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inspiration for change



good practices for boosting **climate action** in agriculture, buildings and transport policy

Central & Eastern Europe

LIFE Plan Up

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The European Green Deal, adopted by the European Commission in December 2019, has set a clear direction: Europe will aim to become the first carbon-neutral continent by 2050.

This means that over the next few years, European policies for the decarbonisation and depollution of the economy will be shaping the future of its 500 million citizens at an unprecedented speed.

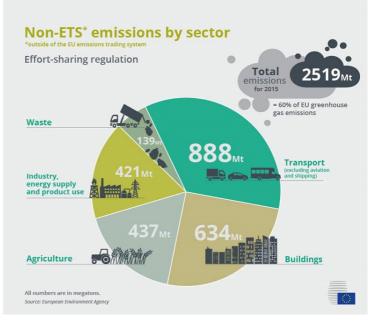
The National Energy and Climate Plans (NECPs) submitted by all 27 Member States in early 2020 aim at streamlining efforts to comply with European legislation and will be the main instrument for achieving the carbon neutrality objective.

Other policies and financial instruments at the European level are already in place or will be adopted over the next two or three years and will also contribute to the transition: the Climate Law, the Multiannual Financial Framework – setting the EU budget for 2021-2027 – and the Just Transition Fund, to name a few.

Achieving the EU's goals will require mobilising the right skills and knowledge, enabling the technical and industrial means, ensuring sufficient EU funding and private investments, and emphasis on research. The good news is that this is possible and good initiatives are already spreading quickly across Europe.

The good practices in this booklet show that change is already happening. They also show that it is possible to translate the challenging environmental and climate objectives set in Brussels into concrete actions at national, regional and local level by setting the right legislative framework, enabling conditions and empowering bottom-up actions. While the Emission Trading System (ETS) is often at centre stage of climate debates, close to 60% of the EU's domestic greenhouse gas (GHG) emissions come from sectors regulated under the Effort Sharing Regulation (ESR). Most of these emissions come from three sectors: **agriculture** (17%), **energy use in buildings** (25%) and **transport** (35%).

EU leaders have committed to reduce ESR emissions by 30% before 2030 compared to 2005, which is a tremendous challenge but also an opportunity for growth and job creation. Reducing agricultural, building and transport emissions is crucial for EU's climate goals and luckily policymakers will not have to begin from scratch.



Source: European Commission

The challenge of reducing emissions is formidable, but policymakers, private-sector actors and civil society need not start from a blank slate.

Many good practices already exist within all sectors and can be adapted to national or local conditions, or serve as inspiration for developing new solutions. If harnessed and mobilised, these existing practices can function as a shortcut for climate action and accelerate the reductions necessary for achieving EU commitments.

Making good practices reality

The EU's budget cycle, the Multiannual Financial Framework (MFF 2021-2027), will play a crucial role in addressing the climate emergency and enabling a socially just transition that leaves no one behind. The money is used to: build clean energy infrastructure and improve connectivity across the bloc (Connecting Europe Facility); invest in sustainable business models, transport and energy efficiency (InvestEU); fund agriculture (Common Agricultural Policy, or CAP); provide financial assistance to disadvantaged regions to improve and modernise their economy during the transition (Cohesion and Value); finance research and innovation (Horizon Europe).

The European Investment Bank has recently decided 40% of its funds will be dedicated to this topic: it will be financing NECPs measures, with specific focus on countries eligible for the Transition Fund.

Another key element for success is participation of civil society and local governments to the development of the plans as the uptake of local actions can be hampered by lack of public acceptance and poor coordination at municipal level. The Netherlands' NECP can be an inspiration in this sense as it has been drafted through a comprehensive participatory process that has already defined the location of needed infrastructures and investments.

Agriculture

Key policies for agriculture and climate

• Common Agricultural Policy (CAP)

The CAP is currently under reform but, according to the Commission's proposal, it will contribute to climate and environmental objectives primarily through environmental conditionality (GAECs), ecoschemes and Agri-Environment-Climate Measures (AECMs).

