

Annex*

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

**The list of projects is being updated as new grant agreements are signed; the list will be finalised by December 2021.*

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

Belgium

Nature and Biodiversity

Tackling invasive plants on the Flemish coast (LIFE DUNIAS)

Coastal dunes are home to many threatened species. On the Belgian coast, many dune areas are small, fragmented and vulnerable to invasive alien species (IAS). Previous efforts to combat these invaders were usually ad hoc and carried out separately. With the LIFE DUNIAS project, the Agency for Nature and Forests plans to fight IAS on the Belgian coast in a structured and concerted way. The aim is to eradicate invasive plants from all Flemish coastal dunes and prevent their return or the arrival of new ones. An improved early warning system and volunteer training should help boost detection rates. And sources of IAS should be reduced significantly thanks to increased awareness among the project's target groups. These include garden owners, landscape architects, plant nurseries, garden centres, and visitors to nature sites. A number of threatened species, in particular insects, are expected to benefit.

[Project summary](#)

Environment and Resource Efficiency

Validating an innovative treatment for contaminated soil (LIFE FRAC-IN)

The in-situ treatment of contaminated sites requires direct contact between the remediation agent and the contaminant and is therefore limited to highly permeable soils. The LIFE FRAC-IN project team have developed a technology that enables remedial agents to be injected into sites with a low permeability through direct-push drilling, and pneumatic and hydraulic fracturing. They aim at validating this technology under different geological conditions and with a range of contaminants at seven test sites. They will also support its full-scale application at further sites, demonstrating its potential to reduce CO₂ emissions.

[Project summary](#)

A sustainable alternative to BPA-based epoxy resin (LIFE VIABLE)

Used as a monomer for the manufacture of polycarbonate and epoxy resins, Bisphenol A (BPA) is one of the most widely produced chemicals globally – despite its risks to human health and the environment. The LIFE VIABLE project team aims to show the technical and economic feasibility of replacing BPA in the production of epoxy resin with glycidylated lignin oil. Demonstrating the technology in the manufacture

of two car components, the team will show that using lignin-based epoxy resin help reduce CO2 emissions while achieving the same results.

[Project summary](#)

Climate Change Adaptation

[Meeting cities climate challenges \(LIFE PACT\)](#)

The Belgian city of Leuven has adopted various strategies to help it cope with heavy rainfall and drought. The city's authorities have also looked at ways of expanding green spaces to increase their climate resilience. These strategies now need to be converted into real action on the ground. The LIFE PACT project will test an integrated approach to urban climate change adaptation that draws on the efforts of society. The aim is to more effectively implement solutions that are supported by nature, so-called nature-based solutions. The project team will test these solutions at two pilot sites in the city. And they will go on to replicate them in Madrid, Spain and Kraków, Poland. The team will also explore ways of involving citizens, local government, universities and other local stakeholders in their work.

[Project summary](#)

[Helping farmers cope with less water \(LIFE ACLIMA\)](#)

The agricultural and horticultural sectors are increasingly facing water shortages. At the same time, our need for this precious resource is growing due to higher temperatures and prolonged periods of drought during the summer. Proefstation voor de Groenteteelt (PSKW), the Belgian research centre leading the LIFE ACLIMA project, will use innovative technologies and tools to show how agricultural and horticultural companies can cope with declining water availability. Advice and guidance will be provided on climate-robust water management for both sectors in Antwerp Province and beyond. 130 farms are expected to participate in the project. It is hoped that the use of vulnerable water sources, such as mains tap water and deep groundwater will fall.

[Project summary](#)

Climate Governance and Information

[Engaging civil society in the EU ETS reform \(LIFE ETX\)](#)

The EU Emissions Trading System (EU ETS) is the cornerstone of the EU's policy to combat climate change. EU ETS puts a price on carbon and lowers the cap on emissions from various economic sectors and is currently being reformed under the European Commission's Fit for 55 package. To ensure this reform delivers a balanced, fair and effective outcome, a variety of stakeholders must be involved. The LIFE ETX project, led by the non-profit association Carbon Market Watch, will ensure this happens by maximising the voice of civil society in the transformation. The goal is to improve climate governance and optimise the trading system through scientific assessment, broader and more robust civil society participation, and international collaboration. This will help achieve the EU's 2030 climate target plan, as well as its 2050 climate neutrality and adaptation objectives. Thanks to the project, at least 30 civil society organisations and NGOs in 15 EU countries will become skilled in the EU ETS and carbon pricing.

[Project summary](#)

Bulgaria

Nature and Biodiversity

[Recovering the endangered Saker Falcon in Bulgaria and Romania \(LIFE for Falcons\)](#)

The Saker falcon is a globally endangered species. In Europe, its historical range has become severely reduced and broken up, including in the Bulgaria-Romania cross-border region. The LIFE for Falcons project will set out to recover the Saker falcon population in Bulgaria and southern Romania. The project team, coordinated by the Bulgarian Society for Protection of Birds, will provide safe dispersal areas, stopover sites, wintering grounds, and potential breeding territories. Project actions will also mitigate the underlying causes of illegal killing of falcons. Conflict with pigeon fanciers will be reduced by measures to reduce predation on racing pigeons. Capacity for bird crime prevention will be increased through the training of law enforcement officers in the investigation of illegal wildlife killing, nest robbery, and illegal pesticides and poison use. The electrocution of birds will be reduced by insulating at least 300 dangerous pylons.

[Project summary](#)

[Making overhead power lines safer for birds around Burgas Lakes \(LIFE Safe Grid for Burgas\)](#)

Burgas Lakes lie on the Via Pontica flyway, one of the most important bird migration routes in Europe. A major threat to birds around the lakes is the high mortality rate caused by electrocution on electricity poles, and by collision with overhead wires. LIFE Safe Grid for Burgas will protect breeding, wintering and migrating populations of bird species by reducing deaths from electricity infrastructure. The project team, coordinated by the power company EP Yug, will identify the riskiest medium-voltage power lines, and replace overhead electricity lines with underground cables in the most important sectors. They will also prevent bird mortality from electrocution by insulating hazardous electricity pylons and reduce deaths from collisions by installing bird flight diverters on power lines. The team expects to save between 15 000 and 150 000 birds per year.

[Project summary](#)

Environment and Resource Efficiency

[Pioneering effective water treatment for high use industries \(LIFE WATEROIL\)](#)

The oil refineries of Lukoil in the Balkans use a lot of freshwater sources. However, the use of wastewater is becoming more challenging as treatment requirements become stricter. The LIFE WATEROIL project team will demonstrate a sustainable water treatment approach of relevance to high water-demanding industries, such as the oil industry, which exploits alternative water sources and improves treatment technology. They will also establish the conditions for the recirculation of stripped water, demonstrating the viability of substituting freshwater with treated water.

[Project summary](#)

Denmark

Nature and Biodiversity

[Connecting nature through green infrastructure \(LIFE BioScape\)](#)

The intensification of agriculture and a lack of space for nature threaten ecosystems and the benefits they provide to people, known as ecosystem services. Almost two-thirds of Denmark is covered by arable land, while natural areas account for less than 10% and most of these are small scale. Through the LIFE BioScape project, the Central Denmark Region aims to connect nature and link up ecosystems by building green infrastructure. This will improve and expand conditions for threatened biodiversity and restore ecosystem services. Some key threats to ecosystem services will also be addressed: over-enrichment of the aquatic environment by nutrients; contamination of drinking water; and structural alteration of streams, which can cause hazardous flooding of populated areas. In all, more than 1.5 km of watercourses will be restored and almost 130 hectares of land – an area three times the size of Vatican City – purchased or the owners compensated for restrictions in land use.

[Project summary](#)

Germany

Environment and Resource Efficiency

[Recycling scrap material from carbon fibre reinforced polymers \(LIFE CFCycle\)](#)

The production of carbon fibre reinforced polymers (CFRP) generates a lot of scrap material, of which less than 15% is currently recycled. However, this material could be suitable for use by the aircraft and automotive sectors, as the LIFE CFCycle project team will demonstrate. The team has developed a low-temperature and low-pressure chemical recycling process known as chemolysis. They will evaluate this process for at least 10 different types of scrap material and show the viability of recycling up to 95% of fibre material and 90% of binder polymers from CFRP scrap.

[Project summary](#)

[The benefits from the smarter use of herbicides \(LIFE SMART SPRAYER\)](#)

As part of the European Green Deal, the EU is aiming to reduce the use of pesticides by 50% by 2030. The beneficiary has developed a technology, Smart Sprayer, that contributes to this goal by allowing the use of herbicides to be reduced by around 40% on average through selective spraying. The project team will build six full-scale prototypes to show that this technology is commercially viable. They expect to demonstrate that the reduced use of herbicides not only has significant cost savings for farmers but also improves biodiversity and crop yields.

[Project summary](#)

Climate Change Mitigation

[Using local wood resources for fewer transport emissions \(LIFE climate value chains\)](#)

While using more wood can contribute to climate protection, the market for wood products is becoming increasingly global. This means that wood needs to be transported long distances, undermining its positive impact. The LIFE climate value chains project, coordinated by non-profit organisation Holz von Hier gemeinnützige GmbH, will encourage local wood supply chains to show how the climate impact from transporting timber can be reduced. The team will promote their HvH (Holz von Hier) climate label along with a monitoring instrument of the same name.

[Project summary](#)

[Restoring peatlands in five EU countries \(LIFE MULTI PEAT\)](#)

Peatlands regulate climate by storing massive amounts of carbon. However, In Europe, more than half of all peatlands have been lost or converted, with only a few currently in good condition. Also, degraded peatlands are a major source of greenhouse gas (GHG) emissions. The LIFE MULTI PEAT team will aim to restore degraded peatlands in Belgium, Germany, Ireland, the Netherlands and Poland. As well as helping meet EU climate change mitigation goals by restoring the carbon sink function of peatlands, the project will raise groundwater levels and help conserve species and habitats protected under the EU Birds and Habitats Directives. Project coordinator, Naturschutzbund Deutschland (NABU), will develop replicable techniques for halting further significant emissions from degraded peatlands. They will also launch a peatland policy toolkit and a web portal containing relevant information for policymakers, climate change activists, nature experts, and the public. Overall, the project team aims to restore and improve 689 hectares of degraded peatlands, an area the size of around 1 300 football pitches.

[Project summary](#)

Climate Governance and Information

[Climate financing for Europe's SMEs \(LIFE CB-PASTAX\)](#)

Small and medium-sized enterprises (SMEs) are the backbone of the EU's economy, but their operations can have a negative climate impact. Also, climate considerations have rarely been integrated into SME financing decisions because of a lack of data and information on how SMEs can be affected by climate change and what actions they are taking to manage it. The LIFE CB-PASTAX project team will help implement the EU sustainable finance action plan and the Paris Agreement's commitment of aligning financial flows with climate goals. The project coordinator, the non-profit organisation 2° Investing Initiative Deutschland, will use the financial sector to drive the integration of climate issues within SMEs. It will help European banks to develop climate-related financial products, targeting the region's SMEs. Also, banks will be able to assess the position of an SME on climate via a bespoke database comprising some 100 000 companies.

[Project summary](#)

Estonia

Nature and Biodiversity

[Bringing life back to wooded meadows in Estonia and Latvia \(WOODMEADOWLIFE\)](#)

Fennoscandian wooded meadows – the most diverse habitat in the Boreal region – are highly endangered. Management of these areas for traditional agriculture meant they had an extraordinary richness of species. However, less than a third of wooded meadows are currently managed in Estonia and Latvia. With the WOODMEADOWLIFE project, Estonia’s Environmental Board plans to restore 700 hectares of overgrown meadows – an area the size of almost 1 000 football fields – in these two countries. The team will plan with landowners and managers on how to look after the restored sites longer term. Also, a help desk will provide advice and support to those willing to restore and manage their wooded meadows. Species including the three-toed woodpecker, the hermit beetle and the lady’s-slipper orchid are expected to benefit.

[Project summary](#)

Ireland

Nature and Biodiversity

[Restoring the alkaline lake and other habitats of Lough Carra \(LIFE Lough Carra\)](#)

Lough Carra is a highly alkaline lake – known as a marl lake – in the west of Ireland. Its catchment area has been under pressure since 1970, in particular from intensified agriculture, resulting in the loss of some grass and scrubland habitats. Mayo County Council is seeking to restore the marl lake to favourable condition through the LIFE Lough Carra project. The team will work with local authorities, farmers, anglers and others to restore the lake’s habitats, involving them in long-term decision making, land management, community awareness and engagement. Sources of pollution and biodiversity loss such as nutrients from farms and wastewater from septic tanks, are set to be tackled. Plus, a strategy for dealing with invasive species should prevent the introduction of zebra mussels and control numbers of mink and feral geese. Work is also expected to benefit orchid-rich grassland and alkaline fen habitats, as well as common gulls, otters and lesser horseshoe bats.

