RENOVATION

Buildings consume the largest amount of energy in the EU and are responsible for 36% of EU greenhouse gas emissions. Existing buildings will mostly still be here in 2050. They are inefficient now and will mostly remain so at the current renovation rate of around 1%.[1] **Faster and deeper renovation would be beneficial in many respects.[2] It is a must for a net climate neutral EU and a clear win-win investment priority for a green, digital and fair recovery.**[3]

Member States are therefore invited to use funds under the **new Recovery and Convergence Instrument to foster investment** in decarbonising the building stock whenever in line with identified priorities under the European Semester process.

As confirmed today in its [revised 2020 Work Programme], the Commission will present after the Summer an ambitious **Renovation Wave strategy** for renovation to play its key role in the economic recovery and the transition towards a more sustainable and resilient EU. [A roadmap setting out the key features of this planned work is published today and opened for public feedback. A public consultation [will be] launched [shortly/on xx xx].

Complementarily with the above and to allow renovation to contribute substantially and rapidly to the recovery effort, the Commission has today also decided to rapidly design and propose a **European Renovation Financing Facility** to be financed with [**91 XX billions per annum**] from the additional funds envisaged under the EU Recovery Plan. Targeting all types of building and a wide range of improvements[4], the **initiative will reach an estimated scale of EUR [350 billion] in investments per year.**

The facility will centrally manage and blend [25 billions] in grants and [65 billions billions] of guarantees ring-fenced and allocated to InvestEU (primarily under its Infrastructure window). The grant component could come from three sources: increased ring-fenced allocation to relevant centrally managed programmes like LIFE or from the increased Member States allocation under ESIF [and JTF]. These could either be mobilised through the InvestEU Member States compartment or through Member States ESIF operational

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[1] The rate of deep renovation is only around 0,2% despite high social returns. The average rate needs to be around 3% to reach the existing EU's energy efficiency and climate objectives.

[2] Efficiency in energy, heating and cooling; climate resilience; circularity; renewables uptake, pollution cuts, better health, lower poverty, e-mobility infrastructure, e-solutions for health, schooling and work.

[3] The construction sector is responsible for 9% of the EU GDP and nearly 15 million direct and indirect jobs. The near totality of the value chain is located in Europe. The sector is supporting a wide array of upstream sectors and SMEs hard hit by the covid-19 pandemic. Renovation projects can be unrolled quickly and are estimated to account for about 3-4 million workers with around 60% of expenditure on home energy efficiency retrofits going to labour.

[4] For instance, large-scale insulation, rooftop solar-PV installation, more efficient and renewable heating and cooling systems, water efficiency systems, "circular" materials, nature-based solutions, digitalisation and electric charging points for vehicles.

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programmes. However, to deliver, the latter option would require changes to the CPR to facilitate (rather than obstructs) the blending of ESIF or Member State grants with EU financial instruments. In view of the crucial importance of rapidly designing deep renovation projects aggregating demand and incorporating local energy system changes, [2 billions] will be allocated to the technical assistance window of InvestEU (reinforcing ELENA[5]) and to support activities under LIFE.

Given the recovery needs, the initial efforts will focus on speed, scale and fairness. Accordingly the first initiative to be launched under the new facility will be **an EU NegaWatt Initiative** addressing: (1) public sector buildings, especially hospitals and schools and (2) social housing and other forms of low income dwellings. A pilot scheme will be developed and deployed first with the EIB, followed by other Implementing partners. **EUR [10 + (xx for (b)] billion of public funding under this initiative could mobilize EUR [50 + (xx for (b)] billion in investments**. The InvestEU Programme will deploy specific products allowing public authorities or ESCOs access to financing and refinancing (e.g. through guaranteed loans or purchase of receivables) while blending with grant financing would cover the longer-term investments.

Going forward, the Facility will extend its focus to a wider array of buildings, including offices, farms and privately-owned residential buildings. To target the latter, the Facility will enhance the supply of **green mortgages** allocating **[EUR 5 billion] worth of InvestEU guarantee to mobilise EUR 50 billion in investments** to develop an attractive mass-market financing product for renovation when the property is being purchased or re-financed (for instance through risk-sharing allowing mortgage lenders to cover the costs of building renovation under the same low interest and long-term conditions of the mortgage).