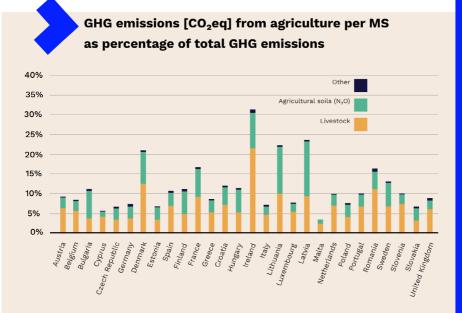
- National Energy and Climate Plans (NECPs) The Regulation on the Governance of the Energy Union and Climate Action requires Member States to develop a 10-year integrated NECP for 2021 to 2030, covering all sectors including agriculture.
- **Nitrates Directive** Although focusing on water pollution, the Nitrates Directive contributes to reducing fertiliser use which drives nitrous oxide (N₂O) emissions.
- **European Green Deal (EGD)** It remains to be seen how the CAP will be aligned to the EGD and particularly the Farm to Fork Strategy.

Agriculture and climate in Central and Eastern Europe

On 21 November 2019, regional stakeholders gathered in Warsaw to discuss the NECPs as catalysts for climate action in Central and Eastern Europe. Experts from Romania, Poland, Hungary, Ukraine, Moldova and Lithuania discussed opportunities and barriers for improving climate action in the agricultural sector.

Some of the topics discussed were:

- Strong tendencies towards fewer and larger farms in the region, intensifying agricultural production;
- Farmers' reluctance to accept increased environmental regulation unless accompanied by extra funding;
- A general lack of environmental awareness and access to knowledge and technology amongst farmers;
- Strong resistance by influential agro-chemical industry.





In agricultural systems (and in forestry) climate action can be combined with biodiversity conservation if designed well. In Poland, a LIFE-funded project supported the creation of a business model based on synergies between the habitat need of an endangered bird species and production of renewable energy from the biomass harvested in the process. Although caution is necessary not to increase demand for biomass for energy purposes, developing sustainable business models for ecosystems restoration or management is key to deliver climate and biodiversity benefits.

Main benefits

Residual biomass from biodiversity conservation efforts is turned into a climate-positive economic asset for energy production, achieving two important environmental objectives simultaneously.

Main challenges

It is complicated to identify cases where true synergies are both possible and economically viable. Also, there is a risk that economic incentives lead to unsustainable "extraction levels" for the biomass produced. Good ecological knowledge is needed to design the specific conservation plan, drawing on participation of experts.





Integrating research, education and practice of climate-friendly agriculture is crucial to foster knowledge exchange for more sustainable agriculture. An example is the biodynamic farm Juchowo in Poland, which has promoted environmentally sustainable agricultural practices since 2000. The main goals of the project are landscaping, environmental protection, education and pedagogy, scientific research on the farm, activities for the disabled and a center for cultural and training meetings.

Main benefits

Agricultural transition is complicated, as experimentation is risky and time consuming for farmers. For this reason, real-life examples of economically viable farms based on sustainable principles can be very powerful in convincing other farmers of the benefits of changing practices. When combined with education and research, demonstration farms can be important catalysts for sustainability transitions in agriculture at the local, national and even the regional level.

Main challenges

Initial costs might be high. Replicating the model requires farmers who don't see themselves purely as food producers, but also as researchers/educators. Support should be available to upskill farmers, and universities should be involved with the research.





In Germany, drafting and applying nutrient balance sheets was made mandatory for large farms in 2018 and will be mandatory for small farms from 2023. The regulation provides a methodology for calculating the balance between nitrogen influx and outflow on farms. It promotes awareness-raising and data collection, but does not require mandatory action to address imbalances (nitrogen leakage and emissions). Nitrous oxide (N₂O) is GHG 298 more potent than CO₂ and emissions are increased by excessive nitrogen fertiliser use.

Main benefits

The practice promotes awareness of nutrient management at the farm level and helps identify sources of inefficiency. This can motivate farmers to improve their nutrient management for environmental and economic gains. The practice has an educational approach and thus stimulates deep attitude change rather than top-down regulation.

Main challenges

The practice is not guaranteed to improve nutrient use efficiency, as it is not tied to mandatory actions. It will require advisory support and administrative resources to enforce.