[Project summary](#)

[Protecting and restoring Ireland’s machair network \(LIFE on Machair\)](#)

There is a need to step up efforts to protect and restore the EU Habitats Directive priority habitat machairs in Ireland, as well as associated coastal habitats and the species they support. The LIFE on Machair project will improve the conservation condition of this habitat, along with the ecological conditions for breeding wading birds and pollinators. Through an integrated management approach, the project team, led by Ireland’s National Parks and Wildlife Service, will work with farmers and landowners to improve the structure and functions of machair and its associated habitats on an area of around 3 500 hectares (6 500 rugby pitches). Key to the project’s success will be the design and implementation of results-based agri-environment measures, the development of sustainable eco-

friendly tourism, and concrete conservation actions to reduce or eliminate acute threats to habitats or species.

[Project summary](#)

Greece

Environment and Resource Efficiency

[Non-chemical methods for controlling gypsy moth \(LIFE eGYMER\)](#)

The Gypsy moth is one of the most damaging forest pests in Europe. Various insecticides have been used for its control, but these can negatively affect biodiversity and are inappropriate for urban and recreational areas. The LIFE eGymer project team will demonstrate non-chemical pest control methods. Coordinated by the University of Thessaly in Greece, the team will develop and implement smart traps, mass adult and larval trapping, mating disruption using pheromones (that act like hormones), and other techniques. Unlike conventional pesticides, a combination of these methods can effectively control more than one life stage of the gypsy moth. The project team will use ICT tools to continuously monitor infestation levels remotely and provide early warnings of gypsy moth outbreaks. They will demonstrate the various methods on eight different sites across 320 hectares of protected forest and recreational space. This is the size of around 600 football pitches.

[Project summary](#)

Environmental governance and Information

[A first national biodiversity information system for Greece \(LIFE EL-BIOS\)](#)

There is a lot of biodiversity data in Greece, but it is mostly collected by different actors and can be unknown or inaccessible to the people who need it. The absence of a robust national biodiversity databank weakens the impact of this knowledge and can result in delays when management decisions and funding are needed. Through this project, Greece's Green Fund will design and develop a central biodiversity information system, 'EL BIOS', operated by the Natural Environment and Climate Change Agency. This will be the first national biodiversity information system in Greece. It will integrate existing datasets and compile up-to-date information on statuses and trends, threats and pressures, innovative techniques and more. Green Fund will also introduce several techniques for monitoring habitats and ecosystems in Greece, such as Earth observation, remote sensing and wireless sensors. This will help with the development or adaptation of future protocols for national biodiversity monitoring. As a result, Greece's capacity to conserve biodiversity effectively will be improved, leading to enhanced nature protection.

[Project summary](#)

Climate Change Adaptation

Protecting fruit crops from frost damage (LIFE FROSTDEFEND)

Crops are expected to become more vulnerable due to a greater frequency and magnitude of extreme weather events. In Greece, for example, frost is responsible for major fruit crop losses. The LIFE FROSTDEFEND project team, led by the National Centre for Scientific Research Demokritos, will develop an Internet of Things (IoT) system to monitor a wide range of indicators that predict damaging frost events. Key frost event indicators not previously used in forecasting will be identified, including those predicting the presence of ice-nucleating bacteria (ice crystals) on plants. These indicators will then be integrated into an easy-to-use forecasting and warning tool. The tool will enable monitoring in real-time using cost-effective sensors. It will provide farmers with reliable frost event warnings and guidelines on low-cost and sustainable actions to reduce sensitive crops being damaged.

[Project summary](#)

Making the health sector more climate resilient (RESYSTAL)

The European health sector faces many challenges from climate change. Examples include hospitals becoming vulnerable to floods, high storm winds, and drought. However, there is a lack of climate change adaptation measures in the health sector. The LIFE RESYSTAL project aims to change this by boosting the climate adaptation capacities and resilience of Europe's health infrastructure. The project team, coordinated by the National Centre for Scientific Research Demokritos, will set up a so-called European network for the climate adaptation of the European health sector. It will also provide science support for implementing climate change adaptation measures. The team will go on to demonstrate health sector infrastructure adaptation under diverse weather conditions and promote its widespread use.

[Project summary](#)

Climate Change Mitigation

Storing surplus renewable energy (LIFE CO2toCH4)

Surplus electricity from solar or wind plants at peak periods is currently lost if not consumed. The LIFE CO2toCH4 project will demonstrate a process for storing this energy as well as for capturing and using CO₂. The team will construct a smart mobile unit for hybrid energy storage, which can be installed in remote energy systems such as on islands that are not connected to a central energy grid. The storage process uses renewable energy in water electrolysis, with the hydrogen produced in the process biologically converted into methane as a non-fossil biofuel.

[Project summary](#)

Reducing the climate impact of livestock on our planet (MiCliFeed)

Livestock rearing causes significant greenhouse gas (GHG) emissions. These emissions include methane from gut fermentation as well as methane and nitrous oxide from manure. The MiCliFeed project team will show the scientific, environmental and economic feasibility of using agro-industrial waste streams to make feed pellets for livestock. Their aim is to mitigate the climate impact and reduce the environmental footprint of livestock farming. They also want to improve the efficiency with which animals convert feed intake into body weight gain so-called feed utilisation. And they aim to increase

animal productivity by protecting gut health. The project team, coordinated by the Veterinary Research Institute - Hellenic Agricultural Organisation DEMETER, will adopt a circular economy approach, using locally produced agro-industrial waste and by-products that contain bioactive compounds beneficial to gut health. Such waste and by-products from olive processing, nuts processing, wineries, carob, citrus, and tomatoes will be tested on livestock farms in Greece, Italy and France.

[Project summary](#)

Spain

Nature and Biodiversity

[Restoring Mediterranean alder forests at river basin level \(LIFE ALNUS TAEJO\)](#)

Mediterranean alder forests (alluvial forests) are a valuable habitat for stabilising riverbanks, enhancing nutrient balance in soils, improving water quality and reducing excessive plant and algal growth (eutrophication). The habitat also hosts many fish and mammals protected at EU level. However, this valuable habitat is seriously threatened in the Western Tajo river basin in Spain. The LIFE ALNUS TAEJO project team will protect and restore rivers and riverbanks dominated by residual alluvial forests (a priority habitat type of the EU Habitats Directive). The project team, led by Universidad Politécnica de Madrid, will restore alluvial forests on 432 hectares, along 216 km of river, and restore riverbanks and enable natural river regeneration to promote ecological connectivity. The project's actions will help recover soil on eroded river corridors, improve river flows by removing illegal barriers, and enhance water quality.

[Project summary](#)

[Enhancing a priority salt flat and wetland in Spain \(LIFE EL HITO\)](#)

Agri-environmental programmes compensate farmers for income loss from using agricultural production methods compatible with the conservation of biodiversity. However, in some cases, such as at the 'El Hito' Natura 2000 site, the area involved is too small to qualify for such payments. The LIFE EL HITO project will conserve priority wetland, coastal lagoon and salt flat habitats, and their associated species, through land stewardship agreements with farmers and landowners. The project team, led by Fundación Global Nature, will also purchase wetlands and salt flats for their long-term conservation, and farmland to convert it back into priority habitats using native plants raised in nurseries. They will remove inappropriate infrastructure and establish buffer zones to ensure water levels remain high and pollution does not reach the protected habitats.

[Project summary](#)

[Connecting the Iberian population of Dupont's lark \(LIFE CONNECT RICOTI\)](#)

The Spanish population of Dupont's lark is the only population of this bird in Europe. Its irregular and highly fragmented distribution, and its dependence on extensive grazing, make it one of Europe's most threatened birds. The LIFE CONNECT RICOTI project will improve the lark's conservation status by increasing the connectivity between several key sub-populations. The project team, coordinated by the Terrestrial Ecosystem Ecology and Conservation Research Group of the Autonomous University of

Madrid, will increase the amount of high-quality habitat for the species in three Spanish regions. They will also reinforce sub-populations at substantial risk of extinction by introducing wild birds from other areas. The team plans on improving around 600 hectares of habitat for the lark in key locations. They will also improve sheep grazing to maintain high-quality habitat on a further 747 hectares, an area the size of around 1 400 football pitches.

[Project summary](#)

[Enhancing ecological connectivity along tourist trails and waterways \(Steps for LIFE\)](#)

Walking, cycling and horse-riding trails and waterways can act as important ecological corridors to help species move around. However, this ecological dimension is often overlooked when planning or managing these routes. Fundación Camino Lebaniego conserves and promotes important routes within Cantabria (Spain), particularly the Camino Lebaniego (Lebaniego Way) and the Camino de Santiago (Way of St. James). The project team will transform such cultural and tourism infrastructure into multifunctional green infrastructure. They will improve biodiversity, enhance ecological connectivity, and raise awareness among tourists. Also, they aim to create 300 stepping stones in forests and aquatic environments, and to restore alluvial forest habitat.

[Project summary](#)

[Restoring aquatic ecosystems in the Alps and Pyrenees \(LIFE RESQUE ALPYR\)](#)

In the Alps and Pyrenees, aquatic habitats, such as lakes, bogs, mires and grasslands, have a declining conservation status. The main reasons for this include the spread of invasive fish species, overgrazing by livestock, and land abandonment. LIFE RESQUE ALPYR will provide replicable solutions to urgent ecological threats impacting mountain lakes and aquatic habitats. The project team, coordinated by the Spanish National Research Council (CSIC), will eradicate alien fish species, manage livestock to prevent overgrazing, and control inappropriate afforestation. They will also improve the conservation status of 11 habitats listed in the EU Habitats Directive, in four Natura 2000 sites located in the Spanish Pyrenees and the Italian Alps. Project actions will improve conditions for many species like the Pyrenean brook salamander.

[Project summary](#)

[Managing nature-rich habitats on Atlantic islands \(LIFE INSULAR\)](#)

Atlantic islands are among Europe's most biodiverse areas, but their natural habitats are seriously threatened by tree encroachment, the spread of invasive alien species, the impact of recreational and tourism activities, and climate change. The LIFE INSULAR project team, coordinated by the University of Santiago de Compostela, will implement a transnational strategy for the integrated restoration of dune and heath habitats on five Atlantic Ocean islands. The project team, involving partners from Spain, France, Portugal and Ireland, aim to improve the conservation status of habitats and make them more resilient to the impacts of climate change. They will eliminate old forest plantations and encroaching trees, control invasive alien species, restore cleared areas with plant species characteristic of the habitat types, and implement measures to reduce damage caused by human activities.

[Project summary](#)

[Restoring relict yew woods \(LIFE Teixeres\)](#)

Yew woods are in severe decline all over their distribution range. In the Spanish autonomous community of Valencia, these woods are found high in the Mediterranean mountains. The LIFE Teixeres project will improve the conservation status of this wood habitat, and its resilience to the threats of habitat fragmentation, low seed productivity, climate change and wildfires. The project team, led by the Ministry of Agriculture, Rural Development, Climate Emergency and Ecological Transition of the Council of the Generalitat Valencia, will restore degraded habitat and ecosystems, reverse the decline of pollinators, and plant diverse and biodiversity-rich tree species in 10 Natura 2000 sites. Around 28 000 plants of 37 varied species will be transplanted to restore the yew woods. Dense areas of pioneer trees on abandoned land will also be managed to reduce the threat of forest fires.

[Project summary](#)

[A new conservation strategy for steppe birds in Navarre \(LIFE FARMINGBARDENAS\)](#)

Agri-environmental schemes could help conserve birds on farmland, but they apply to intensive, not extensive farming. There is a need to create long-term collaboration strategies between farmers, conservation organisations and administrations to achieve goals not possible under current agri-environmental measures. LIFE FARMINGBARDENAS will establish such a land stewardship network to halt the population declines of steppe bird species in the Bardenas Reales National Park and Natura 2000 site, in Navarre, Spain. Coordinated by the Community of Bardenas Reales, the project team will implement strategies that ensure the sustainability and competitiveness of farms, alongside the conservation of biodiversity. Measures will include optimising the use of agrochemicals, increasing grazing, and removing threats to birds.

[Project summary](#)

[Tackling invasive plants on the cliffs of Costa Brava \(medCLIFFS\)](#)

The Costa Brava is home to numerous plant species only found in this area and which provide important benefits to people, known as ecosystem services. However, it is also greatly impacted by invasive plants; coastal sea cliffs with native sea lavenders are one of the most affected habitats. Controlling the invaders is difficult, in part because of limited resources dedicated to prevention or early warning. The medCLIFFS project team plan to turn this around with a strategy for managing invasive alien plant species (IAPS). The aim is to prevent their introduction in the first place through awareness raising and to improve the rapid response to IAPS. The public and local experts will be encouraged and trained to help with early detection and rapid eradication, for instance, by monitoring selected coastal areas with high risk of invasion. In addition, invasive plants including some hottentot fig and prickly pear species will be eradicated on almost 50 hectares – an area the size of about 70 football fields.

