so they can significantly contribute to combating water scarcity in the EU.

Project summary

Climate Change Mitigation

Adding value to waste grass (GR4SS)

Biomethane production from grass waste can significantly contribute to reducing greenhouse gas emissions. The world's first Grass Refinery for Sustainability & Shared value (GR4SS) is being developed as a commercial mono grass fermentation demonstration plant. Partners will create four new sustainable products from grass from road verges and nature reserves, including biogas and peat-substitute fertilisers, along with a robust business model for grass processing.

Project summary

Clean Energy Transition

Home renovations to address rural energy poverty (RENOVERTY)

Through widely replicable renovation roadmaps, the project team will encourage energy- and cost-efficient building upgrades in southern and eastern Europe. The aim is to reduce energy poverty in rural districts. Specifically, the team will deliver tools and resources to support local financially viable roadmaps with the participation of all relevant actors. The project team will also ensure that building retrofits consider the social dimension to improve the quality of life of vulnerable populations.

Project summary

Innovative energy service for sector integration (InEExS)

The project team will use innovative blockchain technology to integrate energy services across sectors and carriers. The goal is to enable energy savings, greater system efficiency, and non-energy benefits such as comfort and health. The focus will be on business models that foster cooperation and facilitate implementing sector-integrating smart energy services and sustainable technologies. These include renewable energy, distributed energy resources, electric vehicles, and heat pumps.

Project summary

Empowering people to reduce energy poverty (JUSTEM)

The project team selected six EU regions highly dependent on coal, where people are vulnerable to energy poverty. In these regions, they will build regional capacity and include citizens in developing energy and climate plans. The Just Energy Transition will be facilitated by increasing the uptake of sustainable energy solutions, informing people of the multiple benefits provided, and through actions to alleviate energy poverty in the six regions.

Project summary

Strengthening the implementation of energy efficiency policies (ENSMOV Plus)

The project team will support public authorities and stakeholders in 11 EU Member States to help them achieve Energy Efficiency Directive (EED) targets. They will assist these groups in evaluating and improving the design and implementation of their energy efficiency policies. To facilitate this, the team will develop an experience-sharing programme, with thematic workshops addressing EED Article 7 requirements, underpinned by technical support.

Project summary

Supporting small furniture-producing businesses in their transition to sustainable energy use (DEESME 2050)

The European furniture sector is the second largest globally, employing more than a million people in mainly small businesses. The project plans to apply the DEESME approach to guide SMEs in this significant manufacturing sector through their energy transition strategies. Specifically, it will support companies seeking to implement energy efficiency measures, building up the capacities of employees at all levels and ensuring the sustainability of the proposed actions by cooperating with associations and policymakers on financing, standardisation and replication.

Project summary

Promoting socially responsible investment through test cases and engaging with policymakers (SRI2MARKET)

The project will support adopting socially responsible investment (SRI) in Austria, Croatia, Cyprus, France, Portugal and Spain. Actions will complement planned national activities, showcasing the lessons learned and successes achieved in Austria and France as test cases. Through this approach, the project team intends to help accelerate policy decision-making on SRI and establish the groundwork for its wider rollout. The aim is to engage with policymakers and other stakeholders to generate interest and opportunities for SRI.

Project summary

Creating a Market Activation Platform to speed up the renovation of EU buildings (BuildUPspeed)

The project aims to accelerate the energy-efficiency renovations of EU buildings by developing a so-called Market Activation Platform that promotes and supports the implementation of industrial solutions. The platform will bring together the critical outputs of EU projects for industrial solutions and Building Information Modelling adapted to efficient renovation. These outcomes will be digitalised to increase their accessibility online. The project team will also introduce the concept of fully automated 'local' or 'pop-up' factories, which will serve as pilot examples in various locations of how renovation can improve the environmental performance of buildings.