Establishing silvopastoral agroforestry (trees and livestock) has been subsidised in Ireland since 2014. A per hectare payment of up to 80% of investment cost for planting and fencing (up to &6220/ha) is offered. An additional payment of &650/hectare for maintenance is available up to 5 years after planting.

Main benefits

Planting trees captures and sequesters CO_2 in both above- and below-ground biomass. They also bring benefits for soil conservation, biodiversity, climate change resilience, and water and nutrient cycles. In agroforestry, these benefits manifest in parallel to agricultural production.

Main challenges

Agroforestry should be promoted through advisory services to stimulate engagement with the subsidy, as most farmers are not familiar with the production system.





In Brandenburg state in Germany, an Agri-Environment-Climate Measure (AECM) has subsidised the preservation of water levels in moors with $387 \le /$ hectare/year since 2015. Most of the administrative burden of the practice has been carried by authorities to increase acceptability amongst farmers. Moors have carbon-rich soils, which release large quantities of CO₂ when they are drained and exposed to oxygen in the air.

Main benefits

By preserving wet moors, 14-24 tonnes of CO₂eq./ hectare can be saved annually. Moors are also important for biodiversity, which is safeguarded by a pesticide and fertiliser ban through the subsidy. The practice also fosters acceptance and understanding for the importance of wetlands and peatlands, and can lay the ground for later rewetting of already drained areas to restore carbon sinks.

Main challenges

Governing water levels can be administratively complicated as it usually involves several authorities. It should be coordinated by regional/national authorities to ease the burden on farmers. Many farmers are skeptical towards preserving or rewetting as the tendency has been of draining for generations.





In Lower-Saxony in Germany, climate and environmental concerns have been included as justification for land consolidation. Agricultural areas of low productivity and high nature value are bought by the state and taken permanently out of production to allow for ecosystem restoration and climate change mitigation.

Main benefits

By obtaining the tenure rights of the area, the authorities can guarantee long-term sustainability of the consolidated areas. Climate benefits, biodiversity and other ecosystem services can be safeguarded permanently, and farmers can focus on more productive land for their production. Land consolidation procedures already are well-established in most countries.

Main challenges

Land consolidation is a complicated procedure in administrative and social terms. It can take several years and specificities depend on national legislation.



Buildings

Key policies for buildings and climate

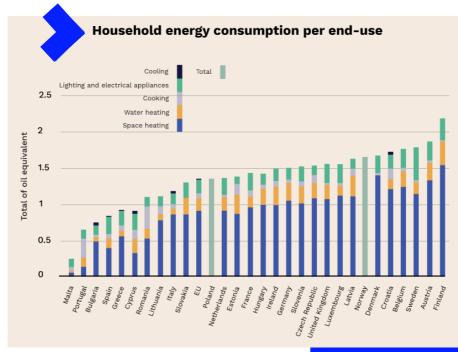
- Energy Performance of Buildings Directive The revised Energy Performance of Buildings Directive (EU) 2018/844 includes measures that will accelerate the rate of building renovation towards more energy efficient systems and will strengthen the energy performance of new buildings, making them smarter.
- National Energy Efficiency Action Plans (NEEAPs) Before the NECPs The NEEAPs fulfilled the requirement laid down in Article 24(2) of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, whereby all member states of the European Union had to submit such plans every three years until 2020 and report annually.
- **The EPBD Buildings Platform** This is the central source of information on the EPBD. The platform comprises databases with publications, events, standards and software tools. Interested organisations or individuals can submit events and publications to the databases.

Buildings and climate in Central and Eastern Europe

On 21 November 2019, regional stakeholders gathered in Warsaw to discuss the NECPs as catalysts for climate action in Central and Eastern Europe. Experts from Romania, Poland, Hungary, Ukraine, Moldova and Lithuania discussed potentials and barriers for improving the climate profile of the buildings sector.

Some of the topics discussed were:

- Upfront cost remains the main economical obstacle: innovative finance schemes are needed;
- Projects should find an external source of financing to scale up results of the pilot project and Return on Investment should be acceptable for all participants;
- Some people are not keen to invest in refurbishment as they expect that the state/EU will take care of it sooner or later. This makes it very hard for ESCo to enter the market.





