

# Annex\* LIFE programme: 2017 projects

*\*The list of projects is correct at the time of publication; further LIFE projects may subsequently be funded from the reserve list. This information will be available on the LIFE website (<http://ec.europa.eu/life>).*

*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.*

*Budget figures are rounded to the nearest 100 000. Due to rounding, some totals may not correspond with the sum of the separate figures.*

## **BELGIUM (BE) (3 projects – 12.5 million)**

*LIFE Nature & Biodiversity (1 project – 8.3 million)*

### **Finding a use for waste from protected habitats (Green Valleys)**

Grassland and wetland management generates lots of organic matter, or biomass, from site clearance and mowing. This material does not meet the needs of modern livestock farming or compost producers and so it is usually treated as waste. In line with EU climate change and circular economy policy goals, the Green Valleys project will develop long-term solutions for using organic matter from restoring and maintaining 10 meadow, wetland and forest habitats in Flanders and alkaline fens in Poland. This material will be generated by the removal of plantations of non-native trees and an extensive mowing regime.

[Project summary](#)

*LIFE Environmental Governance & Information (1 project – 1.1 million)*

### **Enforcing legislation to prevent illegal waste trading (LIFE SWEAP)**

The EU has introduced a number of measures to prevent the illegal shipment of waste, including obligations on Member States to carry out waste shipment inspections and to cooperate with each other. LIFE SWEAP promotes enforcement activities by providing training for inspectors and increasing the capacity of police, customs and the judiciary to tackle waste crime in all 36 member countries of IMPEL, the EU Network for the Implementation and Enforcement of Environmental Law. Information sharing and an improved tool for visualising the scale and routes of illegal shipments will help detect, disrupt and prevent illegal waste trafficking. Enforcing the EU Waste Shipment Regulation promotes the efficient use of resources, in line with circular economy policy.

[Project summary](#)

*LIFE Climate Change Mitigation (1 project – 3.0 million)*

## **Lowering the carbon footprint of particle accelerators (LIFE\_SF6-FREE)**

Particle accelerators are used to sterilise medical products, treat food and screen cargo. They commonly use a greenhouse gas, sulphur hexafluoride (SF<sub>6</sub>), that is tens of thousands of times more powerful than carbon dioxide. Any leak of this gas has a significant impact. Working with partners from the UK and France, Belgian company Ion Beam Applications will prove the viability of two alternatives: a gas mixture that can be used with existing equipment and a carbon dioxide-nitrogen mixture for use with new particle accelerators. Both options will be shown to lower the carbon footprint of particle accelerators and to have potential for use in other high-voltage applications. The beneficiary expects to have more than 10 installations of each SF<sub>6</sub> alternative in commercial use three years after the project.

[Project summary](#)

## **BULGARIA (BG) (4 projects – 7.0 million)**

*LIFE Nature & Biodiversity (2 projects – 3.5 million)*

### **Supporting the fragile ecology of coastal lagoons (The Lagoon of LIFE)**

Atanasovsko Lake on Bulgaria's Black Sea coast has a rich biodiversity thanks to the coastal lagoons created by traditional salt production infrastructure. However, conservation management is still needed to maintain this priority habitat. Enhancing the conservation status of coastal lagoons will also benefit many resident and migratory bird species, such as the great bittern (*Botaurus stellaris*). This will be achieved by increasing the area of coastal lagoons, creating and restoring infrastructure used for bird nesting, feeding and resting, and improving ecological processes, such as water purification using aquatic plants. The project will also promote the socio-economic benefits generated, including health and nature tourism and the continuation of salt manufacturing.

[Project summary](#)

### **Bats and people – sharing LIFE under one roof (LIFE UNDER ONE ROOF)**

Bats can eat their own weight in insects every day, making them an important natural controller of pest insects. Bats in farm buildings are good news for organic farmers. LIFE UNDER ONE ROOF will create artificial roosts for bats and restore their favoured habitats to increase food supply in eight Natura 2000 sites in Bulgaria. It will also seek to make people more positive about bats, for instance by increasing awareness of the economic value of their pest control role. To build capacity for bat protection, professional and volunteer conservationists will guard colonies during sensitive breeding and hibernation periods. The end goal is an improved conservation status for nine bat species.

[Project summary](#)

*LIFE Environmental Governance & Information (1 project – 1.5 million)*

## **Raising awareness about Natura 2000 in Bulgaria (LIFEforBgNATURA)**

The Natura 2000 network and its objectives remain abstract and unclear to much of Bulgarian society, including citizens, landowners, the farming, hunting, and fishing communities, and representatives of local authorities. This leads to negative attitudes towards the network of nature conservation areas, attitudes that are often expressed in the Bulgarian media and rarely countered. LIFEforBgNATURA will raise public awareness about the Natura 2000 network through an awareness campaign reaching 4.5 million people. The campaign focuses on the conservation of flagship species, including wolves, bears, vultures, eagles and sturgeons. More than 6 out of 10 Bulgarian citizens are expected to have greater recognition of Natura 2000 and the flagship species at the end of the project.

### [Project summary](#)

*LIFE Climate Change Mitigation (1 project – 2.0 million)*

## **Reducing energy and emissions in glassmaking (LIFE Smart Oxy-Boost)**

Glassmaking is an energy-intensive industry that is responsible for high levels of carbon dioxide emissions. But adjustments can be made to the melting furnace, where most of the energy is consumed in maintaining the very high operating temperatures. The LIFE Smart Oxy-Boost project will partially convert an air-fuel float glass furnace at a tenth of the normal cost so that it uses 4.2% less natural gas. It will also reduce carbon dioxide emissions related to combustion by the same amount. The Bulgarian glass producer, Trakya Glass, calculates a return on investment of two to three years.

### [Project summary](#)

## **CZECH REPUBLIC (CZ) (2 projects – 6.8 million)**

*LIFE Nature & Biodiversity (2 projects – 6.8 million)*

## **Restoring threatened wetlands at the Czech-German border (LIFE for MIREs)**

The Šumava National Park and the Bavarian Forest form an extensive and important wetland area, but this is threatened by drainage, peat extraction and climate change impacts. LIFE for MIREs is going to improve degraded mires and other wetland habitats, and the underlying movement and distribution of water across this area that straddles the border of the Czech Republic and Germany. As well as restoring five protected habitats, the project will benefit a number of species, in particular the locally-endangered black grouse (*Tetrao tetrix*).

### [Project summary](#)

## **Connecting hermit beetle populations (LIFE Osmoderma 2017)**

On the migration corridor that links Europe's Pannonian and Continental biogeographic regions, the hermit beetle (*Osmoderma eremita*) is under threat. Micro-populations of beetles are genetically isolated and their favoured

habitat, hollow trees, is being lost through a lack of willow management. Here, in the 'Poodří' Natura 2000 site in the Czech Republic, the LIFE Osmoderma 2017 project aims to plant over 1 500 suitable trees to create links between disconnected hermit beetle micro-populations. It will also conserve existing cavity-trees and re-establish the traditional pollarding of willows.

### [Project summary](#)

#### **DENMARK (DK) (1 project – 8.4 million)**

*LIFE Nature & Biodiversity (1 project – 8.4 million)*

#### **Large-scale actions for birds in Denmark and Germany (Better BirdLIFE)**

Resident and migratory bird species and a range of habitats are in less than prime condition at 12 conservation areas in Denmark and parts of Germany. This wide-ranging project will address problems such as overgrown sites, low water levels, loss of feeding, breeding and roosting habitat, predation, and heavy nutrient loads. Better BirdLIFE will take measures to counteract these issues and improve the conservation status of the 14 bird species and 10 habitats targeted within the project area. As an additional benefit, it will also help improve the conservation status of two marine mammals, the harbour porpoise (*Phocoena phocoena*) and the harbour seal (*Phoca vitulina*).

### [Project summary](#)

#### **GERMANY (DE) (6 projects – 43.0 million)**

*LIFE Nature & Biodiversity (2 projects – 5.4 million)*

#### **Saving the Rhine floodplain wetlands (LIFE Wetland Emmerich)**

The floodplain area of the Rhine in Germany is progressively drying out, making life difficult for the wildlife of its wetlands. LIFE Wetland Emmerich's innovative water retention measures will counter the drying of the floodplain. Actions target four habitat types of the Habitats Directive to the benefit of numerous characteristic and protected species, especially birds. The project will, for example, restore oxbow lakes, expand mudflat areas, reintroduce native plant species, and use irrigation and controlled flooding to rewet the summer polders that breeding birds prefer.

### [Project summary](#)

#### **Protecting rare wetland plants from hungry invaders (Reeds for LIFE)**

Reeds and floating-leaf plants have declined in two nature reserves in North Rhine-Westphalia. The lesser bulrush (*Typha angustifolia*) and the bulrush (*Typha latifolia*) have almost disappeared in one, where they are being eaten by the coypu (*Myocastor coypus*), an invasive rodent native to South America. Reeds for LIFE project will restore tall-growing reeds and encourage floating-leaf plants as essential components of turbid lakes and ponds. At the same time, it will control the invasive coypu in a sustainable way. The

black tern, bittern and other valuable water bird and reed marsh species will also benefit from the project's work.

### [Project summary](#)

*LIFE Environment & Resource Efficiency (2 projects – 34.1 million)*

#### **Turning waste into fuels, lubricants and solvents (LIFE CoWaCo)**

In order to shift to a circular economy, waste materials need to be converted into useful products. In Rendsburg, northern Germany, this new project will set up a near-zero emission prototype to process biogas, sewage sludge and manure into sulphur-free, carbon-neutral and high-quality primary products (fuels, lubricants and solvents). This will reduce the amount of waste incinerated, preventing harmful effects on soil, air, climate, groundwater and resources. The new products will be certified for commercial use, creating potential new markets for existing bio- and sewer-gas plants, waste disposal and wastewater treatment companies and suppliers of raw input materials.

### [Project summary](#)

#### **Increasing the recycling of plastic waste (LIFE PEPPCYCLE)**

Only 40% of plastic packaging is recycled. Improvements in sorting technology could help increase the rate of recovery and reuse. LIFE PEPPCYCLE will establish two large-scale lines for sorting and recycling high-density polyethylene and polypropylene from mixed waste streams. The recovered material will be processed into high-quality recyclates, which can be used for the consumer goods market. The project intends to show that 100% substitution for virgin materials is possible, whilst making significant savings in energy and carbon dioxide emissions. It will carry out a lifecycle assessment of the environmental impact of three products and prepare for market uptake and replication in other EU countries, as well as Germany.

### [Project summary](#)

*LIFE Environmental Governance & Information (2 projects – 3.6 million)*

#### **Turning business premises into biodiversity havens (LIFE BooGI-BOP)**

The way we use land has a profound effect on ecosystems and biodiversity. With a few simple changes business premises can become a refuge for biodiversity, or help connect species and habitats. This project will reach out to tens of thousands of enterprises in Germany, Austria, Slovakia and Spain to show them how their real estate can be turned into biodiversity-oriented premises (BOP). It will also connect with architects, facilities managers, local authorities and policymakers to spread the BOP message and support the EU Biodiversity Strategy. This will include establishing a European network to promote BOP.

### [Project summary](#)

## **Reducing harmful emissions from agriculture (LIFE Air & Agriculture)**

The industrialised production of meat and dairy emits ammonia (NH<sub>3</sub>) and methane (CH<sub>4</sub>), which cause severe damage to vegetation, ecosystems and health. Although the negative impacts of these emissions are widely known, there is a lack of implementation and knowledge in the legislative process and in practice. The project will focus on reducing ammonia and methane emissions from agriculture by better implementing legislation, building capacity and encouraging a change of consumption patterns. To do this it will involve NGOs in legislative processes, train relevant actors in the food sector, and improve the curriculum of agricultural vocational training.