Project summary

Promoting Integrated Home Renovation Services models for condominiums (CondoReno)

Most Integrated Home Renovation Services (IHRS) do not sufficiently address the needs of condominiums in large cities in the Netherlands and Flanders. The project will oversee the creation of six IHRS for buildings co-owned by multiple private homeowners. It will develop adapted IHRS business models that will be tested by intervening directly in the meetings of eight condominium associations. Other outcomes will include training associations and SMEs on quality assurance and performance contracting and generating demand for local IHRS through workshops and matchmaking.

Project summary

Building skills to speed up the renovation wave (BUS-NL)

The project will revitalise a national platform supporting the upskilling of building industry professionals in energy efficiency and renewable energy. By involving new stakeholders, the platform's scope will be broadened to reflect the emerging reality and needs of the building sector. The project team will update the existing analysis of professionals' skills in the industry as well as a national roadmap for skills development. The objective is to accelerate the renovation wave by addressing the mix of skills needed in the building sector.

Project summary

Embedding energy efficiency in regional planning (REGIO1ST)

The energy efficiency first principle (EE1st) is a vital part of EU energy policy, intended to ensure a secure, sustainable, competitive and affordable energy supply. This project seeks to increase awareness about the EE1st principle among regional governments and their agencies. The team will guide regional authorities to embed the principle in their decision-making and energy planning. Starting with six regions, it will expand to more than 100 regions in the EU. The project also aims to support the introduction of EE1st in national energy action plans and encourage multi-level dialogue on climate and energy. A customised decision support tool for regions will include a set of practices for engaging stakeholders and citizens, thus helping to increase social acceptance of the EE1st principle.

[Project summary](#)

Poland

Nature and Biodiversity

Recovering wet grassland populations of wading birds (LIFE4WadersPL)

Wading birds found in wet grasslands are declining rapidly in Poland. The project team hopes to turn this around by boosting breeding numbers in 10 nature reserves and on surrounding private land by 50%. They will improve and expand the birds' habitats through land purchases and rewetting, restoring abandoned meadows and introducing grazing to some areas. Nest protection and predator control should help improve breeding success for priority species like the lapwing and black-tailed godwit. Agri-environment schemes (which provide funding for farmers to protect wildlife habitats on agricultural land) in 12 Natura 2000 sites and on private land will mobilise additional funding for wading bird conservation.

[Project summary](#)

Environment and Resource Efficiency

A circular economy approach to mixed hard plastic waste (plasticLIFEcycle)

Mixed hard plastic waste is currently neither recovered nor recycled. The project aims to demonstrate an innovative solution for sorting this waste stream into recyclable fractions along with two systems for converting them into high-value products, namely tailored compounds and robotic 3D printing devices. Pilot units for producing these products will be designed and tested during the project. At the same time, the team will also focus on establishing a circular business network for cooperation among waste treatment plants.

[Project summary](#)

Environmental governance and Information

Managing Natura 2000 sites in military areas (INF-ARMY)

Many Natura 2000 sites, part of Europe's network of protected areas, are found on military land. The project aims to create a permanent management network for 116 such sites in Poland. The project partners aim to produce updated data on habitats and species, enhance conservation measures, and improve management procedures for nature conservation in military areas. Initiatives include a new training and information centre for managing Natura 2000 sites in military zones and a new training programme aimed at regional military administration staff. It is hoped the project will strengthen the cooperation of military and civil institutions in their joint management of the sites' natural habitats and reduce threats to these habitats (from invasive alien species, for example).

[Project summary](#)

Creating an information and behavioural-change platform to reduce mercury pollution from household goods (LIFE MERCURY-FREE)

The LIFE MERCURY-FREE project aims to reduce mercury pollution from household consumer goods by providing information on a communication and cooperation platform. This platform will also help to organise educational campaigns and behavioural change activities and create so-called 'mercury-free city communities. Activities will be piloted in four cities with similar characteristics: Lviv and Ivano-Frankivsk in Ukraine and Lodz and Cracow in Poland. Three more cities – Larissa (Greece),

Evora (Portugal) and Camerino (Italy) – will participate as control cities and will be the first to replicate the project actions.