[Project summary](#)

[Restoring degraded marine ecosystems \(LIFE ECOREST\)](#)

The high biodiversity of the Mediterranean seafloor has been dramatically reduced by human activities, especially trawling. The LIFE ECOREST project, coordinated by the Spanish Institute of Marine Sciences, will help to restore the natural condition of seafloor habitats off the Catalan coast impacted by fishing activities. Specifically, the project team will restore existing no-take zones in the continental shelf and slope by recovering and transplanting so-called ecosystem engineer species like sponges and mussels

accidentally caught by fishers as by-catch. This action should return 75 000 individual organisms into the sea. Restoration strategies, which also include actions to promote reef formation, will be implemented through close collaborations between scientists, fishers and public administrations. The approach will be transferred to other areas

Project summary

Boosting biodiversity in the EU's olive groves (LIFE Olivares Vivos +)

Olive groves in the EU cover more than 5.3 million hectares, an area bigger than Belgium. One of the main crops in Spain, Italy, Greece and Portugal, olive groves are important for halting biodiversity loss and preserving stocks of natural resources – known as natural capital. An earlier LIFE project showed how biodiversity can be improved in olive groves while also halting soil loss and reducing pesticide use, thereby lowering production costs. SEO/BirdLife aims to expand the use of its model through a brand-new project, LIFE Olivares Vivos +. The team aims to receive at least 500 applications from farmers interested in applying the model and becoming 'Olivares Vivos' certified. At least 10 000 hectares of olive groves harvested to produce olive oil - an area about 15 times the size of Gibraltar - are expected to receive certification, showing they help conserve biodiversity. Several farms will also be certified for table olive production. Thanks to the project, flora and fauna are expected to increase by 10% in just three years in newly certified farms, and pesticide use should fall by at least half.

Project summary

Environment and Resource Efficiency

Treating hazardous inkjet waste for its re-use (LIFE REPLAY)

The presence of heavy metals and solvents in ceramic inkjet inks poses a significant environmental and health threat. The LIFE REPLAY project team aims to address this problem by demonstrating the technical and economic feasibility of re-using ceramic inkjet ink waste as a new raw material for the ceramic industry. Its methodology separates this waste into a heavy metal inorganic pigment and an organic solvent. Both components that can then be reintroduced into the production process of pigments, ceramic inkjet inks, cleaners and ceramic tiles.

Project summary

Tackling the risk of process-generated nanoparticles exposure at work (LIFE NANOHEALTH)

Exposure to process-generated nanoparticles (PGNP) represents a health risk for industrial workers, but assessments of this risk in the workplace is challenging due to a lack of data and tools. The LIFE NANOHEALTH project team will address this problem by defining the degree of risk posed by certain levels of concentration of PGNP and by developing models for simulating the dispersion of PGNP indoors. The team will also draw up measures for minimising PGNP at industrial sites and assess their effectiveness, leading to the production of guidelines for preparing management plans.

Project summary

Water renaturalisation during managed aquifer recharge (LIFE REMAR)

Water scarcity is a growing problem in Mediterranean countries, leading to aquifer overexploitation and seawater intrusion in coastal areas aggravated by climate change. Reclamation and reuse of wastewater

to recharge aquifers is becoming necessary to deal with water scarcity in the Baix Camp region in Catalonia (Spain). LIFE REMAR will demonstrate, for the first time in this region, the viability of recharging an aquifer with treated water using managed aquifer recharge (MAR) technology. The project team, led by the company COMAIGUA, will improve the quality of a Wastewater Treatment Plant (WWTP) effluent to safely recharge a natural coastal aquifer. This will involve using two infiltration basins located next to the WWTP's secondary effluent outlet, with a reactive barrier installed at the bottom of each basin to remove contaminants. The aim is to remove contaminants of emerging concern, pathogens and microplastics, and reduce antibiotic resistance genes, from the treated wastewater. The system will be optimised for replication at other WWTPs.

[Project summary](#)

[Flood risk management on the river Ebro \(LIFE EBRO RESILIENCE P1\)](#)

River floods are among the most damaging extreme climate events in Europe, and they are happening more often. In Spain, on the middle course of the river Ebro, there have been frequent episodes of flooding, causing damage to agriculture, infrastructure, and to the 62 towns in the surrounding area. The LIFE EBRO RESILIENCE P1 project will modify the river Ebro to make it more resilient to floods. The project team will do this through demonstration and pilot-scale actions, led by the Spanish state company Tragsatec, who specialise in innovative engineering technology. They will optimise riverbank protection by removing or moving levees, recovering riparian habitats, such as river forests to the benefit of protected species. They also plan on removing alien invasive species and reconnecting meanders and branches of the river. The work will be done with the active involvement of local communities. The project is expected to improve nature-based water management on around 800 hectares, an area equivalent to around 1 500 football fields.

[Project summary](#)

[Reducing underwater noise in the Port of Cartagena \(LIFE PortSounds\)](#)

Human activities have increased the amount of artificial sound in the marine environment, which interferes with its natural acoustic condition. This underwater noise is harmful to many species, especially cetaceans that communicate and hunt using sound. The main objective of the LIFE PortSounds project is to reduce the impact of underwater noise on the marine environment in and around the Port of Cartagena. The project leader, Port Authority of Cartagena, will coordinate actions to identify and characterise underwater noise sources, map and assess the influence of marine traffic, and monitor the abundance, distribution and physiological state of three cetacean species: the bottlenose dolphin, striped dolphin and long-finned pilot whale. The team will also develop and implement noise mitigation measures, as well as a noise management tool to support decision-making. The approach will be replicated by other port authorities.

[Project summary](#)

[Recovery of soils using fungi mycoremediation \(LIFE MySOIL\)](#)

Technologies to address the problem of organic contaminants in soils currently consist of landfilling, physical and chemical treatments such as heat, and conventional bioremediation (biological processes to degrade, breakdown, transform, and/or remove contaminants). Mycoremediation, inoculating soils with specific fungi, could increase contaminant removal efficiency, but has until now only been demonstrated in the laboratory. The LIFE MySOIL project led by EURECAT, the Technology Centre of

Catalonia, will develop a mycoremediation technology to achieve removal percentages equivalent to thermal treatment, but with reduced energy requirements and lower greenhouse gas (GHG) emissions, and at a lower cost. The project team will also turn agricultural waste (spent mushroom substrate) into a bulking agent for use in the process. They aim to remove some 90% of petroleum-derived organic pollutants (TPHs) from contaminated soils at former industrial sites, to below legal limits for soil reuse. This will be done on-site, using a method in which the added fungi stimulate bacterial activity to boost the breakdown of organic pollutants. The toxicity of heavily contaminated soils will be reduced enough for biological functions to return.

[Project summary](#)

[Recycled brine and metal waste to treat wastewater \(LIFE Waste2Coag\)](#)

Water treatment generates large quantities of brine and metal waste that can negatively impact human health and the environment. The LIFE Waste2Coag project team will demonstrate a viable and cost-effective solution for brine and metal waste valorisation, by producing a sustainable coagulant as an alternative to commercial ones made from virgin raw materials. The project team, coordinated by Global Omnium Medioambiente, will design, construct and operate an electrolytic pilot system to produce the coagulants from recovered brines and metal scraps. This system will be powered by renewable energy. Formulations of iron and aluminium-based coagulants with neutral pH will be produced and their effectiveness in the removal of pollutants from wastewater demonstrated. The replacement of commercial coagulants will cut water treatment costs and CO₂ emissions by reducing the production and transport of raw materials and commercial coagulants.

[Project summary](#)

[Transforming silica waste into useful products \(LIFE ZEROSILIBRINE\)](#)

Precipitated silica has many industrial uses such as in anti-corrosion pigments. Its production process generates a high conductivity salt stream as a by-product. This comprises sodium sulphate which must be removed by washing, generating wastewater. Spills from the precipitated silica industry can increase the salinisation of rivers and harm wildlife. LIFE ZEROSILIBRINE will demonstrate the application of an innovative technology for the treatment of precipitated silica waste. Industrias Químicas del Ebro and the other project partners will recover 100% of the wastewater and reuse it in the production process itself, while recovering sodium sulphate as a high-purity product with commercial value. The technology will be validated, optimised, and promoted for transfer to other chemical processes and/or industrial sectors.

[Project summary](#)

[Forest management to protect water abstraction points \(LIFE URBASO\)](#)

The use of chlorine as a disinfectant in drinking water can create carcinogenic substances known as trihalomethanes. This happens when the chlorine comes in contact with untreated water. The LIFE URBASO project team plans to show that careful planning and forest management of the upslope areas of drinking water abstraction points can lead to lower levels of these substances, along with sediment load. It will develop its approach in the Urdaibai Biosphere Reserve where 39 abstraction points are in forested areas, of which 13 are in pine and eucalypt plantations.

[Project summary](#)

[Demonstrating water reclamation and aquifer recharge innovation \(LIFE MATRIX\)](#)

A third of the EU's territory is experiencing water stress as droughts become more frequent. The LIFE MATRIX project will demonstrate a solution for increasing the availability of groundwater resources in areas of water scarcity, while boosting the social acceptance of reclaimed water use. Through the application of a managed aquifer recharge technology at a demonstration site, the team will show that the amount of reclaimed water can be increased by around 10% and the aquifer recharge by around 15%. Other environmental benefits relate to the energy and greenhouse gas (GHG) emission saving compared to desalination.

[Project summary](#)

[A sustainable vertical farming approach \(LIFE FARMITANK\)](#)

Horticulture is responsible for more than a third of all freshwater consumption, with the volume set to increase as the global demand for food grows. The LIFE FARMITANK project offers an alternative, disruptive vertical farming business model that will increase crop yields by 26% by implementing a double transplant system. Energy consumption will fall by 17% thanks to the technology applied and the use of LED light reflectors. The model will lead to a 160% increase in land use efficiency and reduce labour and investment costs.

[Project summary](#)

[Cutting ammonia emissions from livestock farms \(LIFE Green Ammonia\)](#)

The agricultural sector is responsible for over 90% of total EU ammonia emissions. Livestock farming accounts for over 60% of these emissions, which come from livestock buildings, manure storage and applying fertiliser. Ammonia causes air pollution as well as the acidification and eutrophication of soil and water. A previous LIFE project, also coordinated by Fundación General de la Universidad de Valladolid, developed a gas-permeable membrane (GPM) technology aimed at reducing ammonia emissions. The LIFE Green Ammonia project will demonstrate this technology at commercial scale on pig and poultry farms in Spain and Portugal. The project team will test two commercial models for ammonia recovery, from the air and manure in animal houses and from liquid manure. They aim to reduce emissions from pig and poultry farms, while showing its economic profitability due to the generation of two types of based fertilisers: a concentrated salt of ammonium sulphate and a liquid for fertigation.

[Project summary](#)

[A cost-effective water treatment process \(LIFE SOuRCE\)](#)

Per- and polyfluoroalkyl substances (PFAS) are a group of more than 5 000 anthropogenic chemicals (pollutants caused by humans) that are bad for health and the environment. The LIFE SOuRCE project will demonstrate an innovative and versatile remediation solution for removing these substances from groundwater on a range of contaminated sites. The solution, which combines a range of on-site technologies will be demonstrated at a landfill site in Sweden and an industrial site in Spain. Their method is affordable, costing less than €0.10 per m³ of groundwater treated.

[Project summary](#)

[Environmental governance and information](#)

[Protecting the European rabbit in Iberia \(LIFE Iberconejo\)](#)

The European rabbit is an important species of Mediterranean forests and the main prey of the Iberian lynx and the Spanish imperial eagle. The rabbit models the landscape, increases soil fertility and creates habitat for other species. Iberian rabbit populations have however declined by 90% over the past 70 years due to changes in land use and diseases. The species is now classed as vulnerable in Spain and near threatened in Portugal. A lack of governance means there are no standard protocols or monitoring methodologies, so comparable data are not available on which to base wide-range conservation goals. WWF Spain plans to remedy this with the LIFE Iberconejo project. The team will set up an organisation to coordinate the monitoring and management of the European rabbit in the Iberian Peninsula. Data collection will also be improved, and WWF Spain aims to boost the European rabbit's numbers through monitoring and management measures.

[Project summary](#)

[Climate Change Adaptation](#)

[Making forests more resilient to climate change \(LIFE RedBosques_Clima\)](#)

Forests are one of the most important ecosystems in Europe, but they are also extremely sensitive to climate change. The university foundation FUNGOBE aims to increase the climate change resilience of forests through the LIFE RedBosques Clima project. Pilot actions will be implemented in several types of Mediterranean forest, covering an area the size of 20 football fields. These habitats will be restored on an area almost as big as Monaco, while good adaptation practices in forest management will be promoted. Other planned project outputs include an online tool for assessing the vulnerability of forests to climate change and a quality standard for forest adaptation actions.