[Project summary](#)

### **ESTONIA (EE) (1 project – 2.0 million)**

*LIFE Climate Change Adaptation (1 project – 2.0 million)*

#### **Adapting cities to the effects of extreme rainfall (LIFE UrbanStorm)**

Climate change-related heavy rainfall is projected to increase dramatically in Estonia, placing huge pressures on urban storm water drainage systems. LIFE UrbanStorm will develop action plans for Tallinn and the neighbouring town of Viimsi that include transferable measures for increasing flood resilience. Eight more towns are expected to launch action plans as a result. In Viimsi, the project will set up four demonstration sites for nature-based sustainable urban drainage systems along with four mobile weather stations. The local community will be encouraged to re-use storm water and change its water consumption habits. The project will also propose tax incentives for constructing sustainable water management systems.

[Project summary](#)

### **IRELAND (IE) (2 projects – 4.0 million)**

*LIFE Environment & Resource Efficiency (2 projects – 4.0 million)*

#### **Making it easier to monitor water quality (LIFE EcoSens Aquamonitrix)**

Improving the condition of Europe's water bodies is taking longer than foreseen. Faster, cheaper and more comprehensive monitoring technology could speed up this process. LIFE EcoSens Aquamonitrix will bring a near-continuous water quality monitoring solution to market, one that can cost-effectively meet the EU Water Framework Directive's requirements for frequent monitoring of water quality. Prototypes of the portable system will be manufactured and tested in 11 operational environments. Results will be used to draft a business plan to ensure market penetration. When brought to market, this affordable technology will result in more monitoring being undertaken, simplify water management decision-making and make it easier to comply with regulations.

[Project summary](#)

## **Minimising misconnections in the urban water network (Dublin Urban Rivers LIFE)**

Misconnections occur when toilets, sinks, washing machines or dishwashers are incorrectly linked to drains and channels designed to receive rainwater. Some 3-4% of household wastewater ends up in the surface drainage system rather than sewers, with negative impacts on water quality. Dublin Urban Rivers LIFE will use mapping technology to make it quicker and cheaper to carry out domestic misconnection inspections. Data from 12 000 inspections in the Dublin area will be used to develop a decision-support tool for water managers, project developers and policymakers in towns and cities. The project will also construct artificial wetlands to improve water quality, boost public wellbeing and alleviate flood risk at five strategic locations.

[Project summary](#)

## **GREECE (GR) (12 projects – 29.6 million)**

*LIFE Nature & Biodiversity (3 projects – 7.6 million)*

### **Reversing the decline of Mediterranean coastal habitats (LIFE PRIMED)**

Transitional small wetlands and coastal forests are among the most degraded and threatened ecosystems in the EU. LIFE PRIMED is working to conserve the largest remaining riparian forest in the Mediterranean, in Greece's Nestos Delta, as well as Palo Laziale woods in Italy. It will increase the area of temporary ponds and improve water management to reverse forest habitat decline and boost populations of protected turtles, tortoises and moths. Good practices will be shared with managers of other small transitional wetland and coastal forest ecosystems. The project will involve local people in conservation actions that also boost sustainable tourism and recreational activities at both sites.

[Project summary](#)

### **Safeguarding Bonelli's eagle in Greece and Cyprus (LIFE Bonelli eastMed)**

Bonelli's eagle (*Aquila fasciata*) has declined dramatically in numbers and range in recent decades and is now classed as endangered at European level. This project will tackle the most critical threats to the bird in Greece and Cyprus, the strongholds of the species in the eastern Mediterranean, to improve its conservation status. It will work to reduce disturbances at nesting sites, increase the availability of prey in breeding territories, and reduce deaths at breeding sites and dispersal areas. Over 40% of the Greek and Cypriot Bonelli's eagle populations will benefit. The project will also set up a conservation network for the species in the eastern Mediterranean.

[Project summary](#)

### **Making caves a home for bats (LIFE GRECABAT)**

Caves that are closed to the public provide a refuge for many endangered bats, but human activities are a constant threat. LIFE GRECABAT is on the



case, restoring roosting habitat for bats, creating cave micro-reserves, installing alarms at cave entrances, and establishing a network of volunteers to collect data. Activities to raise awareness of the ecological importance of caves and to combat negative attitudes toward bats are a key element of the project's mission. The outcome should be an improvement in the conservation status of these cave habitats and 10 protected bat species in Greek Natura 2000 sites.

### [Project summary](#)

*LIFE Environment & Resource Efficiency (5 projects – 12.3 million)*

#### **Greening urban freight transport (LIFE GYR)**

Improving the logistics of road transport operations could reduce greenhouse gas emissions without a large investment. LIFE GYR (Green Your Route) will promote energy-efficient urban freight transport by delivering an innovative, smart and integrated vehicle-routing platform to five SMEs in three EU Member States: Czech Republic, Greece and Italy. The platform will include tools and services for making green routing decisions that take into account eco-driving requirements and cost-efficiency. The project will establish a company to provide a certified cost-saving green routing service to transport operators.

### [Project summary](#)

#### **Smart farming for a circular economy in agriculture (LIFE GAIA Sense)**

There is a need for farming systems that increase food production while making more efficient use of limited resources. LIFE GAIA Sense will demonstrate an innovative, adaptable and affordable smart farming system on 18 farms in Greece, Portugal and Spain, for nine crops under different terrain and microclimatic conditions. The project will assess the system in terms of impacts on soil, water and air quality, greenhouse gas emissions, savings on water and pesticide use, and farmers' incomes. The lessons learnt will help build a circular economy in agriculture.

### [Project summary](#)

#### **Monitoring health impacts of nanomaterials (LIFE NanoEXPLORE)**

Engineered nanomaterials are becoming widely used in a variety of applications. However, little is known about potential impacts of sustained exposure to them in the workplace and indoors. LIFE NanoEXPLORE has set out to develop technology and online tools to monitor exposure to engineered nanomaterials in indoor workplaces and urban areas. The technology will be used to bio-monitor people to identify possible health impacts, including from inhalation. This new approach to nanomaterial risk assessment will be validated through a pilot study in Greece, Italy, Spain and the UK. The long-term goal is a harmonised health surveillance system and new EU policies on the safer use of engineered nanomaterials.

### [Project summary](#)



## **Lightening the impact of older heavy-duty vehicles (LIFE CAT4HEAVY)**

Public authorities across Europe would welcome a catalyst-based emission control system that can cost-effectively bring older heavy-duty vehicles up to Euro VI standard. The system being tested by this project promises to significantly reduce air pollutant and greenhouse gas emissions (by at least 30% per vehicle) as well as cutting consumption of critical raw materials (such as platinum group metals) and ammonia. The new system will be tested on the vehicle fleets of the Municipality of Galatsi in Greece and two project partners in Italy – the city of Mantua and port of Genoa – to prove that the Euro VI standard can be met at significantly reduced cost.

[Project summary](#)

## **Purifying wastewater from the citrus fruit industry (LIFE PureAgroH2O)**

The Benaki Phytopathological Institute in Athens is eliminating contaminants out of effluents discharged by the fruit industry. As part of the LIFE PureAgroH2O project, this government research institute is overseeing the combined deployment of technologies including nanofiltration and photocatalysis in an agricultural cooperative in Zagora, Greece. The field demonstration will allow researchers to benchmark the environmental performance of their water purification process with that of conventional wastewater treatment. The University of Almeria will install a similar pre-industrial unit in a citrus farm in Spain to pave the way for transferring the technology and commercialising it.

[Project summary](#)

*LIFE Climate Change Adaptation (1 project – 1.3 million)*

## **Forecasting and combatting heat in cities (LIFE ASTI)**

Cities are often significantly warmer than surrounding rural areas, a phenomenon known as the urban heat island effect. This is becoming more severe because of rising global temperatures and urbanisation. It is especially problematic for the elderly and those with respiratory and other medical conditions. LIFE ASTI is developing forecasting systems in Thessaloniki and Rome that will alert the public to peak conditions via ICT applications. It will also model the impact of likely climate change scenarios on the urban island effect and evaluate the potential of green infrastructure, such as garden roofs and ventilation areas, for combating it. These models can be applied to other European cities facing similar climate-related challenges.

[Project summary](#)

*LIFE Climate Change Mitigation (1 project – 2.9 million)*

## **Real-time reporting for low carbon crops (LIFE ClimaMed)**

The Intergovernmental Panel on Climate Change recognises that the most effective methods of calculating greenhouse gas emissions and soil organic

content of fields involve on-site measurements and simulations. Greece and other Mediterranean countries are currently using less accurate methods. LIFE ClimaMed will collect data from farmland in real-time to develop protocols for measuring greenhouse gas emissions and soil organic content. This knowledge will be used to assess the impact on emissions and soil of farming methods for the most important Mediterranean crops (including olives, grapes, pistachios and cereals) and ultimately develop a certification scheme for produce with a low carbon footprint. Results will be fed into draft legislation for Greece, Cyprus, Italy and Spain.

### [Project summary](#)

*LIFE Climate Governance & Information (2 projects – 5.5 million)*

#### **Managing urban green areas to tackle climate change (LIFE GrIn)**

Urban green areas help improve air quality, enhance the insulation of buildings and form a natural ecosystem that is able to improve the management of flash floods. LIFE GrIn is supporting such areas by developing integrated policies for their management in two demonstration Greek towns. This will lead to guidelines and best practices that can be replicated in other towns and cities in Greece. The project will show how urban green areas can capture more atmospheric carbon dioxide, to help mitigate climate change, while reducing time and money spent on upkeep of parks and gardens.

### [Project summary](#)

#### **Restoring trust in vehicle emissions measurement (MILE21-LIFE)**

Discrepancies between declared carbon dioxide emission rates for new vehicles tested in laboratories and their actual rates on the road are undermining consumer trust. This is potentially slowing down the uptake of low-carbon and fuel-efficient vehicles. The MILE21 project will help consumers make better informed choices when purchasing new vehicles by giving them more reliable information. It will devise ways for storing emission data from on-board measuring devices in the vehicle itself and for harmonising different sources of data. The results will be made available online to consumers and those engaged in public procurement. Consumer organisations from Belgium, Netherlands, Portugal, Spain and Italy will be involved in establishing this new pan-European service.

### [Project summary](#)

#### **SPAIN (ES) (32 projects – 64.7 million)**

*LIFE Nature & Biodiversity (2 projects – 5.4 million)*

#### **Combining wetland conservation with salt production (LIFE-SALINAS)**

Salinas de San Pedro del Pinatar is the most important wetland in Murcia for waterfowl and seabirds, including 32 protected species that use it for wintering, breeding or resting during migration. LIFE-SALINAS is taking urgent action to address the main threats in this site, where conservation is

closely linked to salt production. The project will increase the bird nesting area, control invasive plant and mammal species, improve water circulation, halt dune erosion, and establish stewardship agreements to ensure ongoing conservation coupled with the production of certified 'environmentally-friendly' salt.

[Project summary](#)

### **Stopping the spread of pampas grass (LIFE STOP Cortaderia)**

Pampas grass is a very aggressive invasive species that is harming habitats, native species and the amenity value of coastal land around the 'Atlantic arc' from France to Portugal. LIFE STOP Cortaderia is coordinating actions against the invader across this whole transnational area and conducting specific actions in Cantabria, where pampas grass is most widespread. These actions include removing the species from ecologically-sensitive parts of coastal Natura 2000 network sites, preventing its spread to relatively unaffected areas, and evaluating new methods for its control.