[Project summary](#)

Climate Change Adaptation

IT systems for effective blue-green infrastructure in cities (LIFECOOLCITY)

The project will adapt at least 10 000 EU cities to climate change by implementing two innovative IT systems for managing blue-green infrastructure. The EUROPE system uses satellite data to rank cities according to critical environmental problems. The CITY system will be demonstrated in the city of Wroclaw, Poland, to precisely identify high-priority areas for implementing nature-based solutions and to monitor their performance. The two systems will be commercialised and replicated in the target cities.

[Project summary](#)

Clean Energy Transition

Building skills for the construction sector in Poland (BUPS Poland)

The project team will develop a strategy for improving the skills of construction sector workers at all education levels, especially for deep renovation using energy-efficient building technologies. This is crucial for meeting the 3% target for the thermo-modernisation of buildings per year needed to realise Poland's climate change objectives. The team will also reboot the national BUILD UP Skills platform in partnership with key stakeholders and update policy recommendations.

[Project summary](#)

Portugal

Nature and Biodiversity

Better conditions for degraded coastal dunes with sparse junipers (Zimbral for LIFE)

The project aims to improve the conservation status of degraded coastal dunes dotted with junipers through restoration work in three special conservation areas. More than 50 000 plants will be grown, and the habitat will be expanded at six sites. Other measures planned include increasing knowledge to bridge the information gaps about this habitat, improving the professional qualifications of land managers and other stakeholders, and making local and national populations aware of the importance of conserving coastal dunes featuring sparse junipers. A national action plan will also be developed to help improve this habitat's ecological condition.

[Project summary](#)

Environmental governance and Information

Reducing indoor radon levels (LeaRn4LIFE)

The level of radon (radioactive gas) in buildings can risk human health. The project will implement a training programme for remediation professionals while raising awareness among the public of the problem and providing them with affordable solutions for reducing concentration levels in line with EU targets. The project's approach is replicable in other EU countries.

[Project summary](#)

Climate Governance and Information

Sustainable and climate-resilience agriculture in Portugal (GrowLIFE)

GrowLIFE will foster behavioural change throughout the food system to promote sustainable practices in 12 municipalities across Portugal. The project's integrated approach will enable an effective transition to a sustainable and climate-resilient agricultural system. It will help farmers to deploy sustainable agricultural practices, incentivise policymakers to promote short food supply

chains, increase consumer awareness, and empower trendsetters in the catering profession to create sustainable meals.

[Project summary](#)

Climate Change Adaptation

Ecosystem restoration for climate-resilient forests (LIFE SERRAS DO PORTO

The Serras do Porto Park, comprising about 6 000 hectares, is the closest natural area to Oporto (Porto), Portugal. The project will implement various climate adaptation and ecosystem restoration activities in the Park's management plan. These actions will diversify forests, re-naturalise river areas, control invasive non-native species, and increase resilience to droughts, storms and wildfires.

[Project summary](#)

Clean Energy Transition

Creating a one-stop building renovation cooperative (OSR-Coop)

The project team will develop and demonstrate three cooperative 'one-stop-shop' building renovation services, focussing on the deep renovation of homes. They will build on the work of cooperatives deploying local home renovation services in Belgium, Ireland and France. Best collaborative practices will be identified and integrated into a financially viable renovation services model. Replication of the model will be supported by a toolkit, training, and information dissemination across Europe.

[Project summary](#)

Speeding up the replacement of old and inefficient motors (EU-MORE)

Electric motors have long lifetimes, often more than 20 years, so their replacement rate is slow. This affects the uptake of more energy-efficient industrial electric motors. The project team will develop new policies to accelerate the replacement of old, inefficient engines. Knowledge exchange between stakeholders involved in energy efficiency policy at Member State, European and international levels will also be promoted. As a result, the project will help Member States comply with the EU's Energy Efficiency Directive.