[Project summary](#)

[Protecting urban coastal areas from flooding \(LIFE Garachico\)](#)

Coastal urban areas are especially vulnerable to climate change impacts like rising sea levels and extreme weather events. At the project pilot site, Garachico in the Canary Islands, extreme coastal flooding causes around €800 000 worth of damage every year, with climate change expected to lead to more frequent and severe incidents. The LIFE Garachico project proposes to reduce the flood risk in urban coastal areas by implementing an innovative so-called Flexible Adaptation Strategy Framework. The team will engage the public, managers and other stakeholders by providing them with the tools for determining acceptable risk levels and supporting them in implementing adaptation measures.

[Project summary](#)

[Agroforestry for climate change adaptation in the Mediterranean \(LIFE AgroForAdapt\)](#)

It is essential to increase the resilience of vulnerable Mediterranean ecosystems to the impacts of climate change. The LIFE AgroForAdapt project will promote agroforestry systems for climate change adaptation of the agrarian and forestry sectors in the Mediterranean. The Forest Sciences and Technology Centre of Catalonia and the other project beneficiaries will focus on two types of agroforestry systems: silvoarable (combining arable crops and trees) and silvopastoral (combining forestry, forage plants and livestock). They will set up 23 demonstration silvoarable systems and 11 demonstration low-density silvopastoral systems, assess their performance for a wide range of

adaptation indicators, and prepare for their replication in other areas. These systems are expected to improve resilience to drought and forest fires, while enhancing multiple ecosystem services such as biodiversity protection and carbon capture. They will also provide socio-economic benefits, such as income diversification, increased farm profitability and enhanced landscape/sociocultural values, through the production of new products for emerging markets.

Project summary

[Eliminating untreated wastewater discharges \(LIFE RESEAU\)](#)

Stormwater overflows, which can lead to the discharge of untreated wastewater, are increasingly common due to more heavy rainfall associated with climate change. The LIFE RESEAU project aims to eliminate such discharges by developing an innovative solution for retrofitting and upgrading conventional activated sludge wastewater treatment plants (WWTPs) and combined sewer networks. The solution, which will be tested in Spain and Denmark, aims to increase the resilience of urban wastewater systems. The project team also plans to develop a smart system for monitoring and controlling the combined sewer networks.

Project summary

[Improving the resilience of landfill sites to climate change \(GREEN ADAPT\)](#)

The long lifespans of landfill sites make them particularly vulnerable to climate change. The GREEN ADAPT project will implement adaptation measures using blue and green infrastructure to improve their resilience. For example, the team will use landfill waste to stabilise soil and prevent landslides, and it will treat wetlands to avoid the run-off of contaminated water from the sites. It will also re-use treated wastewater to mitigate the effects of hot temperatures from fires or explosions.

Project summary

[Helping Aleppo pine forests adapt to climate change \(LIFE ADAPT-ALEPPO\)](#)

Climate change is expected to have a major impact on Mediterranean forests. This will see an increase in extreme events such as droughts and forest fires, as well as problems with pests and diseases. The environmental consultancy firm IDeN plans to develop new tools and techniques for adapting Iberian Aleppo pine forests to climate change and demonstrate them on plots covering almost 110 hectares – an area around the size of 150 football fields. Results from LIFE ADAPT-ALEPPO project will be shared with other areas that have Aleppo pine forests – in the Balearics, France and Italy – in a bid to improve the management and long-term conservation of this habitat in southern Europe.

Project summary

Climate Change Mitigation

[Recovering poplar groves for bioproducts, biodiversity and carbon capture \(LIFE Wood For Future\)](#)

The poplar groves of La Vega de Granada (Andalucía, Spain) are a sign of cultural identity and history. However, the construction sector has turned its back on this resource, and the groves are being lost. Poplar provides multiple environmental benefits, including a high carbon storage capacity. The LIFE Wood For Future project will recover poplar plantations and halt their replacement with intensively

grown crops. The project team, coordinated by the University of Granada, will achieve this by guaranteeing the sustainable supply of high-quality local wood to industry for the production of new structural bioproducts. This will boost long-term carbon storage and improve biodiversity as well as water, air and soil quality. The team will construct an industrial demonstration building from the poplar wood, which will have a much-reduced carbon footprint, serving as an example of sustainable construction.

[Project summary](#)

[Using renewable hydrogen as fuel \(LIFE CABEZO GREENH2\)](#)

The treatment of meat residuals, which commonly uses natural gas as fuel, is a significant source of CO₂ emissions. The LIFE CABEZO GREENH2 project aims to show the viability of using renewable hydrogen instead. The team will install a hydrogen production plant, which will be powered by wind energy, in a major industrial area in Spain. Using the plant's green energy will thus help local businesses lower their carbon footprints. The plant will also produce a useful by-product, oxygen, for use by local metal companies.

[Project summary](#)

[Energy savings through waste heat recovery from iron and steelmaking \(LIFE HI4S\)](#)

The LIFE HI4S focuses on waste heat recovery in iron and steel manufacturing. It will develop an innovative, cost-effective combined heat and electricity production plant from the waste heat contained in the gasses given off by an electric arc furnace. The use of the thermal energy storage system based on the steel slag generated in the steelworks is expected to save around 37.5 GWhe /year. As well as the associated cost savings, the process will also deliver significant CO₂ emissions and slag waste savings.

[Project summary](#)

[Re-using HFCs in the refrigeration and AC sector \(LIFE-4-Fgases\)](#)

The LIFE-4-Fgases aims to improve the sustainability of the refrigeration and air conditioning sector by demonstrating the feasibility of separating value-added hydrofluorocarbons (HFC) from high global warming potential refrigerant mixtures contained in end-of-life refrigeration equipment. The separated substances will then be re-used in less harmful refrigerant mixtures. The project will construct a system for selectively recycling HFC blends that can be applied to an industrial waste management facility. The system will deliver cost savings and cut emissions.

[Project summary](#)

[Towards climate-neutral farming in the Mediterranean \(LIFE CLINMED-FARM\)](#)

Between 2007 and 2016, manure management accounted for about 17% of the agriculture sector's greenhouse gas (GHG) emissions in the EU. High-density livestock production in the Mediterranean also results in a large nitrogen surplus on fertilised arable land as well as ammonia emissions. The LIFE CLINMED-FARM project will demonstrate approaches to slurry manure management for climate change mitigation in Mediterranean agricultural systems at farm-scale. The project team, coordinated by the Centro de Investigación y Tecnología Agroalimentaria de Aragón (CITA), aims to reduce GHG and ammonia emissions by 70% and 60% respectively, using a comprehensive slurry management strategy in two pilot studies: on a pig farm in Spain, and on a dairy farm in Italy that produces biogas from animal manure. They also aim at replicating the approach in three neighbouring regions.

[Project summary](#)

[Oak forest management as a climate change mitigation tool \(LIFE +REB\)](#)

Pyrenean oak forests cover more than one million hectares in Spain, with around 70% of this area located in the Castilla y León region. These forests are degraded as a lack of commercial interest has resulted in their abandonment. The LIFE +REB project will take a Climate-Smart Forestry (CSF) management approach to help these forests mitigate climate change, while ensuring their adaptation and greater resilience through the conservation and improvement of biodiversity. The project team, coordinated by Fundación Centro de Servicios y Promoción Forestal y de su Industria de Castilla y León (CESEFOR), will evaluate the CSF model in a set of 20 forests stands of five hectares each. Currently, these forest stands are only utilised for firewood. As a result of the project, 8% of this wood will instead be turned into products that are expected to be useful for 25 to 75 years. Therefore, the proposed replication of this CSF approach will increase the potential for carbon storage.

[Project summary](#)

France

Nature and Biodiversity

[Preventing the Crau plain grasshopper's extinction \(LIFE SOS Crau Grasshopper\)](#)

The Coussoul in southern France is a unique dry grassland of the Crau plain, renowned for its biodiversity and home to the critically endangered Crau plain grasshopper. Ambitious conservation efforts are proposed in this LIFE project, led by the non-profit organisation CEN PACA, to prevent the species' extinction in the wild. The plan is to reinforce and reconnect the remaining populations via captive breeding and a reintroduction programme. Habitat quality will also be improved through changes in sheep grazing. And measures will be taken to reduce predation by some bird species. These measures include installing mobile fencing during periods when the grasshopper is active.

[Project summary](#)

[Conserving the bearded vulture in Corsica \(LIFE GYPRESCUE\)](#)

The population of bearded vulture in Corsica has severely declined since 2009. This is down to a lack of food and disturbance from humans. Also, the isolation of the Corsican population may result in too little genetic diversity for long-term population viability. LIFE GYPRESCUE aims to prevent the population in Corsica becoming extinct, by reviving natural reproduction, increasing the island's nesting capacity for the species, and preventing human-related disturbance and mortality. Led by the Corsican Regional Park authority, the project team will translocate individuals from other areas to increase population size and genetic diversity. They will improve food availability, by boosting the wild sheep population and creating new artificial feeding sites. And they will reduce mortality due to poisoning, by encouraging hunters to switch to lead-free ammunition, and equip dangerous power lines with anti-collision beacons.

[Project summary](#)

Environment and Resource Efficiency

[Reducing ammonia emissions from farms in Brittany \(LIFE ABAA 2021\)](#)

Ammonia is a major precursor of fine particulate matter (PM), an air pollutant, with the main source being livestock manure spreading and fertiliser application. Although information and training are provided in France on Best Available Techniques (BAT) to reduce ammonia emissions on farms, their use is limited. The LIFE ABAA 2021 project will address the urgent need to promote and facilitate the use of the BAT to reduce such emissions. The team will develop demonstration system in Brittany. This will be based on a programme to integrate all existing tools and knowledge, and a network of at least 30 farmers committed to ammonia emission reduction. The project team, led by Air Breizh, will produce a Decision Support System to reduce ammonia emissions in Brittany by 15% in the five years after the project, with a corresponding decrease in PM air pollution.

[Project summary](#)

[Real-time control of pollution in urban drainage and sanitation systems \(LIFE RUBIES\)](#)

During heavy rainfall, the capacity of urban drainage systems may be exceeded, and the efficiency of wastewater treatment plants reduced. This results in the discharge of partially treated or untreated wastewater into rivers, degrading aquatic ecosystems. The LIFE RUBIES project team will develop decision-making tools to limit pollution in rivers and downstream bodies of water due to stormwater overflows. Project partners will test innovative methodologies developed under a previous LIFE project (LIFE EFFIDRAIN). These will be upscaled and demonstrated in two full-scale pilots in Lille (France) and Madrid (Spain). The project team will integrate the methodologies into an existing platform used to monitor the sewer system in real time. This is expected to decrease, by around 15% (Lille) and 50% (Madrid), the volume of sewer overflow discharged into rivers and lakes during heavy rainfall events.

[Project summary](#)

[Water reuse in the food and beverage industry \(LIFE ZEUS ZLD WATER REUSE\)](#)

The food and beverage industry requires a huge amount of water, amounting to 1.8% of total EU water consumption. The LIFE ZEUS ZLD WATER REUSE project will demonstrate the environmental, technical and economic benefits of an innovative water recycling solution. The technology will generate three different streams from the wastewater generated in the factory of project partner MONIN (a syrup manufacturer) in Bourges, France. These added-value co-products will be purified water to be reused in factory processes; sodium chloride to be reused in the factory's water softening system; and organic nutrients to be used externally for biogas production. CHEMDOC, an SME specialised in water purification, and the other partners aim to recycle 90% of the industrial wastewater, reducing the water needs of the factory. The biogas produced during the demonstration from organic waste is expected to reduce greenhouse gas (GHG) emissions by some 1 400 tonnes/year. Within five years, the technology is expected to be transferred to over 180 other food and beverage factories, creating many jobs.

[Project summary](#)

[Mobile units to produce recycled water \(LiFE ReWa\)](#)

Water shortage is a growing issue across Europe, especially in Mediterranean regions. However, treated wastewater could be used for a range of applications, as the LiFE ReWa project will demonstrate. The team will construct a mobile unit for recycling wastewater from treatment plants. The recycled water could be used for cleaning rainwater and wastewater networks; street cleaning; irrigation in urban green spaces; and firefighting. It could also be used in the maintenance of wastewater treatment plants.

[Project summary](#)

[Re-using wastewater in laundry facilities \(LIFE RECYCLO\)](#)

Laundries pose a double environmental challenge: they consume large quantities of water and they produce harmful wastewater. At three laundries in France, Spain and Luxembourg, the LIFE RECYCLO project team will develop prototypes to demonstrate an innovative wastewater recycling solution. They estimate that their method will allow at least half of the wastewater to be re-used, while removing around 90% of the emerging micro-pollutants. They also plan to expand its application to 43 sites by 2027.