[Project summary](#)

*LIFE Environment & Resource Efficiency (23 projects – 43.0 million)*

### **Using an aluminium by-product to line furnaces (LIFE BAUXAL-II)**

Refractory or heat-resistant products are vital for the lining of furnaces in some energy-intensive industries, such as aluminium or steel-making. But most refractory products are made from materials imported from China, such as bauxite. LIFE BAUXAL-II will show that this can be substituted by a secondary raw material that arises in the recycling of salt slag – the residue of salt used in aluminium refining. The company Befesa will define the market and a business plan for its process (BAUXAL). In the longer-term it expects to be able to reprocess all 600 000 tonnes per year of its salt slag, reducing EU imports of refractory-grade bauxite by 43%.

[Project summary](#)

### **Getting more out of old vehicles (LIFE PST-SORT)**

When vehicles reach the end of their useful life, they are dismantled. Around a quarter of the vehicle is a hard-to-recycle solid waste mixture known as automotive shredder residue (ASR), which often contains hazardous material. 75% of ASR ends up in landfill. More of this needs to be recovered and reused to meet EU recycling targets for end-of-life vehicles. LIFE PST-SORT will demonstrate at full-scale an innovative post-shredding technology that can recover secondary raw materials from ASR, with the goal of significantly reducing landfill. Most of the residue will be recycled with some converted into refuse-derived fuel. The project will evaluate performance and potential for replication and draw up a business plan for the European market.

[Project summary](#)

### **Sourcing high-value products from olive oil waste (LIFE OLEA REGENERA)**

When olive oil is pressed, nearly 80% of the olive is left as waste. In Spain, the world's largest olive oil producer, this material is transported to secondary extraction factories called 'orujeiras' where it is dried in an energy-intensive process and made into low-quality olive pomace oil or biomass. LIFE OLEA REGENERA will build an industrial plant to produce new by-products from olive oil extraction waste. These can be transformed into high-value products such as animal feed and bio-stimulants to improve plant growth. The new process will reduce waste, energy use and air pollution. The liquid by-product will be tested in olive groves in Portugal as well as Spain.

[Project summary](#)

### **Making sustainable biopesticides from agri-waste (LIFE WASTE4GREEN)**

Pesticides play a key role in agriculture. They can also have negative impacts on soil and water quality, biodiversity and human health. LIFE WASTE4GREEN will test the effectiveness of two biopesticides made from agro-waste in protecting stone fruit crops. Trials will focus on showing that how that the new formulates are effective against the pests and target diseases of stone fruit trees and that they can be used for other crops and in other EU countries. The latter stages of the project will focus on commercialisation of the new biopesticides.

[Project summary](#)

### **Reducing the environmental impact of fish farms (LIFE AQUAPEF)**

Fish farms help meet rising demand for fish and fish products, but they can also negatively impact water quality, seabed life and the health of wild fish populations. This project is introducing the EU's Product Environmental Footprint (PEF) to aquaculture to alleviate these problems. This is a multi-criteria measure of the environmental performance of a good or service throughout its life-cycle. LIFE AQUAPEF will work with the sector to collect data and develop protocols. Trials at three Mediterranean fish farms will show it is possible to reduce the overall environmental impact of aquaculture by 10% using PEF. Further trials in Greece, Spain, Italy, UK and Ireland are planned and results will be shared throughout the industry.

[Project summary](#)

### **New techniques to improve farm soils (LIFE AgRemS03il)**

Pesticide use in farming can lead to the presence in soils of persistent compounds with undesirable health and environmental impacts. A new technique for remediating soils combines on-site decontamination with sunlight and ozone. Tests will take place on experimental plots and at full-scale on two commercial farms with drip irrigation systems. The new technique is expected to reduce the presence of pesticides in soils by 75%. Results will be widely shared with potential users, stakeholders and policymakers.

[Project summary](#)

## **Smarter ways to spray pesticides (PERFECT LIFE)**

Pesticide 'spray drift' is a major source of diffuse environmental contamination from crop farming. PERFECT LIFE will road test new methods of reducing its impact. These include tools for optimal volume rate adjustment, to reduce the amount of pesticide sprayed, as well as tools for drift reduction. Trials will take place in citrus groves and vineyards in Spain (Catalonia and Valencia), France (Languedoc) and Italy (Piedmont). The project will also modify an atmospheric dioxin detector developed by an earlier LIFE project, converting it to measure the impact of spray drift in real agricultural conditions. PERFECT LIFE will write a business plan for this new technology.

[Project summary](#)

## **Recovering precious metals from electronic waste (LIFE BIOTAWEE)**

Valuable metals in electrical and electronic waste often end up incinerated. LIFE BIOTAWEE will pilot a new technology for recovering gold, silver, copper and platinum from printed circuit boards in such waste. The two-stage 'bioleaching' process will combine aerobic and anaerobic treatment and produce methane which can be used as a source of power. The new solution is expected to reduce energy consumption and processing costs. The project will also evaluate whether two-stage bioleaching can be used to cost-effectively process other waste streams with a high plastic content (such as batteries and end-of-life vehicles).

[Project summary](#)

## **Reusing spent waste from the steel industry (LIFE 5REFRACT)**

Refractory or heat-resistant materials used to line furnaces in cement, steel and glass production can be hard to re-use or recycle. LIFE 5REFRACT will develop strategies, based on the 5R approach (reduce-reuse-remanufacture-recycle-re-educate), for the management of the refractory waste generated by the steel sector. As a result, new furnace linings will be produced that are made of 70% reprocessed material from spent refractories. The steel producer Sidenor plans to apply the results in all its Spanish facilities, putting nearly 10 000 tonnes of refractory waste to good use.

[Project summary](#)

## **Creating a circular economy for waste plastic film (LIFE4FILM)**

The LIFE4FILM project tackles the problem of waste management within the plastic industry. Polyethylene films make up more than a third of the plastic waste generated in the EU each year, more of which currently enters landfills than is recycled. By developing and implementing new polyethylene recycling technologies, the project will reduce the amount of landfilled plastic waste, increase the rate at which it is recycled, and incorporate the recycled material into new plastic products.

[Project summary](#)

## **Reducing water pollution after forest fires (LIFE REFOREST)**

Forest fires can be devastating and have long-term effects through the run-off from scorched areas, which can pollute water bodies. Typically, burned areas are treated with mulched straw and wood chip to reduce run-off and promote soil regeneration. LIFE REFOREST will experiment with an alternative in north-west Spain and northern Portugal – a soil dressing derived from organic waste treated with fungal species – which promises better water retention, more rapid soil regeneration and lower cost than typical treatments. The project will also promote its methods to more than 90 000 forest owners in Europe and recommend post-fire remediation strategies to local, regional and national authorities.

[Project summary](#)

## **Pioneering micro-hydropower in cities (LIFE NEXUS)**

As more and more people live in cities, the demand for water and energy continues to rise. What if water treatment networks could become a source of renewable energy? LIFE NEXUS will show the potential of micro-hydropower systems to recover the untapped energy deriving from abundant pressure (water head) or kinetic energy (water flow) in existing water networks. The technology will be used to meet all the energy needs of a drinking water treatment plant in León, Spain, replacing fossil fuels and contributing to a significant reduction in water loss through leakages. The project will also assess the potential for micro-hydropower across Europe, determining the minimum plant capacity with a payback time of less than 10 years in different countries.

[Project summary](#)

## **Eradicating long-lasting pesticide pollution (LIFE SURFING)**

Regional authorities in Aragon, Spain, are working to eradicate pervasive pollution from Lindane, a pesticide used extensively in Europe during the last century. The LIFE SURFING project will combine existing techniques that use surfactant chemistry and oxidation processes to extract Lindane residues from even the smallest fractures in rocks. The process is set to eradicate pesticide residues in an aquifer along the river Gallego, thus addressing concerns about public health and the environment. The project aims to establish replicable and transferable practices in view of implementing them in other sites contaminated by pesticides.

[Project summary](#)

## **Getting useful products out of olive brine (LIFE SOLIEVA)**

Brine released from the production of table olives is contaminating soils and water bodies around the Mediterranean. The Fundació CTM Centre Tecnològic in Barcelona is developing more efficient ways to treat this waste. As part of the LIFE SOLIEVA project, it will demonstrate technologies capable of cleaning contaminants out of wastewater and recycling them. One of the by-products, polyphenols, can be reused in the food industry. The project will

reduce water and soil pollution, speed up waste management, cut water consumption by 95% and work towards greater circularity in food production.

### [Project summary](#)

#### **A circular process for vegan-organic-recycled footwear (LIFE REWEART)**

The European footwear industry needs to become more sustainable, resource efficient, and environmentally transparent. Over 70% of footwear made in the EU comes from Spain, Italy and Romania. The LIFE REWEART project gives the Spanish shoe company Vesica Piscis the chance to work with partners in all three countries to improve industrial design and assembly so that more secondary materials can be incorporated into shoe manufacturing. Process improvements will also cut water use, carbon dioxide emissions and costs. Methods of evaluating the environmental impact of shoes will be shared with manufacturers, consumers and footwear brand owners.

### [Project summary](#)

#### **Helping mining reuse its wastewater (LIFE REMINE-WATER)**

New water treatment technologies could purify brine effluents from the mining and metallurgy sector, making 90% of its wastewater reusable again for further industrial operations. LIFE REMINE-WATER will design, build and operate brine treatment technologies in facilities used for processing minerals. It will reduce the water consumption and greenhouse gas emissions of mining activities. Its wastewater purification process will also tackle chemical contaminants in these effluents by extracting acids and toxic metals and offering them a second life as set out in the EU circular economy strategy.

### [Project summary](#)

#### **Developing novel materials for energy-efficient buildings (LIFE ReNaturalNZEB)**

With 35% of EU greenhouse gases emitted by constructing and living in buildings, there is a high demand for energy-efficient building methods and environmentally-sustainable construction materials. The LIFE ReNaturalNZEB project will show that components sourced from natural and recycled substances can cut both the cost and carbon footprint of new and renovated buildings. In addition to reducing greenhouse gases embedded in construction materials by 60%, the new lightweight structures could cut indoor energy demand by up to 80%. As part of the project, 10 prototype technologies will be built and field tested in Portugal and Spain.

### [Project summary](#)

#### **New wastewater treatment in the food and drink sector (LIFE Multi-AD 4 AgroSMEs)**

Leaner and cheaper anaerobic digestion reactors could soon help small and medium-sized companies in the food and drink sector treat biodegradable



organic matter in their wastewater. The LIFE Multi-AD 4 AgroSMEs project is demonstrating technology that could break down these contaminants before they leave the factory by turning them into biogas. Project partners are scaling-down the size of existing reactors to meet the needs of most companies in the sector. The project will demonstrate the design in a commercial winery and prepare the technology for vegetable processing plants in Navarra.

[Project summary](#)

### **Cutting emerging contaminants in wastewater (LIFE GREEN SEWER)**

Wastewater treatment is made more difficult through the presence of pathogenic microorganisms and emerging contaminants in effluent. LIFE GREEN SEWER will test a new secondary treatment process using ultrafiltration via double membranes at wastewater treatment plants in Spain and Portugal. This is expected to drastically reduce the presence of pathogens and emerging contaminants, such as pesticide residues. The process will also be capable of recovering biogas and reusable water from wastewater, in line with circular economy principles, while cutting energy consumption and water losses. Results from the two pilot sites will be used to draft a replicability and transferability guide and a business plan.

[Project summary](#)

### **Cleaner bathing water in cities (LIFE iBATHWATER)**

Wastewater from towns and cities can pollute nearby lakes, rivers and coasts. To reduce this impact, the iBATHWATER project's open software platform will help monitor pollution, treat discharged water and coordinate tasks involved in sewage management. Project partners will combine information from existing infrastructure in Barcelona and Berlin with computer models and data on water quality. Insight from this technology will notably support the objectives of the EU Bathing Water Directive, by keeping water bodies in and around towns and cities clean and safe for swimming.