[Project summary](#)

Romania

Clean Energy Transition

Improving the building industry's skills in Romania (BUS4RoBOOST)

The project will reboot a national platform that supports upskilling of building industry professionals in energy efficiency and renewable energy. This platform will bring together key stakeholders to update previous analyses of professionals' skills in the Romanian building industry and a national roadmap for skills development. To revise the roadmap, the skills needs of both blue- and white-collar professionals will be mapped out, considering the skills required for the clean energy transition, the EU renovation wave and mainstreaming of nearly zero-energy buildings.

[Project summary](#)

Slovakia

Nature and Biodiversity

A boost for butterflies and other pollinators in central and eastern Europe (LIFE Metamorphosis)

The project will focus on conserving 15 species of butterfly – all protected by the EU Habitats Directive – in Slovakia, Hungary and Romania. The Danube clouded yellow, a species declining rapidly across Central Europe, will be a particular focus of the project in central Romania – one of the butterfly's last strongholds. Restoration work will target butterfly populations and the habitats that

support them – and other vital pollinators such as wild bees, wasps, hoverflies, bee flies and moths. The team is set to boost biodiversity, reduce pollinator decline and improve the connectivity of protected areas. To ensure the sustainability of the project's results, farmers and other stakeholders will be included in decision-making, restoration work and habitat management.

[Project summary](#)

Clean Energy Transition

Enabling the next generation of smart energy efficiency services (BungEES)

The project team will develop an integrated package of novel smart energy efficiency services (EES). They will focus on innovative legal, financial and regulatory solutions to overcome barriers and act as enablers. Demonstrations of smart EES will include advanced analytics to better manage energy consumption in buildings. The team will also assess methods to incentivise the uptake of smart EES and analyse regulatory conditions to unlock its full potential in different EU Member States.

[Project summary](#)

Slovenia

Clean Energy Transition

Supporting innovative community-driven investment in the energy transition (3DIVERSE)

The project will adopt a holistic, multi-sectoral and multi-level approach to investing in sustainable energy infrastructure through coordinated supply and demand side measures. A key outcome will be the production of technical investment documentation, including feasibility studies, investment programmes, market research reports, operational monitoring analysis and permits. The team will also publish investment Calls for tender. The aim is to mobilise private capital to foster community-driven investments by providing mechanisms that ensure improved access to capital, lower investment costs and higher transparency. The energy transition of the coal-intensive region of Savinjsko-šaleška will serve as a scalable model for replication elsewhere in the EU.

[Project summary](#)

Finland

Environment and Resource Efficiency

Towards zero emissions in ferrous foundries (GREEN CASTING LIFE)

Casting in ferrous foundries is a significant source of dust and hazardous air pollutants, which pose an occupational health risk and diminish urban air quality. The project aims to demonstrate the technical feasibility of substituting traditional organic binders with inorganic ones that reduce harmful emissions by up 90%. The project brings together six foundries in Spain, Poland, Estonia, Finland and Italy to implement its approach on an industrial scale, trialling various sand reclamation methods.

[Project summary](#)

Sweden

Nature and Biodiversity

Better conditions for the River Torne catchment area (TRIWA LIFE)

The project is a cross-border effort to enhance conditions in the entire catchment area of the River Torne Natura 2000 site. The goal is to improve the conservation status of species and habitats protected under the EU Habitats Directive and to reach 'good' ecological status as required by the EU Water Framework Directive. Measures planned include restoration of river habitats previously altered to make timber floating easier, thus returning them to a more natural state, and improving ecological connectivity by removing almost 400 barriers to migration on the Torne's tributaries, covering more than 3 300 kilometres. The project will account for more than 13% of the EU's target for at least 25 000 kilometres of rivers to be free-flowing once more by 2030. In addition, water levels and quality are set to improve on wetlands previously used for forestry by blocking more than 260 ditches.