[Project summary](#)

[UV radiation as a fungicide for winegrowers \(LIFEisLIGHT\)](#)

Wine producers rely heavily on harmful synthetic pesticides to stay competitive. However, the LIFEisLIGHT project team aims to show that vines can be protected against fungi in a less environmentally damaging way. They will do this by increasing their resistance to infection through UV-C flashes, the highest energy ultraviolet radiation. The team will demonstrate this innovative technology on 15 commercial sites in Spain, France and Italy to help spread knowhow among winegrowers. They say that combining this UV-C treatment with synthetic pesticides could cut the use of pesticides by half.

[Project summary](#)

[Making the business and environmental case for recycling PET waste \(LIFE CYCLE OF PET\)](#)

The level of recycling of polyethylene terephthalate waste remains low in the EU, with around a half of such waste incinerated and a quarter sent to landfill. The project team aims to demonstrate the economic viability of enzymatic recycling of PET waste, leading to the technology being applied in a newly constructed production plant by end of the project. Recycling this waste will reduce greenhouse gas (GHG) emissions associated with incineration, as well as the consumption of energy and resources. Eight PET recycling plants are expected to be completed worldwide by 2030.

[Project summary](#)

[Environmental governance and information](#)

[Safeguarding seabirds from marine litter \(LIFE SeaBiL\)](#)

Plastic waste kills one million seabirds every year. According to estimates, more than 99% of seabirds will be affected by this type of pollution by 2050. French NGO the League for the Protection of Birds is aiming to reduce the impact of marine litter on seabirds through the LIFE SeaBiL project, involving five pilot sites in France, Portugal and Spain. The plan is to improve the coordination of beach clean-ups and the identification of marine litter sources, to help manage and prevent waste. The project team also

intends to raise awareness on the issue among the general public. And a new transnational network, along with several local and national networks, will help monitor stranded birds.

[Project summary](#)

[More circular construction and public works in Toulouse Métropole \(WASTE2BUILD\)](#)

Construction and demolition waste accounts for a third of the total waste generated in the EU. Most is sent to dumps or landfill, resulting in pollution and a loss of reusable resources. In Toulouse Métropole, the local authority plans to tackle this through the LIFE WASTE2BUILD project. The team plans to prevent waste from construction and public works and to make these sectors more circular. They will set up an innovative system to optimise resources and recover waste from local construction and public works. As a result, the bulk of construction waste across the metropolis will be recycled, a total of 2.3 million tonnes – almost 250 times the weight of the Eiffel Tower. Practices in the building sector should also change thanks to new tools and processes. A house built entirely from reused materials will showcase the project's results.

[Project summary](#)

Climate Change Mitigation

[Low-carbon initiatives to reduce agricultural emissions \(LIFE CARBON FARMING\)](#)

Agriculture is responsible for around 10% of the EU's greenhouse gas emissions. The LIFE CARBON FARMING project aims to reduce the sector's carbon footprint by 15% within six years through various low-carbon initiatives. The project team will work with the agriculture and other sectors, public bodies, private companies as well as banks, to implement carbon finance mechanisms that put a monetary value on emissions in Belgium, Germany, Ireland, Spain, France and Italy. Actions include developing assessment and carbon reporting criteria, training farmers, promoting a voluntary carbon market and networking opportunities for sharing best practice.

[Project summary](#)

[Replacing fluorinated gas with green gas technology in high voltage applications \(LIFE SF6-FREE HV BREAKER\)](#)

Although an excellent insulator for high voltage (HV) applications, sulphur hexafluoride (SF6) is a highly potent and persistent greenhouse gas (GHG). There is an urgent need for replacing SF6 in electrical switchgears, which are used to control, protect and isolate electrical equipment. The LIFE SF6-FREE HV BREAKER project will combine a climate-friendly green gas for grid (g3) alternative for SF6 that has an improved design for outdoor high voltage live tank circuit breakers (HVLTCB). The project team, led by Grid Solutions, will focus on Air Insulated Switchgear (AIS) because it has a large market and, therefore, a high GHG emission reduction potential. A pilot HVLTCB will be constructed at Grid Solution's premises to demonstrate the viability and benefits of the SF6-free system. Through the replication of this technology, a large decrease in SF6 use can be achieved.

[Project summary](#)

Climate Governance and Information

[Reducing CO2 emissions from buildings in Provence-Alpes-Côte d'Azur \(Heat&Cool LIFE\)](#)

The building sector has a significant role to play in the EU's transition to climate neutrality by 2050. Half of the EU's energy consumption is linked to household demand for heating and cooling, which is provided mainly by fossil fuels. In the Provence-Alpes-Côte d'Azur region, heating and cooling have a significant impact on air quality and energy demand. The region doesn't have many high-quality district heating and cooling networks, and this can become problematic when energy demand increases during warm periods. With the HeatT&Cool LIFE project, the Region Provence-Alpes-Côte d'Azur's public authority plans to increase the number of district heating and cooling networks powered by renewable energy and/or recovered waste heat, thereby reducing CO2 emissions. As a result, the heating and cooling demand of buildings already connected to district networks will be reduced. The project is expected to create 260 new jobs.

[Project summary](#)

[Cutting GHG emissions from energy at regional and local levels \(LETsGO4Climate\)](#)

The energy sector is responsible for more than three-quarters of Europe's greenhouse gas (GHG) emissions. European and national initiatives alone are not enough to reduce these emissions; action at regional and local level is also required. Led by the Regional Council of Centre-Val de Loire, the LETsGO4Climate project will increase electricity and heat production from renewable sources in the territories involved. The team will also encourage behavioural changes linked to energy consumption by raising citizens' awareness of energy efficiency and 'energy sobriety' (avoiding energy consumption altogether). As a result, GHG emissions from energy should fall by almost 2%.

[Project summary](#)

Croatia

Climate Change Mitigation

[A more sustainable telecommunications network \(LIFE4GREENBROADBAND\)](#)

The roll-out of new technologies such as 5G and the ever-increasing demand for greater internet speeds will likely increase the amount of energy used to operate telecommunications networks. The result of this will be more greenhouse gases (GHG) emitted by the industry. Telecom operator A1 Hrvatska plans to improve the Croatian network's energy efficiency and use of renewable energy to reduce GHG emissions through the LIFE4GREENBROADBAND project. Solar plants will be installed at 120 base telecommunication stations – an integral part of the electronic communications network – and special cooling solutions used at 200 stations. The project's results will be transferred within the wider A1 Group, which has companies in several European countries.

[Project summary](#)

Italy

Nature and Biodiversity

[Saving the critically endangered fan mussel from extinction \(LIFE PINNA\)](#)

Found only in the Mediterranean Sea, the fan mussel is a filter feeder which helps to improve water quality. The species is critically endangered following mass mortalities whose cause is not fully understood. The team behind the LIFE PINNA project aim to protect and conserve fan mussels in the Western Mediterranean and the Adriatic Sea, saving them from extinction. The plan is to apply conservation and repopulation measures in several pilot areas that are transferable to other locations where the fan mussel is decreasing. This will include developing and implementing the most suitable repopulation techniques, through captive breeding and relocating wild juveniles to selected sites. Citizen scientists will help to monitor donor fan mussel sites in order to evaluate the species' conservation status. So-called sentinels will also be monitored for warnings of mass mortality that could be dangerous for the fan mussel's survival.

[Project summary](#)

[Improving fish conservation in the Dora Baltea and its tributaries \(LIFE GrayMarble\)](#)

Marble trout and Adriatic grayling are under pressure in the Dora Baltea river and its 15 major tributaries. The team behind the LIFE GrayMarble project aims to improve the conservation status of both species, from unfavourable to favourable, in stretches of river of more than 60 km. This will be achieved by eliminating or mitigating major threats and through restocking the rivers with fish, improving habitat quality and updating fishing regulations. Wild populations will be reinforced and at least nine new populations created. In addition, a 20 km-long stretch of the Dora Baltea will be reconnected by removing barriers to fish movement. Thanks to the project, at least seven bodies of water will achieve a 'good ecological status' required under the EU's Water Framework Directive.

[Project summary](#)

[Conservation of cetaceans and sea turtles in the Mediterranean \(LIFE CONCEPTU MARIS\)](#)

Human activity is having a negative impact on cetaceans (dolphins, porpoises and whales) and sea turtles in the Mediterranean Sea. However, there is a lack of data on many of these species, especially in remote locations. The LIFE CONCEPTU MARIS project will improve the conservation of cetaceans and pelagic sea turtles (CEPTU), by filling information gaps on their ecological needs in the Mediterranean Sea. The project team, coordinated by the Italian Institute for Environmental Protection and Research (ISPRA), will identify and map important offshore marine sites, and establish an internationally agreed approach to support and further develop surveillance of their conservation status. They will also assess the impact of various human activities, such as discarded fishing gear and other marine litter, underwater noise, and maritime traffic. Ferries will be used as cost-effective platforms for long-term surveillance of CEPTU conservation. The project team will also develop guidelines for conservation measures to mitigate the impact of the main pressures on CEPTU species.

[Project summary](#)

[Seed banks to restore the endangered native plants of Italy \(LIFE SEEDFORCE\)](#)

Italy's plant flora are among the most biodiverse in Europe, with many protected species in the Alpine and Mediterranean regions, including a high number of endemic species. However, populations of most of these species are declining due to the abandonment of traditional agricultural and land-use practices, overgrazing, invasive alien species, and high-impact recreational activities. The LIFE SEEDFORCE project team, led by the Science Museum (MUSE) in Trento, will take an integrated approach to remove the threats that 29 of these protected species face. This will involve conservation measures to improve habitats in 76 Natura 2000 sites, and *ex situ* conservation. On site, the project team will remove shrubs and trees, cut grass, prevent overgrazing and trampling using fences, and eradicate invasive alien species. They will also collect seed and use it to restore habitats.

[Project summary](#)

[Environment and Resource Efficiency](#)

[Road and track surfaces that reduce noise and vibrations \(LIFE SNEAK\)](#)

At least 20% of the EU's population lives in areas where traffic noise levels cause annoyance, sleep disturbance, anxiety, hearing damage and stress-related cardiovascular problems. The LIFE SNEAK project will demonstrate the reduction of noise from roads in a densely populated urban area of Florence, Italy. This will be achieved by means of low noise and vibration surfaces and retrofitting solutions using recycled materials with life cycle costs comparable to those of traditional surfaces. The Municipality of Florence, the project coordinator, will deploy quiet pavements and a system of sound-absorbing panels to reduce noise caused by traffic in the pilot area of Florence.

[Project summary](#)

[An innovative and renewable energy stove \(LIFE GREEN-STOVE\)](#)

Biomass burning in domestic appliances releases high quantities of air pollutants. The LIFE GREEN-STOVE project will produce a special pellet stove which can significantly reduce pollutants and optimise the use of biomass as an alternative to fossil fuels in residential heating. The project team, coordinated by the Italian biomass heating company Palazzetti Lelio Spa, will demonstrate this new biomass downdraft gasification system in which hot air directly generates the flame without ignition. The stove is expected to significantly reduce emissions of nitrogen oxides, carbon monoxide, organic gas compounds and particulate matter.

[Project summary](#)

[End-of-life ski boots as a source of recycled plastic \(LIFE RecycleYourBoots\)](#)

Almost 600 000 ski boots are replaced by consumers in Europe every year, and hardly any are recycled. As a consequence, plastics and metals are lost to landfill. The LIFE RecycleYourBoots project will close the loop by recovering materials from used ski boots for a new niche market. This will be achieved by setting up a demonstration cross-industry system to recover and recycle ski boots in Germany, France, Italy and Austria. The project team, led by the sports boot manufacturer Tecnica Group, aims at overcoming existing market barriers for the recycling of plastics from end-of-life ski boots to ensure a constant feedstock for industry. 1 500 sports equipment shops in the four participating countries will act as collection hubs for end-of-life ski boots. A prototype plant operated by project partner

Laprimaplastics will disassemble, wash, shred, and clean the plastic materials for recycling. They will also use a novel grinding and separation technology for recycling inner shoe components.