The fundamental objective of the Facility will be to bridge the gaps between the upfront cost of renovation, the accruing of its benefits and the non-monetary nature of some of these. This will require supporting the aggregation of projects from promoters and households (by commercial banks, energy utilities, ESCOs etc.), guarantees to provide confidence to the financial intermediaries by covering the first lost piece of a loan, and grants to close the gap between social and private returns.

The Facility will enable direct access of regional and local authorities to EU grant financing. It will allow for financing schemes like on-bill, on-tax schemes or "Energy Efficiency as a service" models. It will provide incentives for the deployment of "one stop-shop" and district-level solutions with renovation package for homeowners or social housing operators or owners of non-residential build[6]. It will also favour deeper renovation

[5] The European Local Energy Assistance Facility (ELENA) is implemented by the EIB and provides technical assistance grants to public authorities for development and aggregation of local energy efficiency and RES investments.

[6] Examples show that modern deep renovation programmes covering entire communes or urban quarters can be deployed at lower cost and at higher speed, if they are organised under a model. The Dutch Energiesprong project reduced the cost of a net zero energy renovation of a terraced house from €130,000 for the first pilot project in 2010 to €65,000, thanks to economy of scale, 3D-technologies and pre-fabricated materials. On-site work takes only a week, limiting the burden for inhabitants, while increasing

in terms of energy efficiency but also other dimensions such as development of renewables, heating and cooling solutions, climate resilience, circularity, e-mobility infrastructure and digitalisation. As reaping these co-benefits increases the complexity of the underlying projects, the Facility will rely on running and scaling up pilots and on strengthened technical assistance, notably through a renewed ELENA Facility (which could; for instance, cover the costs of energy audits).

To facilitate the uptake of renovation as well as the effectiveness of its new Facility, the Commission will also revise the relevant **state aid rules** by 2021 to provide an enabling framework for public authorities to support high quality renovation while making the most efficient use of limited public funds. Pending the revision, current State aid rules will be applied with flexibility, focusing on a number of areas, which seem crucial to support an increase in the rate and depth of renovation.

their comfort and improving the look of the house. The city of Bottrop reduced the CO_2 emissions of 70,000 households by 50% between 2010 and 2020 through smart innovation and increasing its annual renovation rate to 3%.

ACCELERATION OF RENEWABLES AND HYDROGEN

Further decarbonising the energy sector is a necessity to reach climate neutrality. Following economic stimulus investments after the 2008-2009 crisis, we have seen over the last years rapid growth of renewable energy delivering electricity at a competitive cost to households across Europe. The COVID-19 crisis however is seriously affecting the renewables market: the European solar and wind market is projected to shrink by 20-33% this year respectively, due to supply chain disruptions, project delays and stricter financing conditions.

Without sustained growth of the renewables market, there is no future for clean hydrogen in Europe while sustainable hydrogen technology has a critical role to play in decarbonising the economy. As a carbon free energy carrier, hydrogen would allow for bulk transport of energy over long distances, for storage of large energy volumes and could be used to decarbonize energy use in hard-to-abate sectors such the chemical and steel industry and heavy transport.

Without a stimulus, the energy transition will slow down making an ambitious 2030 climate target difficult to reach. A green recovery package should ensure acceleration of renewable energy projects, especially wind and solar, both local projects at distribution level, as large-scale projects at transmission level, and of cross border relevance. Support action will avoid job losses and present good potential for job creation.

The positive track record of renewables must also continue to support the emerging expansion of clean hydrogen as a breakthrough technology in the European industry. A kick-start of this future industrial ecosystem is needed with a view to large-scale deployment by 2030.

1. Keeping the expansion of renewable energy on track

1.1 Ensuring financial closure of the current project pipeline

Support projects ready for a final investment decision over the next year with EIB support which, as done after 2008, would provide an additional layer of finance and sharing risk.

1.2. Accelerating a pipeline of future projects

- EU Tendering scheme "15GW renewable electricity" in 2 years

A renewable energy acceleration program to support 25% of the market, making up for reduced tenders at MS level, hence 7.5 GW each of the next 2 years[7]; a total capital investment of 25b€[8] for the two years together. With increasing competitiveness of renewables, actual public support would be lower, depending on electricity market prices.

- Supporting national instruments

[7] In 2019, 30GW of solar and wind was built in the EU-28 so 25% means supporting 7.5GW per year.