In 2015, the town of Cornellà del Llobregat, Spain, decided to reframe its traditional popular public running event into a "Run for Energy" to create awareness of energy poverty among its participants and to collect funds for interventions in vulnerable households. The municipality transforms the energy used by runners into kWh for vulnerable households. The amount raised from this symbolic transformation is then allocated by the city to carry out energy audits in vulnerable households. The interventions consist notably of individual energy diagnosis and training, billing optimization and installation of low-consumption materials (e.g. insulation, LEDs).

Main benefits

The city's partnership with Ecoserveis, an association with experience in communicating energy poverty, further increased the impact of the 'Run for Energy' charity race: the action led to substantial financial savings (about €250 per household) and significant energy savings (e.g. 77,700 kWh in 2016).

Main challenges

For such activities, there are challenges in connecting two apparently distant topics and in monitoring the benefits of the action in the mid-term.





The town of Tralee is the seventh largest in Ireland and lies in a mostly rural area. A brownfield project was initiated to heat both public and private dwellings with a district heating system that would dovetail its benefits with targeted energy refurbishment interventions. A 1MW plant was installed, using 115T/y of locally sourced woodchips from plantations, to replace oil-fuelled heating boilers. A second phase with a cogeneration capacity of 20MW is under evaluation.

Main benefits

Linking renewable energy and building retrofit led to important environmental and economical savings. Thanks to the plantation, local farmers had a 25% increase in their income. 90% of the fuel cost remains in the local community.

Main challenges

For a project like this, the challenges lie in engaging with end users, finding kick-off funds and coordinating the supply-side of fuel.





The town of Kępice, Poland, built a small social housing lot using low-consumption materials and low-cost building techniques. The town decided that the new premises should be as energy-efficient as possible. Locally-engineered, low-cost, super-efficient materials were applied, along with photovoltaic roofs. The building time was reduced and the overall cost of the social housing was comparable with the average for the area.

Main benefits

Besides greatly reducing the tenants' bills – the buildings energy demand is down to 15 Kwh/m² – the building process managed to make use of locallyengineered materials, promoting local economy and research and development.

Main challenges

Projects like these require innovative materials and processes, which are not available everywhere, and, in this instance, only small-scale dwellings were built.





On Jász Street in Budapest, Hungary, the local council created energetically modern social housing buildings with funding of 2.3 billion HUF ($\ensuremath{\in}7$ million). The new buildings have the best available technologies built in to prevent heat loss and maximise heat gain using the buildings' inner heat sources. This project received passive house certification for a one-hundred-apartment building, with energy consumption 84% lower than conventional houses.

Main benefits

The local council won multiple Hungarian prizes with this project. The project will enable low income families to be able to pay their bills and the municipality social welfare aid will be dedicated to other more relevant costs for the families.

Main challenges

Being able to finance the high upfront cost is the major challenge to projects like this.





Niepolomice and five other South-East Polish municipalities joined forces to procure and install renewable energy systems – including PV panels, solar thermal collectors and heat pumps – in public and residential buildings on their territories. They obtained 60% co-funding from the Swiss-Polish Cooperation Programme and covered the rest through the payments of citizens who had renewable energy systems installed (30%) and through their municipal budgets (10%).

Main benefits

The total value of the project was €19.3 million. More than 4000 households and 40 public buildings were equipped with solar energy in the course of the project. In many cases, PV modules were integrated with heat pumps, enabling a significant reduction in energy costs and emissions.

Main challenges

There was initial scepticism from end users and the project involved the coordination of a remarkable number of participants.





The Delicias neighbourhood in Valladolid, Spain – built in the 1960s and 70s to house the workers of a newlysettled Fasa factory, currently Renault –was targeted in this Horizon2020 project. Here, 19 communities, a fourteen-story tower and all common areas have been transformed with biomass district heating, wall insulation, a photovoltaic facade and the renovation of public spaces with LED lighting. It merges European and local funds with private equity from the owners.