[Project summary](#)

### **Nanobubbles add fizz to wastewater treatment (LIFE NANOBUBBLES)**

Aeration promotes the biodegradation of contaminants in wastewater. Use in aeration of nanobubbles, or bubbles millions of times smaller than normal bubbles in water, offers a potentially superior alternative to standard aeration. LIFE NANOBUBBLES will demonstrate the technology, with expected significant energy and cost savings compared to standard wastewater treatment. It should also halve the amount of sewage sludge produced by traditional aerobic processes. The project will develop protocols for use and a business plan as a basis for commercialisation and wider take-up of the technology.

[Project summary](#)

### **Creating high-value products from old car bumpers (LIFE CIRC-ELV)**

More plastic needs to be recovered from the automotive sector. A research centre in Spain will recycle polypropylene in end-of-life cars and reuse the materials extracted from old bumpers and fuel deposits to build new products. The technique involves innovative methods to streamline the dismantling and sorting of plastic components. Project partners will also test pre-treatments and compounding processes to reduce the costs of recycling them and improve their chemical properties and market value.

[Project summary](#)

### **Using livestock manure to fertilise fruit farms (LIFE AGRICLOSE)**

Pig farming generates vast volumes of manure. When stored it releases ammonia, methane and nitrous oxide, which creates a management burden for farmers. LIFE AGRICLOSE will show how liquid and solid manure can be efficiently used as a fertiliser on arable and fruit farms and will test the risk of antibiotic-resistant genes migrating from slurry to soils and crops. Combining these approaches with precision agriculture should improve soil and environmental quality. The project will work primarily with pig farms in Spain (Catalonia) and Italy (Lombardy and Piedmont), but its outcomes could also apply to cattle farms.

[Project summary](#)

*LIFE Environmental Governance & Information (2 projects – 5.1 million)*

### **Rapid response to invaders in freshwater ecosystems (LIFE INVASAQUA)**

The natural diversity in rivers, lakes and estuaries in Spain and Portugal is seriously threatened by invasive alien species, such as the Louisiana crawfish (*Procambarus clarkii*) and common carp (*Cyprinus carpio*). Invasive alien species are mainly spread by recreational fisheries, water drainage transfers and trade in ornamental plants and animals, which are all economically important. The project will increase public and stakeholder awareness of the dangers posed by these species in the Iberian Peninsula and set up an early warning and rapid response system for invaders in freshwater and estuarine habitats. This will involve creating synergies between scientists, NGOs and decision-makers, and training students, teachers and those who work on and use rivers and estuaries to be aware of and respond to the threat. Activities will reach over 200 000 people and lead to a 10% increase in awareness of invasive alien species.

[Project summary](#)

### **Fighting environmental crime in Spain and Portugal (Life+ Nature Guardians)**

Environmental crime has become one of the world's most profitable organised criminal activities, and yet these crimes lead to very few convictions. There is a lack of awareness among certain sectors of society of the importance of protecting their natural heritage. The project aims to boost environmental conservation by improving the effectiveness of actions against environmental crimes in Spain, Portugal and other EU countries. It will also introduce new enforcement measures and enhance legal, investigative and informative

measures to raise awareness of these criminal actions and their impact.

### [Project summary](#)

*LIFE Climate Change Adaptation (4 projects – 10.0 million)*

#### **Making olives and almonds more resistant to disease (LIFE RESILIENCE)**

The bacterium *Xylella fastidiosa* can spread rapidly and cause disease in trees and woody crops. In 2013, more than one million olive trees developed olive quick decline syndrome as a result of the bacterium, causing major economic losses. Preliminary research has identified regions with temperate winters to be most at risk of pathogen proliferation, and with current climate change projections, the problem is set to get worse. LIFE RESILIENCE will show that crossbreeding can produce resistant varieties of olive plants, leading to new highly marketable products. Without affecting yield, the project will demonstrate the effectiveness of a range of sustainable measures for olive and almond growers in farms in Italy, Portugal and Spain, and then replicate these elsewhere in Europe. It will also produce a handbook for successful transfer of these best practices to other crops such as grapevines and citrus trees.

### [Project summary](#)

#### **Adapting livestock farming to climate change (LIFE LiveAdapt)**

Climate change will have a particularly adverse impact on the agricultural sector in southern Europe, affecting animal wellbeing and the quality of pasture. The LIFE LiveAdapt project, however, will validate a range of adaptation best practices that improve water, soil and livestock management on pilot farms in Spain, Portugal and France. The result will be five business models for extensive livestock farming that are adapted to climate change and lead to high-quality food products that have an added value on the market. Online learning resources will be set up to engage farmers.

### [Project summary](#)

#### **Taking the right decisions for resilient forests (LIFE RESILIENT FORESTS)**

Forests help protect the quality of soils and regulate water levels, but they are particularly at risk from climate change impacts. LIFE RESILIENT FORESTS is developing a decision-support system to help forest managers introduce adaptation measures. Demonstrations of the tool will take place at a large and small-scale in Germany, Portugal and Spain ahead of replication across Europe. The project will encourage stakeholder feedback at each location to improve the decision-support system. Fire hazards are expected to be reduced by a nearly a third and forest areas will become 25% more resilient overall.

### [Project summary](#)

#### **Less climate impacts in buildings for young and old (LIFE-myBUILDINGisGREEN)**

Schools, colleges and social centres must especially adapt to climate change

given the vulnerability of young people and the elderly to heat waves and other likely climatic impacts. LIFE-myBUILDINGisGREEN addresses this need by adding nature-based solutions to three such buildings in Spain. Cost-effective measures include extending green areas, collecting rainfall and reducing greenhouse gas emissions. The knowledge and good practice acquired by the project will be used to promote good governance among regional authorities and in the building sector. It will also help to establish common EU policy on adaptation to climate change in this area.

### [Project summary](#)

*LIFE Climate Change Mitigation (1 project – 1.3 million)*

#### **New life out of dead wood (LIGNOBIOLIFE)**

Hot dry areas, particularly in Mediterranean countries, are becoming more susceptible to forest fires, as climate change increases the likelihood of droughts and heat waves. The operation to remove dead wood and other combustible material from forests is costly and adds to the problem. Rather than burning such material, which leads to the release of harmful greenhouse gas emissions, LIGNOBIOLIFE will show on an industrial scale the benefits of producing bioproducts, including wood vinegar as a green herbicide, biochar to fix carbon in soil and bio-asphalt for paths and roads. Successful trials will lead to a viable business plan for installing bio-refineries in three sites in Portugal and Spain.

### [Project summary](#)

#### **FRANCE (FR) (8 projects – 33.8 million)**

*LIFE Nature & Biodiversity (4 projects – 14.8 million)*

#### **Restoring heath and bog habitats in Normandy (LIFE Avaloirs)**

Wet and dry heath and bog habitats were once widespread in the hills of the Normandy-Maine Regional Nature Park in France. However, there has been a drastic decline in these open habitats due to afforestation and the intensification of agriculture. To restore at least 120 hectares of remnant heath, bog and scree habitats, along with abandoned hay meadows, LIFE Avaloirs will clear overgrowth and introduce mowing. This will also conserve the species these habitats support, including the hen harrier (*Circus cyaneus*) and European nightjar (*Caprimulgus europaeus*).

### [Project summary](#)

#### **Loire wildlife and salt producers in symbiosis (LIFE SALLINA)**

Human activities have long contributed to the maintenance of habitats around salt marshes, so birds and other wildlife suffers when traditional salt production is abandoned or the industry is intensified. LIFE SALLINA is striking agreements with salt producers and landowners to restore nearly 400 hectares of salt marshes on the French Atlantic Coast and promote long-term conservation management. This will involve controlling invasive plant and

mammal species, including sea myrtle, muskrats and coypu, creating islets and other habitat features, and improving water quality.

### [Project summary](#)

#### **Saving the white-headed duck from extinction (Life Oxyura)**

The white-headed duck (*Oxyura leucocephala*) is endangered by hybridisation with the ruddy duck (*Oxyura jamaicensis*), a species introduced from North America. Life Oxyura plans the eradication of the non-native ruddy duck in France by 2023, using a network of observers, rapid interventions and an intensified use of efficient culling measures. Duck breeders will also be made aware of their commitments under the EU Regulation on Invasive Alien Species, with a view to reducing the number of captive ruddy ducks that can potentially escape into the wild.

### [Project summary](#)

#### **Protecting biodiversity in Overseas France (LIFE BIODIV'OM)**

Biodiversity is seriously threatened in five French territories remote from Europe – French Guiana, Martinique, Mayotte, La Réunion and Saint-Martin. Pressures include population growth, urban development, forestry, mining and mass tourism. Climate change and invasive alien species are also affecting local fauna and flora. This project is finding sustainable ways of dealing with the dramatic loss of natural habitats and the species they support. Central to this is the conservation of five endemic species: the Reunion cuckooshrike (*Coracina newtoni*), the Madagascar pond heron (*Ardeola idea*), the Atlantic goliath grouper (*Epinephelus itajara*), the Nassau grouper (*Epinephelus striatus*) and the white-breasted thrasher (*Ramphocinclus brachyurus*).

### [Project summary](#)

*LIFE Environment & Resource Efficiency (3 projects – 14.8 million)*

#### **Reducing noise and turbidity from coastal construction (LIFE-AGESCIC)**

EU marine policy is focused on achieving good environmental status for marine waters. Noise and turbidity caused by coastal construction need to be reduced in order to reach this goal. France's Naval Group will sea test three new technologies that can help with this aim. These include an underwater noise and turbidity containment system and a buoy that monitors levels of these pollutants, as well as a system for attracting juvenile fish to safe and suitable zones where they can develop in peace. A twentyfold increase in the diversity and abundance of fish is expected in the test zone.

### [Project summary](#)

#### **Applying new technology to improve indoor air quality (LIFE SMART IN'AIR)**

Hundreds of thousands of people die prematurely every year in the EU because of poor air quality. Air pollution inside buildings contributes significantly

to this, but improving indoor air quality is a major challenge. LIFE SMART IN'AIR aims to help by means of a technological innovation – miniaturising technology that is used to monitor levels of two of the most harmful indoor pollutants, BTEX (benzenes etc.) and formaldehyde. The project team will define best practices for reducing levels of these substances based on its analysis. It will also work towards the commercialisation of its new technology and draft a White Paper to enhance EU legislation and standardisation on indoor air quality.

[Project summary](#)

### **Tackling rainwater runoff in Paris (LIFE ADSORB)**

Water quality is a key environmental challenge for European cities. In particular, the runoff water from high-traffic roads contributes to heavy pollutant loads and is hard to treat. At a demonstration site in the famous park, the Bois de Boulogne, LIFE ADSORB will test new ways of removing pollutants from storm water runoff. This is expected to reduce by 95% the concentration of mineral and organic micropollutants. The new solution can be adapted to existing infrastructure and replicated in both densely populated and rural areas.

[Project summary](#)

*LIFE Climate Change Adaptation (1 project – 4.2 million)*

### **Adapting the management of natural areas (LIFE #CC #Naturadapt)**

While the impact of climate change is globally recognised, managers of nature conservation areas rarely take into account the effects of climate change in their action plans. Awareness of this issue is particularly low in France. To address this problem, this LIFE project is supporting a community of practitioners with a common approach. This will involve sharing new tools and services that can be used to conduct climate change vulnerability assessments and draw up adaptation plans for nature areas. The ultimate outcome will be the first knowledge database on required adaptations in the management of natural areas in response to climate change. This will enable managers of conservation areas in France and across Europe to make a real contribution to adaptation plans.