[Project summary](#)

[Deriving fertiliser from sulphur and orange wastes \(LIFE RecOrgFert PLUS\)](#)

The LIFE RecOrgFert PLUS project addresses three environmental problems: land degradation, orange processing waste and waste sulphur. The team will turn orange waste and recovered sulphur into a high-quality organic mineral fertiliser, which can be used in alkaline and degraded lands to improve soil fertility and productivity. Coordinated by the company SBS Steel Belt Systems, the team will set up an innovative pilot process for processing pellets of sulphur-bentonite and orange waste to produce up to three tonnes of organic-mineral fertiliser per hour. They will demonstrate the effectiveness of this new fertiliser on different crops (pepper, tomato, onion, broccoli and durum wheat) over a two-year cycle on 27 hectares in southern and central Italy (Calabria and Abruzzo) and in central Macedonia (Greece). 3 000 tons of organic fertiliser is expected to be produced, avoiding the landfilling of 1 320 tonnes of wet orange waste and recovering 2 400 tonnes of sulphur. Soil health and crop yields will improve and there will be fewer greenhouse gas (GHG) emissions due to the substitution of petroleum-based chemical fertilisers.

[Project summary](#)

[A new circular approach for reusing and recycling ink cartridges \(LIFE NEW4CARTRIDGES\)](#)

The European ink cartridges market is worth around €9.4 billion, with 370 million units sold annually. However, reuse and recycling rates for ink cartridges are relatively low. Most are still incinerated or landfilled, generating significant environmental impacts. The LIFE NEW4CARTRIDGES project will provide solutions for both the upcycling of exhausted reusable cartridges and the recycling of cartridges no longer suitable for reuse. Project leader Eco Store, an Italian SME specialising in printer consumables, will develop and demonstrate a semi-automated ink cartridge regeneration process to replace the currently manual workflow, enabling the same cartridge to be reused up to 10 times instead of the current three times limit. The project team will implement a new cleaning procedure for used cartridges, recycle end-of-life cartridges using an innovative technology to obtain high-quality secondary raw materials, and raise consumer awareness to increase use of reusable ink cartridges.

[Project summary](#)

[A tool for assessing security hazards and the risk of domino effects \(LIFE SECURDOMINO\)](#)

Accidents at chemical and process plants, energy facilities, oil and gas installations and other industrial facilities can have serious environmental consequences, especially if they trigger a domino effect (a knock-on impact). The LIFE SECURDOMINO project team will develop a tool for assessing safety and security hazards and risks related to domino effects. The tool combines plant inspection and aerial photogrammetry (3D photography) using drones and will be tested at two sites in Italy and one in the Netherlands. It will use real-time data to assess the likelihood and consequences of accidents, while also enabling real-time mapping of safety measures and their effectiveness.

[Project summary](#)

[Greener and safer chromium-free process for hard coatings \(LIFE CROMOZERO\)](#)

Hexavalent Chromium (Cr(VI)) is crucial in metal plating and other industrial processes, but it is toxic and harmful to workers and the environment. Cr(VI) was formally banned in the EU in 2017, eliciting the need for a replacement, though there is a temporary authorisation on its sale until September 2024 for certain uses, including hard chromium plating. The LIFE CHROMEZERO, led by the Italian company Beretta, will develop and validate an alternative, chromium-free process for hard chromium plating, particularly to provide a corrosion protection layer for the internal part of rifle barrels. The project team aims to substitute the traditional galvanic chromate process with a Plasma Enhanced Chemical Vapour Deposition (PECVD) technology, based on the results from a single barrel prototype machine already developed by project partner DURALAR. The team will design and construct large-scale industrial pilot equipment to coat up to 50 barrels in a single step. As a result, the substitution of the hard chrome plating by PECVD is expected to lead to the elimination of 115 tonnes/year of irritant, corrosive, toxic substances such as chromic acid, sodium bisulfide, sulfuric acid and hydrated lime. This will reduce the presence of mutagenic and carcinogenic chemicals in the factory and improve local water and air quality due to reduced emissions in wastewater and the air exhaust system.

[Project summary](#)

[Sustainable mussel production \(LIFE MUSCLES\)](#)

Polypropylene (PP) socks used for mussel farming are considered a major source of sea-based plastic marine litter in the Mediterranean Sea. The LIFE MUSCLES project will reduce the environmental impact of using PP socks. Project actions will minimise the dispersion of PP socks in the marine environment and encourage their recovery and recycling to produce new socks and other items. The project team, coordinated by Legambiente Nazionale APS Onlus, will demonstrate aspects of the new circular economy model within two pilot mussel production areas in Italy (North Gargano and La Spezia). In the former area, PP socks will be recovered and recycled for use in mussel farming. In the latter area, PP socks will be replaced with brand-new biodegradable and compostable biopolymer (BP) socks. The project team will also provide mussel farmers with a mobile recycling plant for PP socks to operate directly at their facilities.

[Project summary](#)

[A cost-effective method of re-using polluted coastal sediments \(LIFE SEDREMED\)](#)

Removing polluted coastal sediments in disused industrial sites by mechanical dredging can be costly and cause significant environmental damage. The LIFE SEDREMED project offers a more efficient bio-remediation methodology, which adapts and combines two existing technologies: electro-kinetic system and biofixed microorganisms. The approach will be demonstrated on an area of two hectares at the former Bagnoli industrial site, remediating a volume of around 40 000 m³ of contaminated marine sediments. The project will develop a business plan for transferring its approach.

[Project summary](#)

[Sourcing surplus industrial hydrogen to power busses \(LIFE3H\)](#)

Fuel cells represent a sustainable and less-polluting alternative to fossil fuel for busses, especially if the cells use surplus hydrogen from local industry. The LIFE3H project aims to establish a fleet of clean, agile and small buses that run on such cells in three regional contexts in Italy: a seaport, an urban area and a

mountainous area. The new transport solution will improve air quality, reduce emissions and facilitate local mobility, economic growth and environmental sustainability.

[Project summary](#)

[Recovering VOCs during the finishing process in tanneries \(ReVoc4LIFE\)](#)

Organic solvents used in finishing processes are one of the main sources of Volatile Organic Compounds (VOCs) in the tanning industry. Current abatement systems built in spray booths do not adequately capture VOCs, which are lost to the atmosphere. The ReVoc4LIFE project team, coordinated by SIME SRL, will design and demonstrate the effectiveness of a full-scale pilot plant to improve the filtration system of spray booths. This will minimise VOC emissions and recover solvents contained in the VOCs to be reused in the tanning process. The innovative technology involves improved water treatment and air filtering, as well as novel adsorption filters. These filters incorporate sintered granules, made using sludge waste from wastewater treatment by a process called pyrosintering. The new technology will also help reduce water consumption in the tanning process by up to 90%.

[Project summary](#)

[Demonstrating a green alternative to chrome tanning \(LIFE I'M-TAN\)](#)

Conventional tanning using chrome can have some toxic and carcinogenic consequences, but the current alternative methods also pose environmental and health risks. The LIFE I'M-TAN project aims to demonstrate, on a semi-industrial scale, the sustainability and feasibility of using chemically modified natural tannins. Waste material will be recovered to produce fertiliser and additives for animal feed. SILVATEAM S.P.A., an Italian plant-based extracts producer, will draw up a business plan for marketing the process.

[Project summary](#)

[Removing PFAS from drinking water \(LIFE REMEMBRANCE\)](#)

The LIFE REMEMBRANCE project aims to demonstrate the commercial viability of producing innovative granules and cartridges, which remove harmful perfluoroalkyl and polyfluoroalkyl (PFAS) from drinking water. They will do this by recycling high-value industrial waste from the manufacture of hollow fibre membranes filters. The recycling process will be upscaled, producing customised prototype cartridges of varied sizes and shape to be filled with the granular sorbents. A single 50 gramme cartridge is expected to be able to eliminate PFAS from up to 4 000 litres of water.

[Project summary](#)

[Environmental governance and information](#)

[Combating air pollution and its negative environmental impact \(LIFE MODERn \(NEC\)\)](#)

The EU's National Emissions Reduction Commitments (NEC) Directive commits Member States to reducing certain air pollutants caused by human activities. EU countries must also implement national air pollution control programmes and monitor the effects of air pollutants on ecosystems. In Italy, this is not currently possible as its monitoring network does not cover the full variety of ecosystems. As a result, knowledge about the impacts of air pollution on ecosystems is lacking. The Carabinieri unit CUFAA plans to tackle this through the LIFE MODERn (NEC) project, which will help Italy comply with the

NEC Directive. Thanks to this project, national emissions ceilings will be established of some atmospheric pollutants, linking them to the impacts on ecosystems. The network of monitoring sites will be expanded so that it is fully representative of the variety of Italian freshwater and forest ecosystems. And a new set of indicators and monitoring protocols will be developed to study the impacts of air pollution on biodiversity. Awareness will also be raised among the Italian public about sources of pollution and their impacts on ecosystems.

[Project summary](#)

[Enhancing the marine Natura 2000 network in Italy and beyond \(LIFE SEA.NET\)](#)

Italy has a large number of marine sites that are part of the Natura 2000 network of protected areas. Measures to conserve and manage these sites began to be mapped out in 2009, but there is still much work to be done. For instance, the designation of marine sites to join the network needs to be completed and conservation measures identified more quickly. With the LIFE SEA.NET project, the environmental association Legambiente aims to improve the governance and management of Italy's marine Natura 2000 sites. In addition, cooperation will begin with at least four other Member States on the designation of transnational marine sites. Project staff will also work with fishermen to increase acceptance of Natura 2000 and help them access financing from the European Maritime and Fisheries Fund, which aims at conserving marine biodiversity.

[Project summary](#)

[Greater awareness and protection of Mediterranean marine Natura 2000 sites \(LIFE A-MAR NATURA2000\)](#)

Almost one-tenth of the EU's total marine area is part of the Natura 2000 network of protected sites. Yet, 30 years after its creation, the network in Mediterranean EU countries is still not well known. Little has been done to inform the public at large about the existence of marine Natura 2000 sites and to stimulate their protection. The Italian Federation of Parks and Nature Reserves is looking to turn this around with the LIFE A-MAR NATURA2000 project. The aim is to reduce the impacts and pressures on marine Natura 2000 sites in the Mediterranean and change the behaviour of local stakeholders. These include fishers, divers, tour operators, boaters, local organisations, residents and tourists. Work will focus on 560 sites in Spain and Italy, with replication sites planned for Greece, France, Malta and Albania. Good practices and sustainable behaviour in the management of marine Natura 2000 sites will be promoted and awareness raised about these sites. Activities will include a sustainable sailing campaign in Italy and Spain as well as a Natura 2000 regatta in Italy.

[Project summary](#)

Climate Change Adaptation

[Transforming damaged woods with innovative agroforestry \(LIFE VAIA\)](#)

Climate change is causing more frequent and severe extreme weather events. Trees are often damaged from these events, negatively impacting biodiversity and the economy. The LIFE VAIA project, coordinated by the organic food company Rigoni di Asiago, will help adapt forests to extreme weather events. The project team will accelerate natural regeneration processes and create economic opportunities for locals that will compensate them for the temporary loss of income from timber

exploitation. They will also develop an innovative agroforestry approach to promote a stable ecosystem with high biodiversity levels. This approach will help tackle most of the adverse effects coming from the destruction of trees, including erosion, mineralisation of organic matter, and biodiversity loss. It will also accelerate the reconstruction of forest ecosystems and create opportunities for sustainable economic development from non-wood products. These include growing and selling edible plants, small fruits and honey. This should reduce the number of locals leaving the areas affected.

[Project summary](#)

[Helping cities in the mid-Adriatic cope with rising temperatures \(Life + A_GreeNet\)](#)

Cities in the middle Adriatic area have, in recent decades, seen a steep rise in temperatures. This brings a greater risk of desertification, forest fires and public health issues. With the LIFE + A_GreeNet project, Abruzzo's regional authority Regione Abruzzo wants to reduce the vulnerability of cities along the middle Adriatic Sea to rising temperatures and heatwaves. The plan is to link up existing green areas and create new green infrastructure, to improve the climate resilience of the urban environment, air quality and public health. The conservation of existing green spaces will also be improved, and new tools developed for better planning and managing green areas. Temperatures are expected to come down by 4-10% in the pilot areas, and the measures should help capture carbon dioxide and some other polluting microparticles from the air. The LIFE + A_GreeNet approach will be shared with other provinces and municipalities in Italy and Croatia.

[Project summary](#)

[Climate Change Mitigation](#)

[Increasing the efficiency of domestic cold appliances \(VICORPAN\)](#)

The VICORPAN project team aims to reduce the energy demand of domestic cold appliances like fridges and freezers by demonstrating the benefits of installing insulating vacuum panels with open cells foam made from natural and recycled materials. They will create 12 prototypes to show how the panels improve these appliances energy performance and cut associated CO₂ emissions. The project will contribute to the circular economy by confirming the technological and commercial viability of re-using agricultural waste and recovered polyurethane in insulation.