Main benefits

The demand for heating in the neighbourhood is estimated to decrease by 40%, and a decrease of total energy demand is expected to be between 40 and 50%. The final energy savings will be an estimated 159,830 kWh/year, 17% provided by photovoltaic. Thanks to the project, 954.36 tons of CO_2 /year are saved. This project has exponentially improved the comfort of homes and the quality of life of its occupants.

Main challenges

It is not always easy to win the confidence of tenants and owners. Providing matching funds once the H2020 project is over could prove difficult.



Transport

Key policies for transport and climate

- **CO₂ standards for light duty vehicles** Vehicle standards are the main means by which the EU aims to reduce emissions from the transport sector. As per the agreement by the EU co-legislators, light duty vehicle emissions must be reduced by 15% in 2025 and by 37.5% in 2030, compared to a 2021 baseline.
- **CO₂ standards for heavy duty vehicles** These vehicles represent more than 25% of total transport emissions, and these will be regulated for the first time from 2020. Similar to the measure for light duty vehicles, trucks must reduce emissions by 15% and 30% in 2025 and 2030 respectively, compared to a 2019 baseline.
- **National measures** for the decarbonisation of transport include:
 - Zero and low emissions zones;
 - Increases in fuel taxes;
 - Lower speed limits;
 - Investment in public transport and walking and cycling infrastructure;
 - A shift in freight from road to rail.
- Other EU legislations for the decarbonisation of transport include:
 - The Renewable Energy Directive;
 - The Clean Vehicles Directive;
 - The Energy Efficiency Directive;
 - The Eurovignette Directive (road charging);
 - The Alternative Fuel Infrastructure Directive.

Change 1990-2016 — Change in total greenhouse gas emissions from transport





Low Emission Zones (LEZs) encourage the use of cleaner, more fuel-efficient vehicles by applying charges to deter highly polluting vehicles. Such a system encourages collective mobility (through train and bus use or carpooling) and allows for more space to become available for cycling and walking infrastructure, bus lanes, and green spaces. The charge issued to vehicle users in these zones could be further differentiated to promote the use of cleaner vehicles, through higher charges for more polluting vehicles. There are several examples of good-pratice LEZs in Europe, such as Madrid and London.

Madrid Central LEZ

The practice

Madrid Central is a Low Emissions Zone implemented in some parts of the centre of Madrid. It covers 472 hectares and eliminates the traffic in the inner belt of the city, with some exemptions. Based on their environmental and climate performance, certain vehicles can access the area without restriction.

Main benefits

The plan aims to reduce traffic by 37% compared to 2018 rates, leading to a 14% reduction in CO_2 emissions and 38% reduction in NO_x emissions. Moreover, the measure reduces noises and improves the city environment. The practice is easy to implement and replicate in other cities and it promotes the use of cleaner vehicles and of other modes of transport, such as public transport, walking and cycling.

Main challenges

Political will is needed to implement such a measure and sometimes citizens can be against it.



London LEZ and ULEZ

The practice

The city of London has two schemes in place: the low emissions (LEZ) zone and the ultra low emissions zone (ULEZ). The LEZ operates in the majority of the area of Greater London and its aim is to discourage the most heavily-polluting diesel vehicles from being driven into London. The ULEZ operates in Central London and it includes all vehicles. Respectively, diesel vehicles and all vehicles must pay a charge to access the LEZ and the ULEZ.

Main benefits and challenges

The benefits and challenges are similar to the ones stated above about the Madrid Central LEZ. Benefits include cleaner air, less congestion, and less noise - as well as its replicability. Challenges include some citizen opposition and the need for political willingness to set and run such a scheme.





The city of Oslo established 400 public charging points on the streets between 2008 and 2011. The programme expanded in 2012 after its success, and by late 2014 there were 900 charging points installed. This was accompanied by measures to increase the private charging points to be set not only in public areas but also in garages, shopping centers, apartment buildings and workplaces. These are partly funded with public resources. It has also been complemented by incentives to promote the use of electric vehicles, such as tax exemptions, free passes on toll roads, access to bus and taxi lanes and free parking in public parking spaces.

Main benefits

It tackles both greenhouse gas emissions and also air quality and noise. It's simple and easy to replicate.