[Project summary](#)

### **CROATIA (HR) (1 project – 1.9 million)**

*LIFE Nature & Biodiversity (1 project – 1.9 million)*

### **Establishing protected areas for oceanic birds (LIFE Artina)**

Most EU countries with oceanic birds have designated offshore special protection areas (SPAs), but Croatia does not yet have all the data required. LIFE Artina is helping to achieve this by drawing up a list of proposed marine SPAs and suggested management measures for them. One of the project's goals is to identify marine SPAs in southern Croatia for the yelkouan

shearwater (*Puffinus yelkouan*) and Audouin's gull (*Larus audouinii*) – which both have unfavourable or declining conservation status – and for Scopoli's shearwater (*Calonectris diomedea*). By understanding and assessing the main threats affecting oceanic bird populations on land and at sea in the project area, the project will be able to map out actions to mitigate them.

[Project summary](#)

## **ITALY (IT) (30 projects – 73.5 million)**

*LIFE Nature & Biodiversity (7 projects – 17.7 million)*

### **Road safety for large carnivores (LIFE SAFE-CROSSING)**

Large carnivores are severely threatened by road infrastructure, due to direct mortality caused by vehicle collisions and the barrier effect restricting the movement of populations. LIFE SAFE-CROSSING will demonstrate animal-vehicle collision prevention systems in Greece, Italy, Romania and Spain. These are designed to significantly reduce the road mortality of brown bears, lynx and wolves. An awareness campaign will encourage drivers to look out for large carnivores and reduce their speed. Improved road-crossing structures will enhance the connectivity of populations within nature conservation areas in the four countries.

[Project summary](#)

### **Participatory agroforestry in north-east Italy (LIFE PALU QdP)**

Forestation, land abandonment and intensive agriculture are destroying the characteristic small meadows and hedges of Palù del Quartier del Piave in the Veneto region. LIFE PALU QdP will address these pressures through sustainable agroforestry and traditional meadow management practices, supported by local landowners. It will also re-connect water flows in the area's extensive canal network. The project targets protected amphibian, reptile, butterfly and plant species, and two meadow habitats listed in the EU Habitats Directive.

[Project summary](#)

### **Maintaining the integrity of freshwater trout populations (LIFE Nat.Sal.Mo)**

The freshwater trout *Salmo trutta macrostigma* is threatened by hybridisation with introduced Atlantic brown trout (*Salmo trutta*) in the river basins of Molise in southern Italy. This project is acting to recover the genetic integrity of the native freshwater trout. To do so, it will improve river connectivity and the available spawning area, optimise protocols for semen storage to ensure high genetic variability during artificial breeding. The project will also update fishing regulations to reduce Atlantic brown trout numbers, and establish participatory tools to make rivers better managed. The methods will be replicated in Romania and two other EU countries, with different fish species.

[Project summary](#)



## **Expanding the range of the lesser kestrel (LIFE FALKON)**

The breeding range of the lesser kestrel (*Falco naumanni*) in the central-eastern Mediterranean area is shifting northwards due to climate change. LIFE FALKON is fostering resilience by improving the conservation status of the population at the north-eastern edge of its breeding range in Italy and Greece. The project will provide increased nesting opportunities, including nest boxes and towers, promote favourable rural development and building renovation practices, and establish a network of conservationists focused on populations crucial for the species' northward breeding expansion.

[Project summary](#)

## **Taking endangered orchid communities off the critical list (LIFEorchids)**

Orchid-rich semi-natural grasslands are among the most threatened plant communities in Europe, due to their inherent sensitivity to land use changes. LIFEorchids is expanding the area of this beautiful but fragile habitat in two Regional Parks in north-western Italy (Portofino in Liguria, and Po and Orba in Piedmont). This will be achieved by reinforcing and reintroducing orchid species, shrub and tree clearance, eliminating invasive alien species, and implementing land stewardship agreements. LIFEorchids will also establish orchid micro-reserves, and produce new propagation and translocation protocols. The methods will be replicated in the Czech Republic. Training courses and awareness-raising activities will take place in both countries.

[Project summary](#)

## **Saving Mediterranean Forests from a beetle invasion (LIFE SAMFIX)**

The first severe European outbreak of Asian ambrosia beetle (*Xylosandrus*) in natural habitats occurred in Circeo National Park in Italy. Two species of the beetle were discovered, along with their associated symbiotic fungi, attacking trees and shrubs and degrading habitats in conservation areas. To prevent the spread of this invasive non-native insect, LIFE SAMFIX will practice selective eradication, establish early warning and rapid response systems, make forestry professionals and park visitors aware of the beetle, and do citizen science. Methods will be replicated in other Italian nature reserves susceptible to this beetle invasion.

[Project summary](#)

## **Protecting biodiversity in abandoned agricultural areas (LIFE GREENCHANGE)**

LIFE GREENCHANGE is protecting biodiversity and enhance agro-ecosystems in Agro Pontino in Italy and in rural areas of Malta. The project addresses problems arising from the fragmentation and abandonment of agricultural land in both countries, by establishing green infrastructure that makes ecosystems function properly and providing corridors for species linked to agricultural areas. This means restoring wind breaks, canals, traditional stone walls, and buffer strips in fields, through the active participation of farmers who will receive targeted agro-environmental payments promoted by the project.

## [Project summary](#)

*LIFE Environment & Resource Efficiency (7 projects – 17.0 million)*

### **Making paints without petrochemicals (LIFE-BIOPAINT)**

Harmful petrochemical derivatives are still widely used in the manufacture of paints and coatings. LIFE-BIOPAINT is going to demonstrate a safe, sustainable and innovative continuous process for producing novel bio-based paints manufactured without petrochemicals at a site in Parona, Lombardy. This will avoid emissions of volatile organic compounds and greenhouse gases, eliminate waste, reduce energy consumption and deliver improvements in product quality in the wood coating sector. The project will also prove that the new closed-loop process is ready to be scaled up to commercial levels of production.

## [Project summary](#)

### **Cultivating green and healthy products with olive oil wastewater (MEWLIFE)**

MEWLIFE seeks to turn waste vegetation waters generated during olive oil production into a resource. It will pilot the use of pre-concentrated wastewaters as a carbon source for growing microalgae by means of a cultivation system that integrates two techniques: phototrophic cultivation (obtaining energy from sunlight) and heterotrophic cultivation (using organic molecules for nutrition). It is hoped that this will cut the cost of large-scale microalgae cultivation. The dried microalgal biomass will be assessed to see whether it can be used in nutraceuticals (products derived from food sources that can provide extra health benefits) or to produce bio-plastics. Substituting microalgae for crops currently used to make biopolymers could have positive effects on food security.

## [Project summary](#)

### **Electric car-sharing for smaller cities (I-SharE LIFE)**

To reduce greenhouse gas emissions and harmful pollutants from road transport, I-SharE LIFE is tailoring car-sharing services to smaller cities. As part of these efforts, Ferrovie Nord Milano, one of Italy's largest railway operators, is taking car-sharing models that have worked well in bustling metropolises and adapting them to Bergamo, Como, Bollate, Busto Arsizio in Italy and Osijek in Croatia – all cities with fewer than 120 000 inhabitants. Their strategy includes boosting market uptake with information campaigns tailored to potential new participants. Results will be shared with an additional 34 communities across northern Italy and western Croatia in view of cutting air pollution, traffic noise and congestion across Europe.

## [Project summary](#)

### **Growing plants with dredged sediment (LIFE AGRISED)**

Millions of tonnes of sediment are dredged each year in the EU to counter floods and keep waterways navigable. A supplier for plant nurseries in

Pistoia, Italy, is using sediment dredged from European rivers and seas to grow ornamental plants and rehabilitate degraded land for agriculture. The LIFE AGRISED project is notably rolling out a chemical process pioneered in an earlier LIFE project ([New Life](#)) to incorporate sediment into new fertile soils. Results will feed into an economic evaluation and guidelines for policymakers to facilitate the market entry of these sediment-based products for growing plants.

[Project summary](#)

### **Using poultry manure to improve soil quality (LIFE POREM)**

Soils in arid and semi-arid areas are subject to intense degradation. The loss of organic matter reduces biological activity and fertility. This leads to soil erosion in farming areas, marginalisation and abandonment of agricultural land, and soil sealing. LIFE POREM is testing the use of treated manure from poultry farms as a bioactivator to improve soil fertility and plant yield and reduce ammonia emissions. As well as assessing results from experimental plots in southern Spain, Italy and the Czech Republic, it will produce a guide to soil restoration using poultry manure aimed at public administrations responsible for the health of our soils.

[Project summary](#)

### **Turning dredged sediment into a substitute for peat moss (LIFE SUBSED)**

To stop the degradation of European peatlands, horticulturists in Italy are substituting peat moss used in plant nurseries with sediments dredged from ports. At present, peat moss is the main ingredient in the growing medium that feeds potted plants and trees. Demand for it is steadily increasing, and growers see previously-tested substitutes as ineffective. The LIFE SUBSED project will prove that high-quality food and plants can be grown in nurseries using dredged sediment and is investigating the business case for its wider adoption. This environmentally sustainable alternative to peat moss could reduce the impact of horticulture on natural habitats, and cut carbon dioxide emissions released when harvesting it.

[Project summary](#)

### **Putting wine waste back into the land (LIFE ZEOWINE)**

Italian scientists are developing a natural soil additive to preserve the quality of agricultural land. The product contains organic waste from wine production and microporous minerals known as zeolites. As part of the ZEOWINE project, the Institute of Ecosystem Study in Pisa, Italy, is helping organic and biodynamic vineyards produce the additive and apply it to their fields in efforts to loosen soil structure, improve water retention, add organic matter and foster subsurface microbial life. The results are expected to boost yields and improve the quality of grapes, while producing the additive could save winemakers energy by recycling organic waste locally.

[Project summary](#)

*LIFE Environmental Governance & Information (6 projects – 11.6 million)*

### **Using data to evaluate the impact of chemical substances (LIFE CONCERT REACH)**

REACH is an EU Regulation designed to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. Since May 2018, a large amount of REACH experimental data has become available. LIFE CONCERT REACH aims to make use of this resource to create reliable environmental indicators to better assess the impact of substances. In particular, the project will set up a network of systems that integrates data on registered chemicals with computer processing (in-silico) tools, applying innovative non-testing methods. It will also produce case studies on chemical substances that will be of practical use to industry.

[Project summary](#)

### **Promoting sustainable use of Mediterranean soil resources (SOIL4LIFE)**

Soil is a limited resource, essential for our wellbeing and important ecosystem functions. However, the importance of soil is not widely appreciated. SOIL4LIFE will apply the FAO's voluntary guidelines for sustainable soil management in a Mediterranean context (Italy, France, Croatia) and seeks to persuade around 5 000 farmers to adopt these guidelines. It will also promote the importance of sustainable and efficient use of soil to the general public through a media campaign reaching 2 million people. European institutions and Member States will be informed of the need to adopt appropriate regulations, and promote a reduction of land use in urban planning.

[Project summary](#)

### **Exchanging good practice in Natura 2000 forests (GoProFOR LIFE)**

Hundreds of LIFE projects have dealt with forest quality and biodiversity, but more could be done to exchange project experiences and results. The GoProFOR LIFE project will support the exchange of forestry good practices and skills development for managers of nature conservation areas. This will involve the creation of a database of good forest management practice in Natura 2000 network sites for the EU's 20 000 forest technicians. Italy's National Rural Network is expected to adopt the project's guidelines. Increased awareness of best practice will have a positive impact on the conservation of habitats and species.