[8] Estimate based on average investment costs of utility solar, on- and offshore wind investment cost

Additional EU funding as a multiplier for MS funding . If a MS intends to tender a certain amount of capacity in the next 2 years the EU could match the national tender one on one.

This would amount to **€10 billion** over two years, **using EIB co-financing of these projects; supported through EU guarantees (eg. EUInvest).**

2. Kick-starting the scale-up of clean hydrogen

2.1 Accelerating Research and Innovation

More research is needed to reduce clean hydrogen costs, to enhance performance of hydrogen technologies and fuel cells, a main obstacle for hydrogen's large scale use and to retain technological leadership in the face of tough international competition.

- Doubling the amount of the Clean Hydrogen Partnership (Fuel Cells and Hydrogen Joint Undertaking) under the next MFF (currently 650 M€) and strengthened collaboration with other Horizon Europe partnerships in industry and transport e.g. programs to bring hydrogen trucks and shipping closer to commercial viability.
- Delivering in the next 2 years the remaining 40% co-financing of the Innovation Fund (which funds up to 60% of eligible costs) for technologies with high decarbonisation potential (2-4 b€). The Fund can pool together about €10 billion over the next ten years to substantially reduce risks of large/complex projects such as hydrogen ones.

2.2 Scaling up clean hydrogen production: " 1 Million ton of clean hydrogen commitment"

Current EU hydrogen production is 8 Million ton of hydrogen per year (60-70 Mt of CO2, covered in the ETS) and is widely applied in sectors such as fertilisers and refineries, however obtained from natural gas through a highly CO2 intensive process (so-called "grey hydrogen"). For it to become a solution to decarbonize economic sectors, the hydrogen production process needs to be decarbonised. Today, clean hydrogen is substantially more expensive than grey hydrogen (estimates for decarbonised hydrogen from natural gas + CCS indicate a cost of 1.5 -2 €/kg; electrolyser based hydrogen 2.5-5 €/kg versus 1 €/kg for grey hydrogen).

- a "carbon contracts for difference (CCfD)" pilot scheme, similar to tendering systems for renewable power, could pay the difference between CO2 strike price and actual CO2 price in the ETS to bridge the cost gap between conventional and decarbonised hydrogen[9]. Applied at EU or national level; an appropriate state aid framework can be developed (2021 revised State Aid guidelines for energy and environmental protection)

[9] Today, conventional (grey) hydrogen production in industrial sectors (fertilisers, refineries) receives free allocation because the sectors are deemed to be exposed to the risk of carbon leakage.

- Short term priority area for quick results because of existing demand: replacement of existing grey hydrogen production in the fertilizer industry and refineries.

Expected cost reductions of electrolyser based hydrogen depend on further reduction of renewable electricity costs. Assuming clean hydrogen production needs to be supported for the first 10 years, the instrument under the **Innovation Fund** would cost between 5 and 30 billion € in total.[10]

2.3 Work with industry to develop an investment agenda

The Clean Hydrogen Alliance of the Industrial Strategy could bring together different parts of the emerging ecosystem as well as Member States to ensure a solid pipeline of projects.

3. A Green Infrastructure Fund for Renewables and hydrogen

An energy system largely based on delivering interchangeable clean electricity and hydrogen to end-user markets requires major investments in infrastructure to ensure large scale deployment by 2030. Infrastructure investments are needed in areas such as electricity transmission (eg for offshore wind) and interconnectors; smartening/digitisation of electricity distribution networks; hydrogen infrastructure for transport and storage, including fueling stations; CC(U)S infrastructure, including storage sites; adaptation of gas grids for low carbon gases.

The Fund (€10 billion per year) administered by the **EIB**, would have mainly loans with a medium to high leverage factor for electricity grid related investments and a lower factor for other categories. It would increase planned programs under CEF, InvestEU and other planned EU guarantees.

Summary of costs

1) Expansion of renewable energy: €10 billion (2y)
2) Doubling the Clean Hydrogen Partnership: €1.3 billion (MFF)
3) Help kick-Start the Innovation Fund with complementary financing: €2-4 billion (2y)
4) 1 Million ton of clean hydrogen production: €5-30 billion (Innovation Fund)
5) Green Infrastructure Fund for Renewables and Hydrogen: €10 billion (per year)

Besides the short term recovery actions in this note, the Commission's longer term strategic approach on energy and on hydrogen, including ideas for a regulatory framework, will be set out in June, in the ***Energy System Integration Strategy as well as the Hydrogen strategy****.*

[10] Range dependent on the production mix of clean hydrogen

CLEAN & RESILIENT MOBILITY

1. Introduction

Mobility keeps our trade flowing, allows our citizens to discover new horizons and binds our continent together. The mobility ecosystem employs over 50 million people, from automotive to public transport to new urban mobility. At the same time, mobility must decarbonise fast to reach our target of climate neutrality by 2050.