Species such as the freshwater pearl mussel, Atlantic salmon, otter, bullhead and green club-tailed dragonfly should benefit from the project's work.

Project summary

Controlled burning to restore western taiga woodlands (Life2Taiga)

This project is focused on improving western taiga woodlands, in particular old pine forests, in Sweden and Finland using the most natural and efficient methods. The primary technique will be controlled burning and fire-mimicking measures carried out in 165 Natura 2000 sites across the two countries, home to 93% of western taiga in the EU. The project team will promote the use and acceptance of controlled burning as a safe and efficient nature restoration method, for example, by providing guidelines on best practices and demonstration facilities. At the same time, they will work with fire services in Sweden and Finland to advance knowledge on suppressing wildfires.

Project summary

Environment and Resource Efficiency

Towards the large-scale commercialisation of a residential water recirculation concept (LIFE ReUseWATER)

Clean teach start-up Orbital Systems' water recycling system uses water sensors and micro-filters to remove all types of impurities in the water supply. The project aims to demonstrate that the technology, which originates in a NASA mission to Mars, has commercial applications, enabling households to make water and energy savings. It will show that applying its Orbital Bathroom concept can cut the water consumption of showers by up to 90% and related heating energy by up to 80% while making it possible to recycle tap water for use in flushing toilets. The concept will be piloted by three customers before being widely marketed across Europe.

Project summary

Climate Change Mitigation

New energy-efficient solar cells to power smart building technology (LIFE SUNRISE)

The project team will scale up and demonstrate solar panel manufacturer Epishine's innovative organic photovoltaic (OPV) solutions in the IoT (Internet of Things) sensor context. Producing affordable, resource- and energy-efficient OPV cells in significant volumes to replace batteries can greatly reduce the carbon footprint of buildings. Epishine will demonstrate OPV technology in partnership with five European partners (Honeywell, Pollux, Ligna, Innovation Lab and Taganea) from Sweden, Spain, Germany and Switzerland.

Project summary

Austria

Nature and biodiversity

Saving Danube sturgeons from extinction (LIFE Boat 4 Sturgeon)

Sturgeons are amongst the most threatened animals worldwide. Previous conservation attempts have been unsuccessful or implemented over too short a timeframe to recover populations. To save Danube sturgeons from extinction, the four remaining species' genetic lineage must be conserved urgently through a captive-breeding programme, with genetically diverse young released to support wild populations. The project team will set up holding facilities for mature sturgeons in several countries, breeding these fish via genetic mating and using state-of-the-art methods for rearing juveniles. Communication work in seven countries will target Illegal, unreported and unregulated fishing, seeking to reduce this and sturgeon by-catch. Cooperation with other projects to restore habitat and re-establish an ecological corridor should also help conserve the remaining species of Danube sturgeon.

Project summary

Clean Energy Transition

Supporting municipalities in the clean energy transition (PLENTY LIFE)

Cities and urban areas account for about 70% of energy-related CO_2 emissions. By 2050, around 85% of Europe's population is expected to live in cities. They are, therefore, vital for achieving climate protection and energy transition targets. The project team will develop an innovative methodology which builds the capacity of small and medium-sized municipalities in integrated urban energy planning. This will help such municipalities prepare long-term sustainable energy strategies and plans tailored to their conditions, enabling them to manage the clean energy transition and achieve carbon neutrality by 2030 or 2050.

Project summary

Rebooting the Austrian BUILD UP Skills Platform (ReBUSk)

The project team will reboot the national BUILD UP Skills Platform in Austria to upskill the building sector workforce, covering the full range of education levels. All relevant stakeholders will be brought together to develop the training needed to enable the sector to reach energy efficiency and renewable energy targets by 2030 for both new and renovated buildings. The team will also develop a new national Roadmap under the relaunched Platform, taking into account the new realities of the building sector.

Project summary

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