[Project summary](#)

[Climate Governance and Information](#)

[Empowering chefs to promote sustainable and healthy food \(LIFE CLIMATE SMART CHEFS\)](#)

The food sector has a huge environmental footprint, yet chefs can have a major influence on consumer choices and food culture. The LIFE CLIMATE SMART CHEFS project, led by the Barilla Center for Food & Nutrition Foundation, will give chefs the tools to promote climate-smart, nutritious and affordable diets. This will be achieved through collaborative awareness-raising, communication and education campaigns targeting customers, staff and others working in the food sector. The aim is to change behaviour to reduce water use and food waste, while delivering sustainable and nutritious food. The project will target around 1 000 chefs, of which 160 will be trained to deliver more sustainable food. Also, around 110 chefs will take part in the LIFE Climate Smart Chefs Awards. And 500 are expected to use the online LIFE Climate Smart Chefs Tool to assess the environmental footprint of their menus.

[Project summary](#)

Cyprus

Environmental governance and Information

[Detoxifying wastewater from pharmaceutical manufacturing \(LIFE PHARMA-DETOX\)](#)

Making pharmaceuticals results in wastewater that contains harmful substances that can in turn lead to antimicrobial resistance. The team behind the LIFE PHARMA-DETOX project aims to detoxify this wastewater by transforming any pharmaceutical compounds present into non-toxic substances. The process, which uses the catalytic hydrogenation method that has been developed in a laboratory over the past six years, will be demonstrated on an industrial scale in a range of catalytic and reaction conditions. The team also plans to train industry staff in the use of the technology and ensure its replication across Europe.

[Project summary](#)

Latvia

Nature and Biodiversity

[Restoring wetlands in Latvia and Lithuania \(LIFE MarshMeadows\)](#)

The management of grasslands and fens in Latvia and Lithuania is hampered by a lack of economic incentives. Large areas of grasslands are abandoned and overgrown. Although Rural Development Programme (RDP) schemes are valuable for managing semi-natural grasslands, they don't support habitat restoration. LIFE MarshMeadows will demonstrate the link between fully functioning natural ecosystems and economic benefits for local communities. The project team, led by the Latvian Fund for Nature, will restore large areas in two major wetlands for the benefit of habitats and species. They will remove overgrown vegetation to restore grasslands, introduce long-term grazing management systems on restored areas, and make specific interventions to benefit targeted habitats and species, especially birds and amphibians. The extensive wet grassland and fen habitat restoration will give an economic boost to local communities in rural areas in Latvia and Lithuania. Examples include enhanced ecosystem services on farms, through the value of grazing animals, and the development of areas as nature tourism destinations.

[Project summary](#)

Hungary

Nature and Biodiversity

[Improving habitats for birds and insects \(LIFEforBUGS&BIRDS\)](#)

The Natura 2000 site Kiskunsági szikes tavak és az őrjegi turjánvidék in South-Central Hungary, part of the EU's network of protected areas, contains several habitats with unfavourable conservation status. These include some salt steppe, marsh and grassland habitats covered by the EU Habitats Directive. The Centre for Ecological Research aims to improve their conservation status with the LIFEforBUGS&BIRDS project. It plans to do so through a mixture of the best traditional management practices along with some innovative approaches, including insect-friendly grazing by sheep and cattle. This should improve feeding and breeding conditions for a number of farmland bird species and birds of prey. It should also increase habitat availability and quality for many shorebirds and wetland birds. Low-intensity grazing and avoidance of overgrazing will also benefit 15 species of protected plants.

[Project summary](#)

Climate Change Adaptation

[Innovative water management methods for river basins \(LIFE LOGOS 4 WATERS\)](#)

Water scarcity is a big problem in Hungary's natural habitats, and climate change will worsen the situation. There is a need for more climate change adaptation measures at the water catchment level. The goal of the LIFE LOGOS 4 WATERS project is to improve the climate resilience of local municipalities. The project team, coordinated by the Ministry of Interior of Hungary, will explore integrated and natural water management solutions at the catchment level. Specifically, they will test natural water retention measures in two types of small catchment (upland and lowland) to reduce climate vulnerability coming from water-related events. They will also address the loss of freshwater ecosystems like lakes and rivers, by restoring them. These measures will be promoted to other areas to increase their uptake.

[Project summary](#)

[Weathering stormwater impacts in Budapest \(LIFE in RUNOFF\)](#)

Parts of Budapest are particularly vulnerable to heavy rainstorms and flooding, due to a lack of greenery and hilly areas. The city's 12th district wants to reduce the impact of stormwater run-off on sewers, roads and buildings through the LIFE in RUNOFF project. The team plans on improving the resilience of public stormwater storage capacity, while stimulating private investment in blue and green infrastructure to reduce the severity of stormwater flows. This will see green roofs, rain gardens, permeable surfaces and irrigation barrels being installed. Thanks to LIFE in RUNOFF, more than 50 000 people in Budapest are expected to start using stormwater retention solutions.

[Project summary](#)

Climate Governance and Information

[Helping make the shift to clean energy in Bulgaria, Hungary and Romania \(LIFE BIO-BALANCE\)](#)

Bulgaria, Hungary and Romania plan to increase the use of biomass to meet EU renewable energy targets. WWF Hungary will support their ambition of becoming low carbon and resilient economies through the LIFE BIO-BALANCE project. The team wants to ensure that biomass use is balanced with alternatives and that only solid biomass with high sustainability is included in relevant national and EU policy and legislation. An open-source tool will be developed to evaluate biomass and greenhouse gas

savings. National experts will offer recommendations on sustainable biomass and alternatives to unsustainable biomass, influencing government policy and legislation. Other measures include raising awareness and sharing best practices with key players and citizens in 60 firewood-dependent municipalities across the three countries.

[Project summary](#)

Netherlands

Environment and Resource Efficiency

[Transforming carbon and glass fibre composites into carbon products \(LIFE CarbonGreen\)](#)

Recycling solutions are needed for carbon/glass fibre reinforced polymer (CFRP/GFRP) composites in end-of-life automotive, aerospace and wind energy components. The LIFE CarbonGreen project team, led by the Dutch SME BlueXPRT BV, will scale-up their ThorSpin process to recycle CFRP/GFRP waste. They will demonstrate the feasibility and cost-effectiveness of this novel process to convert CFRP and GFRP waste into CarbonGreen products. These products will contain activated carbon produced or regenerated by the technology. Their use in real-world situations will be demonstrated in applications where micro-pollutants must be removed from indoor air or water, especially wastewater treatment. The project will significantly reduce the amount of waste landfilled or incinerated and reduce greenhouse gas emissions due to the more energy-efficient process. It will also give a boost to the wind energy sector, by providing the first economically viable solution for recycling the growing number of end-of-life wind turbine blades.

[Project summary](#)

Environmental governance and Information

[More timber for Dutch and Danish social housing \(LIFE timber in housing\)](#)

The construction industry has a high environmental and climate impact because it uses a lot of concrete, steel and aluminium. More use of timber for buildings can help with the shift to a low-carbon economy. Currently timber use is low because it is mistakenly seen as too expensive and unsustainable, while the benefits and possibilities are not well known. Yet buildings can be constructed faster and cheaper thanks to timber innovations, creating less pollution. In addition, the recyclability and reusability of timber products has increased. The team behind the LIFE timber in housing project aims to increase the use of timber – from sustainably managed forests – in social housing in Denmark and the Netherlands. The tools used for choosing building materials in the social housing sector will be improved, to fully reflect timber's environmental credentials and so enable better decision making. Data on timber's benefits and possibilities will also be collected and shared with developers, architects, engineers and construction companies. Thanks to the project, almost 15 000 social houses in the Netherlands are expected to be built using timber by 2026.

[Project summary](#)

Climate Change Adaptation

[Transforming a town square into a green and multifunctional space \(LIFE COOL SQUARE\)](#)

Damsterplein is located on the roof of an underground car park in the city of Groningen, the Netherlands. Like many urban locations, it is vulnerable to the impacts of climate change, including heat island effects and flooding after storms. LIFE COOL SQUARE will address the need for innovative and integrated climate-adaptive design at such urban locations. The project team, coordinated by the city's municipal authority, will transform Damsterplein into a climate-adaptive, resilient, and multifunctional metropolitan area. They will follow the so-called 'sponge city' concept to prevent extreme drought and flooding. This involves removing impermeable paving and collecting rainwater for re-use, reducing pressure on the sewer system during storms. Urban heat island effects will decrease by planting indigenous plants and trees. This will lower temperatures and result in a healthier environment. Air pollution and sound emissions should fall due to a lower traffic speed limit in the area. All of these measures should encourage more people to use the square.

[Project summary](#)

[Enriching sandy farmland to boost climate resilience \(LIFE CO2SAND\)](#)

Agriculture has started to suffer the consequences of climate change, with crop yields declining during prolonged droughts. Sandy soils are particularly vulnerable, and the agricultural sector faces a challenge in making these soils, and their farming systems, more resilient. Clayey and loamy soil is an excellent means of increasing the resilience of sandy farmland. Yet every year, an estimated one million tonnes of this fertile soil – about 100 times as heavy as the Eiffel Tower – generated at Dutch public works installations is disposed of as waste. The Province of Gelderland plans to use some of this soil to enrich sandy farmland, covering a demonstration area the size of about 70 football fields. This will improve the soil's water retention and offer plants more water. The soil will also be more able to lock away carbon, increasing farmers' resilience to climate change. The LIFE CO2SAND method is expected to be replicated on 70 farms during the project and even more afterwards.

[Project summary](#)

Climate Change Mitigation

[Realising the potential of green hydrogen for transport \(LIFE NEW HYTS\)](#)

Hydrogen-powered fuel cell engines can play a crucial role in reducing the high carbon footprint of the transport sector. These engines are more suitable for heavy vehicles and for travelling long distances than battery-powered electric vehicles. However, 95% of hydrogen is produced from fossil fuels. The LIFE NEW HYTS project, which supports the hydrogen ambitions of the Dutch province of Utrecht, will demonstrate the possibilities for the local production, distribution and use of green hydrogen for road transport. Also, the province will gather valuable data and offer practical support for accelerating the uptake of green hydrogen in transport in the area and elsewhere in Europe.

[Project summary](#)

Austria

Nature and biodiversity

[Re-establishing northern bald ibis numbers in Europe \(LIFE NBI\)](#)

The northern bald ibis is classified as endangered in the IUCN Red List. This migratory bird species was originally distributed over northern Africa, the Arabian Peninsula and a large part of Europe; but it has long been extinct in Europe. LIFE NBI will build on the work of a previous LIFE project to establish a self-sustaining population of the ibis in a wintering site in Tuscany, Italy. The project team, coordinated by Vienna Zoo, will protect new colonies by reducing mortality due to illegal hunting in Italy, and due to electrocution on power lines in feeding sites in Austria. The knowledge of farmers on the bird's management-related needs will rise, along with the financial incentives available for appropriate organic farming through the Common Agricultural Policy (CAP). The project team aims to establish further colonies, and increase the population size of the northern bald ibis in the wintering area to over 350 migratory individuals.

[Project summary](#)

[Supporting ecological connectivity along a blue corridor \(LIFE Blue Belt Danube-Inn\)](#)

The Danube and Inn rivers in Austria contain heavily modified stretches, including the presence of hydroelectric power plants, which results in a lack of key habitats and barriers to fish migration. The LIFE Blue Belt Danube-Inn project team will increase high-quality habitat for species, especially for endangered fish such as sterlet. They will also improve ecological connectivity by linking several Natura 2000 sites along both rivers. And they will create habitats such as shallow banks, gravel bars, and oxbows along the Inn and Danube. Verbund Hydro Power in collaboration with the other project partners will build fish passes to allow migrating species access to upstream river sections to breed. As a result of the project actions, over 50 fish species, including 15 listed in the EU Habitats Directive, and other aquatic organisms will be able to move or migrate unhindered upstream to access large floodplain areas and numerous tributaries.

[Project summary](#)

[Creating a natural habitat corridor along the Danube River \(LIFE WILDIsland\)](#)

The Danube River is a hub of biodiversity. However, agriculture and modifications to the river course have dramatically reduced and divided riverine habitats. Danube islands are important sites for intact habitats, accounting for one-third of alluvial forests in Danube Natura 2000 sites. The LIFE WILDIsland project will conserve this priority habitat type along the entire course of the Danube. To achieve this, the project team, led by Donau-Auen National Park, will conduct coordinated, Danube-wide conservation and restoration actions for the Danube islands. They will restore natural processes and river dynamics to preserve Danube islands as alluvial forests sites, implement measures to transform inland waterways into ecological corridors, and remove invasive non-native species from the islands. Restoring islands in sections of the Danube significantly altered by hydropower plants will also increase coherence of the new Danube Wild Island Habitat Corridor.