[Project summary](#)

### **Managing noise pollution from ports (ANCHOR LIFE)**

The European Environment Agency estimates that 65% of EU citizens in major cities are exposed to high noise levels and more than 20% to night-time noise, with adverse health effects. Ports are one of the main sources of urban noise. ANCHOR LIFE will define strategies and best practices for port noise management, focusing on the measurement and mitigation of noise

pollution in five ports located near cities – Livorno, Piombino and Portoferraio (Italy), Patras (Greece) and Melilla (a Spanish exclave in North Africa). It will develop a reward scheme to encourage private sector enterprises in the Italian ports to adopt best practices in noise reduction, set up a ‘smart’ port noise monitoring system in Patras and define port noise assessment guidelines for Melilla.

#### [Project summary](#)

### **Training the food service industry to produce less waste (LIFE FOSTER)**

The food service sector wastes over 10 million tonnes of food every year, around 12% of total EU food waste. Most of this comes from the kitchen (overproduction, trimmings, spoiled or burned items, etc.) rather than the customer. The project will foster a bottom-up approach that focuses on prevention of food waste rather than recycling. This will be achieved through education of trainee chefs, kitchen staff and front-of-house personnel during the placements that form part of their studies. The project will also provide training on food waste to catering and hospitality sector trainers in Italy, France, Spain and Malta so that they teach the subject in their classes and thus reach more students. LIFE FOSTER will encourage chefs and restaurateurs to reduce waste and optimise food storage, including by testing new technology.

#### [Project summary](#)

### **Showing the red card to football match waste (LIFE TACKLE)**

Football generates a huge amount of waste: over 4 tonnes on average for a UEFA tournament match and around 750 000 tonnes each year, according to Europe’s national football associations. To address a widespread lack of waste prevention and recycling strategies, LIFE TACKLE will prepare guidelines for three national football associations – Italy, Romania and Sweden – and develop and implement communication campaigns involving clubs and famous players. This will increase awareness on waste issues among leagues, clubs, supporters, and stadium staff. The project will work with UEFA and another four national associations to share and replicate results.

#### [Project summary](#)

*LIFE Climate Change Adaptation (4 projects – 8.2 million)*

### **Encouraging the switch to climate-resilient crops (GREAT LIFE)**

Warmer and drier weather through climate change is having a negative effect on crop production, especially the growing of maize which consumes large amounts of water. Maize is the main crop grown in Italy’s Po Valley region, but the GREAT LIFE project will show that millet, sorghum and other crops are viable climate-resilient alternatives. It plans to promote the supply and demand of food products based on these crops among public canteens and private consumers in the region. The end result will be greater soil fertility and lower water consumption. The project’s interventions will be replicated in Cyprus, the Czech Republic and Spain.

### [Project summary](#)

#### **A smart approach to monitoring green spaces in cities (LIFE URBANGREEN)**

Cities are particularly sensitive and vulnerable to climate change impacts, such as heatwaves, flooding, droughts and the urban heat island effect, which is when cities are much hotter than surrounding rural areas. LIFE URBANGREEN will show that the management of urban green areas in two European cities can be improved by the introduction of a monitoring platform based on geographic information systems. This platform will enable the ecosystem services provided by green areas in cities to be assessed using remote sensing data, the irrigation of trees to be smartly managed and the public to be involved in environmental monitoring. The trials in Rimini, Italy and Krakow, Poland are expected to reduce the cities' greenhouse gas emissions, water consumption and air temperature.

### [Project summary](#)

#### **Promoting adaptation measures in town planning (LIFE METRO ADAPT)**

Southern European cities such as Milan in Italy are particularly vulnerable to the impact of climate change, experiencing hotter summer days, extended periods without rainfall and extreme weather. City planning must therefore include adaptation strategies and measures. LIFE METRO ADAPT is promoting nature-based solutions to address such climate-related problems, especially the risk of flooding and heatwaves, while also regenerating neglected urban spaces. It will engage local citizens and stakeholders from the construction sector to demonstrate a range of measures that can be taken, while supporting these activities through improved data and mapping of at-risk areas. Guidelines for vulnerability assessments will be shared with 10 cities in Italy.

### [Project summary](#)

#### **Increasing resilience to extreme rainfall (LIFE SimetoRES)**

The increased frequency of extreme rainfall due to climate change can be especially harmful for towns and cities. Blue and green infrastructure that helps manage the runoff of storm-water, such as rain gardens and artificial wetlands, can make them more resilient to this challenge. LIFE SimetoRES is creating six such infrastructure elements based on a sustainable urban drainage system approach within the towns of Paternò and Ragalna in Sicily. Integrating such management through infrastructure into the Simeto River Agreement will improve the river valley's resilience to climate change in the long term.

### [Project summary](#)

*LIFE Climate Change Mitigation (5 projects – 17.0 million)*

#### **Reducing the global warming potential of air conditioning (ZEROGWP)**

Hydrofluorocarbon refrigerants have a significant global warming potential



and must be largely phased out of fridges, air conditioning and ventilation units in the EU by 2030. A propane alternative, R290, has near zero global warming potential but is highly flammable and so cannot currently be used in standard air conditioning units. ZEROGWP will enable the company INNOVA to bring its propane-based double duct air conditioning systems closer to market by carrying out extensive field tests in residential buildings in Italy, Czech Republic and Slovakia ahead of promoting its commercial uptake across Europe. The project will carry out a lifecycle analysis of the new technology's environmental performance, make its safety performance available to policymakers and draw up a business plan.

[Project summary](#)

### **Showing the climate action benefits of planting legumes (LIFE AGRESTIC)**

Planting legumes as part of cropland rotation increases the land's capacity to sequester carbon while reducing the need to apply nitrogen. This reduces greenhouse gas emissions into the atmosphere. Legumes also offer protection from pests and weed growth. With the help of a new decision-support system for farmers, LIFE AGRESTIC will demonstrate these benefits on pilot sites in Italy. This system will ensure that the crop rotations are efficiently managed, diminishing the use of nitrogen fertilisers and pesticides, as well as non-renewable resources, such as soil and fuel. The project will also design a quality label scheme for produce from efficient cropping systems.

[Project summary](#)

### **Waste-powered district heating (LIFE4HeatRecovery)**

Heating and cooling systems are responsible for around half of the EU's energy consumption and thus have a great impact on natural resources. LIFE4HeatRecovery's innovation is the creation of a modular technology that makes use of reversible heat pumps to recover or reuse heat from urban waste. It will trial the concept at four district heating networks in Italy, Germany and the Netherlands to show that harvesting heat from multiple urban sources is a viable alternative to fossil fuels. The project will develop management plans for district heating networks, a public database of waste heat sources and a financing and risk management plan for utility companies and investors.

[Project summary](#)

### **A substitute for harmful refrigerants (C4R)**

Commercial refrigerators are still largely based on synthetic fluorinated refrigerants that have a damaging impact on the ozone layer and which contribute to global warming. LIFE C4R's six pilots in Italy, Spain and Romania are designed to prove that harmful refrigerants can be substituted with carbon dioxide at any temperature on an industrial scale. Not only does the proposed technology reduce greenhouse gas emissions, it is also at least 10% more energy efficient than current systems as well as being cheaper to install and maintain.

[Project summary](#)



## **Saving carbon-storing underwater meadows (SEA FOREST LIFE)**

Neptune grass (*Posidonia*) meadows store large amounts of carbon and thus have a vital role to play in mitigating climate change. More than 200 sea meadows are found off the coast of Italy, but these are being destroyed at a rate of around 17% each year. The SEA MEADOW LIFE project aims to reverse this decline by identifying good practices for consolidating and expanding the meadows. It aims to define standards for determining the amount of carbon dioxide stored and to create a platform for a nationwide market in carbon credits. A mooring plan will also be drawn up for most at-risk Neptune grass meadows. Similar measures will also take place in Malta.

### [Project summary](#)

*LIFE Climate Governance & Information (1 project – 2.1 million)*

## **Using natural water retention to reduce the impact of flooding (LIFE BEWARE)**

Floods and heavy rainfall are becoming increasingly common as a result of climate change. The LIFE BEWARE project is using natural water retention measures to diminish the risks and the economic damage caused by flooding. It will engage the people of the Veneto region of northern Italy, an area prone to floods, through workshops and investment opportunities. Activities include improving building codes to take into account climate change adaptation, the development of sustainable urban drainage systems and the creation of a large water retention basin for storing water on agricultural land.

### [Project summary](#)

## **LATVIA (LV) (2 projects – 5.3 million)**

*LIFE Environment & Resource Efficiency (2 projects – 5.3 million)*

## **Cutting pollution from paints (LIFE-ALFIO)**

The presence of volatile organic compounds and biocides in paints has harmful effects on the environment, biodiversity and human health. LIFE-ALFIO will pilot the use of a non-toxic substitute for biocides found in paints and coatings. The 16 biocide-free paint and coating formulas will be manufactured on a pilot line that can be scaled up to full industrial capacity as soon as the market requires. It will also develop an online platform for the paints and coating industry to share information about formulas, the transparency and traceability of paint and coating components in product value chains.

### [Project summary](#)

## **Insulating buildings with recycled paper and hemp (LIFE\_PHIPP)**

Synthetic mineral wool is the most widely-used building insulation material in Europe. It is low-cost and easy-to-transport, but little recycled: over 90% goes to landfill. LIFE\_PHIPP will manufacture insulation mats made of recycled paper and hemp fibre at a pilot plant in Latvia. These will be installed in demonstration buildings in Latvia, Germany, Finland and UK and

certified for sale in all four countries. The project will draft guidelines for use and disposal of the mats as well as green procurement specifications. The new product will be presented to potential investors and at least 50 companies and associations that can further its spread.

[Project summary](#)

### **LITHUANIA (LT) (3 projects – 10.1 million)**

*LIFE Nature & Biodiversity (1 project – 2.4 million)*

#### **Better breeding conditions for migratory terns (LIFE Terns)**

Habitat change and disturbance mean that migratory bird species are having less breeding success in Lithuania. Populations of the common tern (*Sterna hirundo*) and little tern (*Sternula albifrons*) have declined within nature conservation areas. In many areas the situation is critical. This project is involving key stakeholders to ensure that breeding habitats in Natura 2000 network sites are properly maintained. The goal is to improve the conservation status of the breeding populations to favourable.

[Project summary](#)

*LIFE Environment & Resource Efficiency (2 projects – 7.7 million)*

#### **A closed loop for sewage sludge and biomass ash (NutriBiomass4LIFE)**

Sewage sludge from wastewater treatment and ash left after biomass is burned are nutrient-rich waste products with great potential for reuse, particularly for large cities. A company in Lithuania will use Vilnius's sewage sludge and ash from its district heating systems to grow woody biomass on land that is marginal or unsuitable for agriculture. Nearly 30 000 tonnes of waste material will be spread on the plantations, improving 1 800 hectares of soil and providing enough material to generate nearly 40 GWh of renewable energy in a model circular economy project.

[Project summary](#)

#### **Harvesting algal blooms for useful things (Algae Service for LIFE)**

Blooms of macro-algae on the surface are the first sign that water bodies are deteriorating. Left unchecked they can severely damage aquatic ecosystems, biodiversity and people's livelihoods. Cyanobacteria blooms can harm human health and are potentially fatal. If harvested, such material could be used to make biofuel, bioplastics, fertilisers and other useful things. AlgaeService for LIFE will test two prototype harvesting machines in real-world conditions on rivers, lakes and the Curonian Lagoon. The collected material will be used to produce biogas, fertilisers and other products on a small-scale. The project will write a business plan for commercial development.