Main challenges

It requires big investments to set up the scheme and citizens have to do their bit by purchasing electric vehicles.





The Romanian city of Arad has the second largest tram network, the longest urban network of cycle lanes (135 km) and the highest national rate of bicycle use (8.2%) in the country. Since 2005, the municipality has developed a series of public interventions to improve the sustainability of its urban transport system, such as revamping its tram infrastructure (23 km), modernising its tram depot, implementing an e-ticketing system and procuring six new energy-efficient trams with improved access for citizens with reduced mobility. The municipality also invested in its bus infrastructure by procuring electric buses and other buses using sustainable sources, and extended its cycle network to the nearby Hungarian town of Gyula. EU funding was used for these improvements.

Main benefits

There has been an improvement of the quality of life in the city by decreasing CO_2 emissions and improving air quality. The experience of using public transport has been made easier and more accessible. The practice is easily replicated in similarly-sized cities (population above 150 000).

Main challenges

It requires political willingness for municipalities and for citizens to get involved by opting to use public transport or ride bikes.





The Warsaw electric bus project sets out to replace 10% of the vehicle stock of the Warsaw municipal bus operator with 130 electric buses and create the associated infrastructure, including the construction of aerial chargers at the ends of selected bus lines, and the adaptation of bus depots. In the long run the project will assist the Poland-wide trend towards electric mobility.

Main benefits

Apart from reduction of CO_2 emissions, the project will improve air quality, and will lead to a reduction of noise produced by standard vehicles. It is easy to replicate in other cities and it doesn't require a big change in citizens' behaviour.

Main challenges

The upfront investments to roll out the buses and the infrastructure can be high, so political willingness and availability of funding is a must. Also, efforts must be taken onboard to decarbonise the electricity grid for the measure to deliver on greenhouse gas emissions reductions.





The main objective of U-MOB LIFE project is the creation of a university network to facilitate the exchange and transfer of knowledge about sustainable mobility best practices among European universities. Universities have their own management bodies that make decisions regarding the territorial management of campuses, the infrastructures and services within the campuses, the work and study schedules of university population, and other important issues that affect the mobility of thousands of people. Because of this, the project estimates 600 000 people will be impacted.

Main benefits

This practice is easy to replicate and it targets a sector of the population generally concerned about the climate crisis, making them an important driver for change. It also includes the technical component of informing about the climate impact of the actions, leading to informed decisions.

Main challenges

While it is easy to replicate, it requires willingness from university staff and students to organise such systems. It targets a unique sector of society, so it could be hard to replicate in other sectors.



More resources for climate action

There is an increasing recognition of the need for climate action across sectors amongst various levels of stakeholders. For further information, the following sources may be a good start:

Agriculture

- <u>Cutting emissions from farming</u> The project targets climate ambitions of the CAP and provides good practices and policy recommendations.
- <u>Ten Years for Agroecology in Europe</u> The project features several reports on achieving carbon neutrality through agroecology.

Building

- The European Portal for Energy Efficiency in Building The online resource portal kicked off by the Intelligence Energy Europe program in 2007 and now sharing knowledge and best practices.
- <u>The world green building council</u> The leading organisation that promotes innovative efficiency solutions and policies worldwide.

Transport

- Low emission mobility strategy The EU's declaration of intentions to reduce emissions in transport.
- **Directorate General for Climate Action** Description of EU Commission actions and policies to tackle emissions from the transport sector.



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The impacts of climate change are already being adversely felt across the globe. Tackling this challenge within Europe and beyond will require substantial reductions in carbon emissions across all sectors of the economy, alongside a rapid transition to a zero-carbon energy mix. The past years, European Union member states each developed National Energy and Climate Plans (NECPs) spelling out how they aim to deliver their 2030 climate and energy commitments.

PlanUp tracks the development of National Energy & Climate Plans in five EU Member States: Spain, Italy, Poland, Romania and Hungary. To support rapid decarbonisation in Europe the project promotes good practices in the transport, agriculture and building sector and fosters dialogue on low-carbon policymaking between local, regional and national authorities, civil society organizations and academia.