[Project summary](#)

Poland

Nature and Biodiversity

[A brighter future for the Apollo butterfly in Poland, Czechia and Austria \(LIFE Apollo2020\)](#)

The Apollo butterfly is one of the most threatened butterfly species in Europe. Its numbers have decreased by 20-50% over the past 25 years, mainly due to loss and fragmentation of its habitat. The LIFE Apollo2020 project will re-establish Apollo butterfly populations in Czechia and Poland and strengthen the population in Austria. The project team, coordinated by Karkonosze National Park in Poland, will create three breeding farms for the butterfly, establish three new core population sites, and at least 38 stepping stone sites to secure migration corridors. Around 1 000 individuals per year will be released into restored habitats in the three countries.

[Project summary](#)

Climate Change Adaptation

[Adapting commercial buildings to withstand climate impacts \(LIFE Archiclimate\)](#)

The LIFE Archiclimate project team plans to demonstrate a new approach to improving the climate change resilience of large-scale commercial buildings at the airport in Katowice, Poland. The team's system comprises vulnerability and risk assessment, adaptation planning, blue and green infrastructure and ecological approaches. They will assess 32 large sites across the EU, with a special focus on the impact of extreme weather, and based on these assessments draw up climate adaptation, business and monitoring plans.

[Project summary](#)

Climate Change Mitigation

[Renewable-powered cooling systems for public buildings \(COOLSPACES 4 LIFE\)](#)

Rising global temperatures are driving up demand for air-conditioning systems, increasing the demand on electrical grids. Improving the energy efficiency of buildings and using locally sourced renewable energy can reduce this rising demand. The COOLSPACES 4 LIFE project team aims to demonstrate the feasibility of using renewable energy in the cooling systems of public buildings. They also want to use low global warming potential (GWP) refrigerant mixtures. To this end, they will install a prototype at the Wrocław University of Science and Technology (WUST) campus in Poland. The prototype will be powered by solar panels and use organic phase change materials for short-term cold energy storage. The approach will subsequently be tested in Spain to show that it can work in different climates.

[Project summary](#)

Portugal

Nature and Biodiversity

[Saving endangered snails in the Azores \(LIFE SNAILS\)](#)

This project targets three species of mollusc endemic to Santa Maria Island, in the Azores (Portugal), which are assessed as either 'critically endangered' or 'endangered' on IUCN Red Lists. The woodland and shrubland habitats of these species are under threat due to fragmentation, agricultural and forestry activities, and the spread of alien invasive plant species. LIFE SNAILS will increase habitat quality and availability to ensure the long-term conservation of the endemic snails. The project team, coordinated by the Azores Regional Secretary for Environment and Climate Change, will identify cost-effective solutions to increase habitat diversity and quality on around 27 hectares of productive forest areas (equivalent to the area of 27 rugby pitches). Project actions will establish green infrastructure to reduce the fragmentation of suitable habitat, control invasive non-native flora and fauna, restrict cattle access, and establish methods to increase soil moisture and ground cover.

[Project summary](#)

Slovenia

Nature and Biodiversity

[Conserving grassland habitats through a new seed bank \(LIFE FOR SEEDS\)](#)

In Slovenia, as in most parts in Europe, species-rich extensive grasslands have rapidly declined, due to agricultural intensification or land abandonment. The LIFE FOR SEEDS project will improve the conservation status of the most threatened grassland habitats in Slovenia. The project team coordinated by DOPPS, a conservation NGO, will establish a seed bank of characteristic plant species of priority grassland habitat types. The seed bank will be able to hold 12 000 accessions of at least 300 different plant species, collected from 21 Natura 2000 sites in Slovenia. They will restore around 62 hectares (the area of 62 rugby pitches) of three priority grassland habitats in five Natura 2000 sites. They will also test two different grassland restoration techniques, namely green hay and seed mixtures, to determine the most suitable for each case.

[Project summary](#)

Slovakia

Environment and Resource Efficiency

[Developing green hydraulic systems for demolition tools \(LIFE PowerCylinder\)](#)

The LIFE PowerCylinder project team will develop innovative hydraulic systems to reduce greenhouse gas (GHG) emissions related to demolition activities. They also aim at improving the efficiency of the machinery. The beneficiary, PistonPower s.r.o, will manufacture a range of cartridge amplifiers (CAs) for

use in hydraulic cylinders, with the resulting components integrated into different types of demolition tool excavator attachments. These include crushers, rotating pulverisers and fixed pulverisers. Six prototypes will be produced and demonstrated on a test site.

[Project summary](#)

Finland

Nature and Biodiversity

[Better conditions for freshwater pearl mussels in the Boreal region \(LIFE Revives\)](#)

The freshwater pearl mussel is an endangered species globally and has an ‘unfavourable-bad’ conservation status in the EU Boreal region. Without action, the species will become extinct in most areas where it is currently present. Through the LIFE Revives project, the University of Jyväskylä aims to improve conditions for freshwater pearl mussels in 56 rivers in Estonia, Finland and Sweden – covering almost one-tenth of the population in these countries. Work will include restoring almost 120 km of river habitats, while new breeding stations in Estonia and Finland will provide captive-bred juveniles for release into the wild. After the project, almost one-fifth of freshwater pearl mussel populations in the three target countries should have a ‘favourable’ conservation status.

[Project summary](#)

Sweden

Environment and Resource Efficiency

[Decreasing waste during food production \(LIFE RE:FOOD\)](#)

Each year, 88 million tonnes of food waste are generated in the EU, at great cost and with considerable environmental impacts. The overall goal of the LIFE RE:FOOD project is to demonstrate a new, innovative recycling process for food waste to produce a number of different food products. Project leader Mycorena is a Swedish SME that specialises in fungi biotechnology to create vegan protein for food products. The project team will scale-up and validate the production process for a vegan fungi-based protein ingredient produced from food waste, namely oat and wheat residues generated by project partner Berte Qvarn. A sustainable and locally produced food product will subsequently be demonstrated to consumers and food producers.

[Project summary](#)

Climate Change Mitigation

[Pioneering a cost-effective wave energy system \(LIFE NOVIOCEAN\)](#)

Increasing the share of renewable energy and making its production more efficient can help avoid a lot of greenhouse gas (GHG) emissions. Close-to-shore wave energy has the potential to provide 10% of the global electricity demand by 2050. The LIFE NOVIOCEAN project will demonstrate a new and innovative

wave energy concept called NoviOcean. This innovation will produce the same amount of energy as existing wave energy converters but at a much lower cost. The project team will construct a pilot unit to validate NoviOcean's components and systems on an industrial scale.

[Project summary](#)

United Kingdom

Nature and Biodiversity

[Improving rare and degraded bogs in South Yorkshire \(LIFE Moor Space\)](#)

The Thorne Moor Special Area of Conservation (SAC) in South Yorkshire is part of the last remnants of a large wetland that occupied the Humberhead Levels floodplain thousands of years ago. It is the largest area of lowland raised bog in England, one of Western Europe's rarest and most threatened habitats. Rich in species such as peat mosses and cotton grasses, the site also supports the Thorne pin-palp beetle – found nowhere else in the UK and rare in Europe. Natural England plans to improve the conservation status of degraded and active raised bogs within the Thorne Moor SAC through the LIFE Moor Space project. It will restore 400 hectares of degraded bog – an area the size of 560 football fields. Birch and invasive rhododendron will be cleared from the SAC and adjacent land, with Sphagnum mosses planted to create and stimulate peat-forming vegetation. Natural England is also aiming to secure agreements with most of the owners of neighbouring land to ensure it is sustainably managed, benefiting the SAC.

[Project summary](#)

[A conservation boost for Welsh rivers \(4 Rivers for LIFE\)](#)

The freshwater pearl mussel was once widespread throughout the rivers Teifi, Cleddau, Tywi and Usk in Wales. Now though this critically endangered species is restricted to a few scattered individuals. The four rivers, part of the Special Area of Conservation network, are also important for a number of other species such as the allis and twaite shad, Atlantic salmon, sea lamprey and bullhead. However, they are in an unfavourable condition. Natural Resources Wales is looking to improve their conservation status through the 4 Rivers for LIFE project. Habitat restoration measures will be carried out in more than 150 km of river, while removal of weirs and other barriers should open up almost double this for migratory fish. More than 10 000 freshwater pearl mussels will be released in order to re-establish viable populations in southwest Wales. In addition, the project team plans to tackle invasive alien species such as Himalayan balsam and reduce the amount of nutrients, plastic and sediment entering the rivers.

[Project summary](#)

[Restoring transition mires and quaking bogs in Wales \(LIFE quake\)](#)

Wales is home to almost 10% of transition mires and quaking bogs. Most of this habitat is found in six special areas of conservation where it has an unfavourable conservation status, being affected by extensive grazing or undergrazing, lack of management, pollution and drainage. Natural Resources Wales aims to restore these mires and bogs – and their wider wetland landscape – to favourable conservation status through the LIFE quake project. Its work will also benefit the marsh fritillary butterfly, a species that has declined since the 1970s. Planned measures include establishing the right

grazing routines to restore and maintain transition mires and quaking bogs, as well as bringing back the historical drainage and water flow regimes that allow them to develop. In addition, native scrub will be removed or controlled and the spread of invasive alien species limited, especially Himalayan balsam and swamp stonecrop.

[Project summary](#)

[Improving freshwater, coastal and marine habitats along the Northumbrian coast \(LIFE WADER\)](#)

Spanning an area from the south-east Scottish border along the Northumbrian coast, this project is aimed at improving a number of freshwater, coastal and marine habitats with bad conservation status. Through LIFE WADER, Natural England plans to tackle pollution, disturbance of birds, mammals and sensitive habitats, invasive alien species on six sites part of the Natura 2000 network of protected areas. This will enable these sites and their ecosystems to become more resilient to climate change. The condition of almost 50 000 hectares will be improved – an area almost as big as The Isle of Man - including coastal dunes, estuaries, mudflats, sandflats, intertidal seagrass beds and water courses. Work will also help safeguard breeding and wintering populations of birds, for instance with refuges and habitat created for roseate tern.

[Project summary](#)

[Protecting Rathlin Island and its wildlife from invasive rats and ferrets \(LIFE RAFT\)](#)

Rathlin Island, off the coast of County Antrim, is Northern Ireland's only inhabited offshore island, with a permanent community of around 150 people. Many of its seabirds – along with some small mammals, invertebrates and plants – have seen significant declines. Predation by rats and ferrets is thought to be responsible. These two invasive species also affect Rathlin's human community, through transmission of diseases and damage to homes and smallholdings. With the LIFE RAFT project, The Royal Society for the Protection of Birds aims to eradicate them from the island. This should benefit a number of birds like the chough and corncrake, small mammals, invertebrates and plants – as well as the people of Rathlin. The island is expected to be recolonised by seabirds driven extinct there. These include the Manx shearwater and black-headed gull and potentially the storm petrel, which is suspected to have bred on Rathlin in the past. In addition, new employment and economic opportunities such as eco-tourism will help the island's post-pandemic recovery and growth longer term.

[Project summary](#)

[Safeguarding threatened mussels and crayfish in the River Kent area \(LIFE R4ever Kent\)](#)

The River Kent Special Area of Conservation (SAC) is home to the critically endangered freshwater pearl mussel and the endangered white-clawed crayfish. Most of the SAC has an unfavourable conservation status, affected by problems ranging from river modifications, water quality and silting to invasive alien species and diseases. With the LIFE R4ever Kent project, Natural England aims to restore and revitalise the SAC, making it more resilient to environmental pressures and securing the survival of these species. Planned measures include tree planting, weir removal, embankment improvements and removal of invasive plants. Nearly 90 hectares will be restored in all – an area almost as big as Monaco. More than 4 000 freshwater pearl mussels should be bred for release. And new techniques will be trialled to provide early warning of crayfish plague, a disease carried by invasive signal crayfish.

[Project summary](#)

Environment and Resource Efficiency

[Recyclable formaldehyde-free wood-based panels \(LIFE B3 FURN\)](#)

MDF, which is commonly used to make furniture, emits the carcinogen, formaldehyde. It is also difficult to recycle, a challenge that the LIFE B3 FURN project team has overcome on a pilot scale. The project aims to scale up its proprietary process to produce commercially viable wood panels from recycled materials that are free of formaldehyde. The panels will be 100% recyclable at their end of life and equal in performance to conventionally produced MDF. The project's process reduces costs, saves emissions and lowers the uses of natural resources.

[Project summary](#)

[Upscaling a sustainable and effective plastic separation process \(LIFE BOSS\)](#)

The Baffled Oscillation Separation System is a water-based separation process for plastics that is as effective for dark plastic waste as other colours. The LIFE BOSS project will upscale this process at an automated demonstration plant that can recycle 25 000 tonnes of post-consumer mixed rigid waste a year. It will then carry out large-scale demonstrations at industrial plants in France and the Netherlands in order to evaluate the technology's potential for replication across the EU. The technology offers significant CO2 emission, water and energy savings compared to other recycling processes.

[Project summary](#)