[Project summary](#)

## **HUNGARY (HU) (2 projects – 2.9 million)**

*LIFE Nature & Biodiversity (1 project – 1.8 million)*

### **Improving habitats and biodiversity along the Drava river (WISEDRAVALIFE)**

The Drava forms most of the border between Hungary and Croatia. Degradation of the riverbed of this tributary of the Danube has led to deteriorating conditions for riparian (riverbank) and floodplain habitats. Other threats include drainage and lack of water on the Drava's floodplain. WISEDRAVALIFE will take a number of steps to improve the conservation status and resilience of riparian habitats – and consequently the species within them – on the Croatian-Hungarian stretches of the river. These include actions to improve the water regime and biodiversity of riparian forests, restore habitats and control invasive alien species. New approaches to combat riverbed degradation are also planned.

#### [Project summary](#)

*LIFE Environmental Governance & Information (1 project – 1.2 million)*

### **Helping consumers use chemical products sustainably (Green & Safe LIFE-styles)**

More than two-thirds of EU citizens are concerned about exposure to hazardous chemicals in daily life. However, less than half feel well informed about the potential dangers of chemicals in consumer products such as paints, detergents and cosmetics. Hungarian consumers in particular lack knowledge of safety warnings, ecolabels and safe disposal of waste chemical products. Green & Safe LIFE-styles is targeting 3 million Hungarian citizens with an awareness campaign about the sustainable and safe use of chemical products. It will work closely with 15 000 households to change their behaviour, leading to an increase in demand for certified sustainable products. The behaviour change programme is designed to be replicated elsewhere and project results will be shared with consumer and environmental groups, businesses and policymakers.

#### [Project summary](#)

## **The NETHERLANDS (NL) (6 projects – 18.3 million)**

*LIFE Environment & Resource Efficiency (3 projects – 8.3 million)*

### **A circular approach to safe and biodiverse roads (LIFE GRASS2GRIT)**

LIFE GRASS2GRIT is using mown grass from road verges as a raw material to make de-icing salts (from grass liquids) and road furniture (from grass fibres). These bio-based materials reduce the need for mined salts, and wood and aluminium. The project will demonstrate the environmental benefits of this approach, such as improved roadside biodiversity, resource management, and the sustainable production of road signs and barriers. The project is creating a new circular economy around road management for a province in the Netherlands, and will actively seek to replicate this across Europe.

## [Project summary](#)

### **Predicting the movement of plastic waste (LIFE SouPLess)**

The LIFE SouPLess project is tackling plastic pollution in rivers with technology to predict where it builds up and remove it before it reaches the ocean. Plastic waste is degrading natural habitats and contaminating marine ecosystems. The project is developing new software to calculate its likely whereabouts in any given waterway. It is also deploying equipment to divert currents so that they carry litter towards collection facilities. Another invention demonstrated in LIFE SouPLess blows a constant curtain of bubbles underwater to prevent plastic litter from crossing further downstream. Adjustments to the technique could soon contain waterborne microplastics as well.

## [Project summary](#)

### **Taking nitrogen out of wastewater and back into fertilisers (LIFE-NEWBIES)**

To protect EU water bodies from agricultural nutrient contamination and reduce greenhouse gas emissions from fertiliser production, Dutch research institute Wetsus is pioneering a technique to remove reactive nitrogen directly from wastewater. Scientists will be deploying their prototype in a transportable container, driving it to sites where it can extract up to a kilogram of nitrogen each day from sources as unlikely as sewage or urine. The reactive nitrogen recovered will be incorporated into new fertilisers. Project partners from the Netherlands and Spain will investigate the market for this product to help finance the future rollout of their technology.

## [Project summary](#)

*LIFE Environmental Governance & Information (1 project – 1.8 million)*

### **Stopping bird crime in the EU and beyond (LIFE Against Bird Crime)**

Illegal activities such as killing, trapping and trading of birds still take place in many EU countries, and bird crimes in other regions directly impact migratory species within the EU. This threatens the conservation objectives of the EU Birds Directive and the EU biodiversity strategy. This project targets a significant reduction in illegal activity in the EU and neighbouring Mediterranean region by increasing the knowledge base, identifying strategic actions, raising awareness and supporting advocacy efforts. The project will also implement pilot projects in Cyprus, Greece, Croatia and Italy to demonstrate, share and promote effective approaches to reduce bird crime.

## [Project summary](#)

*LIFE Climate Change Adaptation (2 projects– 8.2 million)*

### **A collective answer to water shortages and flooding (LIFE Local Water Adapt)**

The Dutch province of Limburg is taking a collective approach to the problem

of water shortages and flooding associated with climate change. This will involve public-private partnerships in adaptive water management. It will collect and store rainwater at a demonstration site, thus drastically reducing the need to extract water for household consumption from groundwater sources. The site will also demonstrate that rainfalls of up to 60 mm an hour can be absorbed without leading to potentially damaging runoff, and that organic waste and greywater can be profitably treated to produce liquid fertiliser and biogas.

[Project summary](#)

### **Showing how agroforestry can make agriculture more resilient (Farm LIFE)**

Noord-Brabant province in the Netherlands has been particularly affected by warmer and wetter weather in recent decades, leading to a loss of biodiversity and an increased risk of flooding. The Farm LIFE project is demonstrating how agroforestry can protect farms from potentially devastating floods and other impacts. To encourage farmers and other stakeholders to take-up such adaptation strategies after the field trials, the project team will build partnerships and engage policymakers. The measures being demonstrated should also improve biodiversity with numbers of some indicator species, including pollinating insects, increasing by up to one-third.

[Project summary](#)

### **AUSTRIA (AT) (2 projects – 3.5 million)**

*LIFE Climate Change Adaptation (1 project – 2.0 million)*

#### **Testing a replicable approach to resilient cities (LIFE DICCA)**

Large cities will experience more weather extremes as a result of climate change. Vienna is taking adaptation seriously by taking steps to make the ecosystems of the Danube Island more resilient. This will involve creating wetlands, removing invasive non-native species, such as exotic turtles, and managing sediment sustainably. An awareness campaign will be targeted at the many city-dwellers and tourists who use the island for relaxation and recreation. The expected outcome is a 15% reduction in maintenance costs for the island and a subsequent 20% reduction in its CO<sub>2</sub> emissions. The project will carry out a feasibility study into the potential for replicating its approach in other large cities.

[Project summary](#)

*LIFE Climate Governance & Information (1 project – 1.5 million)*

### **Helping EU countries meet their climate commitments (LIFE360)**

Some EU Member States need help to finalise their national energy and climate plans for 2030, which are scheduled to be ready next year. LIFE360 will set up an online platform to support the process in Hungary, Italy, Poland, Romania and Spain, by involving more people in meaningful consultation processes, developing and implementing effective national plans and improving

climate governance. The platform will foster dialogue among local and regional authorities and NGOs. The project will also develop tools such as scenarios, training kits and a crowd-sourcing database, and enable best practice to be shared. It will also create a policy monitoring portal to assess and score national climate policies. Results will be shared with the Covenant of Mayors Association and other civil society umbrella groups.

### [Project summary](#)

#### **POLAND (PL) (2 projects – 9.0 million)**

*LIFE Nature & Biodiversity (1 project – 5.5 million)*

##### **Renaturalising a unique inland delta (LIFE4DELTA\_PL)**

The inland delta of the River Nida in Poland is a unique area of great natural interest, where many rare plants and animals are found. River management and reclamation works in the 1980s have reduced its capacity to retain water. The project is tackling this problem by building dams and drainage ditches and restoring old river beds. To strengthen the mosaic of ecosystems it will restore and maintain lowland meadows and protect willow, poplar, alder and ash forests. A gene bank for typical plant species of the delta will be set up. Wildlife will also get a boost through artificial nests for the white stork and white-tailed eagle and releases of protected toads, newts, turtles and freshwater mussels. New lookout points and boardwalks will allow visitors to tread lightly as they appreciate the beauty of the delta.

### [Project summary](#)

*LIFE Climate Change Mitigation (1 project – 3.5 million)*

##### **Lighter vehicles for lower emissions (LIFE BIOBCOMPO)**

The transport sector is responsible for a significant percentage of Europe's overall greenhouse gas emissions. Reducing the weight of vehicles on our roads will significantly reduce the problem. LIFE BIOBCOMPO is developing low-density thermoplastic composites made from renewable sources to replace the heavier materials commonly used in car manufacturing. Co-ordinating beneficiary Sapa Polska will optimise its injection moulding system and the structure of the bio-based components ahead of their use in the production of automotive parts. The target is for 30 000 new cars from the FIAT group in Italy to be equipped with components made with the new materials. These are expected to emit 8% less carbon oxide than current vehicles.

### [Project summary](#)

#### **PORTUGAL (PT) (4 projects – 6.4 million)**

*LIFE Nature & Biodiversity (2 projects – 3.9 million)*

##### **Protecting endemic Azores plants from extinction (LIFE VIDALIA)**

Action is needed to prevent the extinction of two endemic plant species in

the Azores: the Azores bellflower, *Azorina vidalii* (an evergreen shrub), and *Lotus azoricus*, a flowering leguminous plant. LIFE VIDALIA will introduce new ways of controlling invasive plants and rodents, which threaten these coastal species on three islands. It will also improve plant nursery protocols to facilitate reintroductions and increase knowledge of the endemic plants. Longer term, the aim is to replicate the best practices developed on all nine islands of the Azores.

[Project summary](#)

### **Overcoming barriers to safeguard the wolf (LIFE WolFlux)**

A sub-population of wolves south of the Douro river is fragmented and isolated from the rest of the Iberian wolf population by geographic, ecological and social barriers. These wolves could die out without action to address threats and allow different packs to mingle and breed. LIFE WolFlux is addressing conflicts with animal husbandry, poaching and the danger of fires at wolf rendezvous and breeding sites. It will also increase availability of wild prey (e.g. roe deer). Developing a strategy to promote wolf tourism and related activities to support the local economy should help increase tolerance of and positive attitudes towards wolves in this part of Portugal.

[Project summary](#)

*LIFE Environment & Resource Efficiency (1 project – 1.1 million)*

### **Reducing the environmental footprint of footwear (LIFE GreenShoes4All)**

The European footwear industry is moving towards greener manufacturing. As part of the LIFE GreenShoes4All project, the Centro Tecnológico do Calçado in Portugal will guide international efforts to quantify and harmonise environmental credentials within the footwear sector. It will notably roll out a Product Environmental Footprint methodology to reduce the burden the sector places on natural resources, plastic waste and greenhouse gas emissions. The added transparency provided by these measures could better inform consumers of the environmental impact of the shoes they buy, fostering a market for ecological shoe designers.

[Project summary](#)

*LIFE Climate Change Adaptation (1 project – 1.4 million)*

### **Saving water in a historic Portuguese city (LIFE AGUA DE PRATA)**

Water is a scarce resource in the historic Portuguese city of Évora, a UNESCO World Heritage Site. Climate change is making it even more precious. LIFE AGUA DE PRATA will address this challenge by sustainably re-using water from wells and springs that previously served a Roman aqueduct. The aqueduct will be adapted to distribute water to around half of the city's green areas. This will save around 120 000 cubic metres of treated surface water and further savings are expected through a campaign to promote more efficient use of water in residents' gardens. The city's green spaces will be adapted to



include natural features that can improve their ability to withstand heat waves and extreme rainfall.

### [Project summary](#)

#### **SLOVENIA (SI) (1 project – 1.8 million)**

*LIFE Environment & Resource Efficiency (1 project – 1.8 million)*

##### **Making new products from old plastic and papers (LIFE CEPLAFIB)**

Millions of tonnes of post-consumer plastic waste end up in landfill, or worse, in our seas. To create an effective after-use economy, recycled plastics must satisfy market needs, by being suitable for use with injection moulding and other extended manufacturing techniques and by being available in sufficient quantities. CEPLAFIB is a new material made from recycled plastics and pulp from old newspapers. It is designed to be used in the packaging, automotive and construction industries. This LIFE project will bring it closer to market by working with partners in Slovenia, Finland, Poland and Spain to show that it can be produced at a competitive price and that it is suitable for use with a range of manufacturing techniques.

### [Project summary](#)

#### **SLOVAKIA (SK) (5 projects – 15.4 million)**

*LIFE Nature & Biodiversity (2 projects – 8.7 million)*

##### **Restoring and reconnecting dry grasslands (LIFE SUB-PANNONIC)**

Dry grasslands are under threat in the Pannonian bioregion, where management is urgently needed to safeguard their rich biodiversity. LIFE SUB-PANNONIC is restoring three important dry grassland habitats in a transborder area in south-west Slovakia and the neighbouring Czech Republic. This will be achieved by removing shrub and tree overgrowth, controlling invasive plant species, and the subsequent reintroduction of traditional mowing and grazing practices. Significantly, the project will reconnect habitat patches of genetically-isolated endemic plant species.

### [Project summary](#)

##### **Saving the root vole from habitat loss (LIFE Microtus II)**

The loss of wetlands, streams, marshland and wet meadows in the Danube lowlands has had a deep impact on an ice age relict rodent with very specific habitat requirements. *Microtus oeconomus mehelyi* is a subspecies of root vole that is endemic to Austria, Hungary and Slovakia. To increase the root vole population by 20% in areas where it is found, LIFE Microtus II will purchase land, restore habitats, create ecological corridors and raise public awareness of the species.

### [Project summary](#)

*LIFE Environment & Resource Efficiency (2 projects – 4.3 million)*

### **Testing health benefits of adding minerals to soft water (LIFE – Water and Health)**

Scientific research shows that people who live in areas where water is low in calcium and magnesium are more prone to cardiovascular disease than people in hard-water areas. The project will carry out biomonitoring of the arterial stiffness of residents before and after the two minerals are added to drinking water in two Slovak towns with soft water. It will use available statistics to assess the impact on respiratory health, diabetes and other conditions. Based on its findings, the project will propose optimum levels of water hardness for human health and seek to have these standards incorporated into national and international guidelines.

[Project summary](#)

### **Monitoring apex predators to boost human health (LIFE APEX)**

Apex predators are at the top of the food chain. As such, they are well suited to monitoring of chemicals that are persistent, bioaccumulative or toxic, and therefore potentially harmful to humans and wildlife. LIFE APEX will set up a European database and guidelines to help regulators and industry make more systematic use of chemical monitoring data from apex predators and their prey in risk assessments of chemicals and in assessing the success of pan-European mitigation actions.

[Project summary](#)

*LIFE Climate Change Adaptation (1 project – 2.4 million)*

### **Increasing climate resilience in panel-building districts (LIFE DELIVER)**

The western area of Bratislava, Karlova Ves, contains a large number of prefabricated residential buildings that render it especially vulnerable to climate change impacts such as high temperatures and flooding. LIFE DELIVER is refurbishing two of these buildings and modifying surrounding open spaces to show that residential areas can become more resilient to climate change, while protecting biodiversity and reducing energy consumption to near zero. It will develop a climate resilience assessment tool and action plan, and establish an education centre in line with its approach to encourage public participation. It will also contribute to building and other relevant legislation.

[Project summary](#)

### **FINLAND (FI) (5 projects – 24.8 million)**

*LIFE Nature & Biodiversity (4 projects – 22.7 million)*

### **Improving habitats for specialist beetles (Beetles Life)**

Protected beetles that play an important role in Finland's boreal forests and

bog woodlands are under threat. This project targets saproxylic insects (which feed on dead or decaying wood) and pyrophilous insects (which respond to smoke and heat generated by forest fires). To improve their conservation status, degraded habitats will be restored and potential new habitats created. This will involve controlled burning and simulations of storm damage to increase the amount of decaying wood. Bog woodlands will be restored by blocking ditches and removing trees to retain more water.

[Project summary](#)

### **Keeping the Siberian flying squirrel airborne (Flying Squirrel LIFE)**

The presence of the Siberian flying squirrel (*Pteromys volans*) in the EU is under threat from habitat loss and fragmentation. As this distinctive species inhabits economically valuable forests in Finland and Estonia, conflicts between interests are unavoidable. Its presence is often unexpected and knowledge on how to maintain essential forest areas is limited, both of which can cause delays in land use and negative attitudes towards the squirrel. By preventing the loss and fragmentation of habitats and developing new tools for better land-use planning this project can help the species to thrive again.

[Project summary](#)

### **Combating three invasive alien plant species (Finvasive LIFE)**

Invasive alien species (IAS) are the second biggest threat globally to biodiversity. Three types of invasive plant are targeted by this project: giant hogweeds (*Heracleum* species), the American skunk cabbage (*Lysichiton americanus*) and Himalayan balsam (*Impatiens glandulifera*). As well as eradicating and controlling these invaders in Finland, the project will develop a framework for stakeholders to cooperate on controlling IAS in the future. Education is a key element of Finvasive LIFE's work, as this can reduce the unintentional spread of invasive species and increase awareness of non-chemical eradication methods.

[Project summary](#)

### **Improving habitats of the Baltic coast and archipelagos (CoastNet LIFE)**

Some 30 habitats in conservation areas along the coasts and archipelagos of Finland and Estonia are in a bad way. To improve their condition, CoastNet LIFE is launching a programme of restoration work that will combat the effects of habitat fragmentation and isolation and give numerous species a chance to colonise new areas. Several bird species will benefit from improvements to their nesting habitats and areas on their migration routes. The project actions will also boost resilience to climate change.

[Project summary](#)

*LIFE Environment & Resource Efficiency (1 project – 2.1 million)*

### **Applying new technology to improve indoor air quality (Green Foundry LIFE)**

The EU's foundries employ nearly 300 000 people, as well as playing a key role in industry. Fumes and fine particles from organic binders used to make sand moulds and cores for casting are a health hazard to foundry workers and the wider public. This project will show that they can be replaced by inorganic binders, significantly reducing airborne emissions and recycling 75% of harmful surplus foundry sand. Foundries in Finland and Italy will implement the change into their processes and results will be submitted as a Best Available Technique for iron and steel foundries in Europe.

[Project summary](#)

### **SWEDEN (SE) (3 projects – 16.2 million)**

*LIFE Environment & Resource Efficiency (1 project – 7.6 million)*

#### **Building a wastewater eco-hub for West Sweden (LIWE LIFE)**

Antibiotics, phosphorous and micro-plastics can build up to concentrations that threaten natural ecosystems and affect public health. As part of an initiative to convert an old industrial harbour into a thriving residential hub, the municipality of Lidköping in Sweden is building a modern wastewater treatment plant capable of removing up to 99.5% of these pervasive pollutants and recovering some of them as valuable resources for agriculture and industry. The new Circular Wastewater System will provide neighbouring farms and factories with recovered phosphorous, nitrogen and metals to help the area shift towards a greener, more circular economy.

[Project summary](#)

*LIFE Climate Change Adaptation (1 project – 4.5 million)*

#### **Working with nature to protect against coastal erosion and floods (LIFECOASTadapt)**

Intensive farming, urbanisation and coastal protection structures interfere with natural ecosystem processes along the coast of southern Sweden. LIFECOASTadapt will work with those natural processes to protect against coastal erosion and floods, while strengthening biodiversity and ecosystem-based services in this region. This will involve pilot actions at 15 demonstration sites in towns and cities that will increase climate resilience for 150 000 people in total. Measures will include nature-friendly upstream flood defences, wetlands to protect shorelines, restored and replenished dunes and improved sea water vegetation. Guidelines for planners and policymakers will enable wider uptake of ecosystem-based measures.

[Project summary](#)

*LIFE Climate Change Mitigation (1 project – 4.1 million)*

#### **Using fish farm waste for better, cheaper solar panels (SUNALGAE for LIFE)**

Could waste from aquaculture be the answer to the need for cheaper and more efficient solar panels? Recycled nutrients from an inland fish farm will be

used to manufacture an algae-based material at a pilot production line on Sweden's west coast belonging to Swedish Algae Factory AB. This new material should significantly improve the efficiency of silicon-based and thin film solar panels, enhancing output and reducing costs by around 4% compared to current state-of-the-art solar panels. The company expects fast commercialisation and replication at the end of its 12-month trial.

[Project summary](#)

## **UNITED KINGDOM (UK) (5 projects – 29.6 million)**

*LIFE Nature & Biodiversity (4 projects – 28.3 million)*

### **Improving the condition of Welsh rainforests (Celtic Rainforests LIFE)**

The Celtic temperate rainforests of the EU occur almost exclusively in the UK. These places of myth and legend are under threat from invasive non-native species, which are damaging the habitat of mosses and liverworts within the woodlands. At five Natura 2000 sites in north- and mid-Wales, this LIFE project will eliminate rhododendrons, reduce populations of other invasive plants, and establish buffer zones to prevent re-infestation. It will also implement grazing, habitat restoration and woodland management practices, supported by local partnerships to ensure actions continue in the long run.

[Project summary](#)

### **Making sand dunes more dynamic (SoLIFE)**

A major problem for dune habitats is that they become too stabilised, with the loss or decline of species that depend upon bare sand and early successional dune stages. To improve the conservation status of sand dune habitats in Wales, the Sand of LIFE project will restore dynamic processes, thereby allowing the free movement of sand. It will create notches in the dunes, scrape dune slack vegetation, remove invasive species such as sea buckthorn and Himalayan balsam and introduce mowing and grazing where appropriate. Best practice guidance for dune rejuvenation will be produced and disseminated across Europe.

[Project summary](#)

### **Protecting Orkney's wildlife from a stoat invasion (Orkney Native WildLIFE)**

The non-native stoat (*Mustela erminea*) is a serious threat to the wildlife of the UK's Orkney Islands, especially ground-nesting birds listed in the EU Birds Directive. To eradicate stoats from the archipelago by 2023, the project will implement innovative biosecurity measures, establish a stoat-surveillance network among Orcadians, and produce best practice guidance to enable this mustelid biosecurity strategy to be replicated elsewhere in Europe.

[Project summary](#)

### **Creating dynamic dunescapes (DuneLIFE)**

A decline in the quality of sand dune habitats in Europe is due to a range of historic and current drivers of change. These include nutrient enrichment, water availability, invasive alien species, accelerated successional change, and past and current management. England has lost nearly half of its dune area since 1900. DuneLIFE is targeting eight sand dune and associated wetland habitats and four species listed in the EU Habitats Directive. Across an area of 4 400 hectares, the project will restore natural sand dune dynamics, reinstate grazing regimes, remove invasive plants, restore freshwater systems, and address excessive nutrient enrichment via pilot site nitrogen action plans.

[Project summary](#)

*LIFE Environmental Governance & Information (1 project – 1.4 million)*

### **Protecting the UK's seabirds from invasive predators (Biosecurity for LIFE)**

Invasive predator species are a serious threat to seabirds breeding on islands. Seabirds tend to be ground-nesting, colonial and unfamiliar with carnivorous mammals, and can suffer great declines if exposed to such predators. Biosecurity for LIFE is targeting incursions into special protection areas on UK islands for breeding seabirds by key invasive predators, including rats, stoats and American mink. Actions include producing biosecurity plans for all 41 areas, establishing 'rapid response units' to deal with any incursions, and raising awareness about the need for biosecurity. The project will also set up a European advisory group for island restoration professionals.

[Project summary](#)