The automotive supply chain consists of 300,000 EU companies, ranging from small repair shops to automotive manufacturing giants, from traditional logistics companies to nimble component suppliers. It represents 12.5% of the EU's manufacturing output, employs 13.8 million citizens (6.1% of EU employment). The EU is the world's 2nd largest car producer behind China. After severe supply disruptions, car production is slowly taking off again. A vital threat to the supply chain comes from the contraction of demand for cars, as incomes and household spending on mobility are squeezed.[11]

Meanwhile, road emissions account for 75% of CO2 emissions in transport and those are growing. Massive support for the automotive industry will put significant debt on future generations. That support must respect our youth's expectations on climate change and for a healthier and cleaner future. This is possible with a win-win proposition: smart incentives can help the sector to produce and sell clean cars, and innovation support can set it on the pathway to zero-emission mobility. Investments in charging infrastructure and upskilling and reskilling of workers could facilitate the transition.

Our Union must however also deliver for citizens who rely on public transport to get to work. Once it picks up in safe manner, public transport will remain a daily ritual in the lives of millions of citizens. The underlying European rail supply chain occupies 4,5000 companies and employs 1.2 million people. These companies produce cross-cutting technologies for our trains, buses, trams and metros. Europe is a winner in this field: it leads with a 50% worldwide market share but faces increased competition from China. A boost to public transport can retain this leadership. The 2008 crisis showed that slow public spending in rail and public transport could consist for years. Smart support for clean public transport can secure jobs in the supply chain and allow cities to move citizens around once normal life returns.

At the same time, COVID-19 was an opportunity for cities and regions to reinvent the way in which residents move around. Cities across Europe gave their space back to bikes, erected pop-up cycling lanes and hubs linking bike sharing services with public or individual transport. In the recovery phase, this novel type of urban mobility – a priority of EU cohesion policy- deserves a fresh impetus.

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[11] Moody's forecasts a 25% drop in new car registrations in 2020. Losses are estimated at 1.5 million vehicles on total of 19 million vehicles produced in 2018, posing major risks to employment

2. Automotive

An investment plan for automotive could evolve around: (i) a boost for demand for cleaner cars; (ii) investment support for the green and digital transitions, (iii) a reinforced roll-out of charging infrastructure and (iv) a dedicated social fund to reskill and upskill workers during the transition.

2.1 Financing and needs

- An EU-wide **Purchasing Facility for Clean Vehicles**, that reduces CO2 and pollutant emissions in line with EU standards. The Facility would amount to **20 billion euros** in the next two years, consisting of XX billion euros in guarantees under InvestEU and XX billion euros in grants from the Connecting Europe Blending Facility, (housed by the EIB);
- A **Clean Automotive Investment Fund** of 40-60 billion euros, combining InvestEU and Horizon Europe windows for green mobility, to accelerate the investments in zero-emission drive trains;
- A doubling of the **EU investment package for Recharging EU**: 2 million public charging and alternative refuelling stations by 2025,[12] building on existing CEF and InvestEU instruments.

2.2 Regulatory relief actions

Change the VAT Directive with VAT exemptions for zero emission cars. Accelerate the Battery Directive and revised Alternative Fuels Infrastructure and Building Directives to roll-out charging infrastructure.

3. Rail

The COVID-19 crisis will change European mobility habits. The aviation sector will undergo restructuring, making reductions of short-haul flights likely and a shift to high speed train connections necessary. The crisis showed that for freight to move, transport must function as a system, shifting freight to rail and allowing transport modes to work together. In this new reality, Europe needs a Renaissance of Rail.

3.1 Financing and needs

- A **Renaissance of Rail Investment package of 40 billion euros**, based on frontloaded Connecting Europe Facility and Cohesion Funding (Rail Windows) and increased co-financing rates. Financing should focus on key corridors where passengers and freight can shift to rail. Investments in the modernisation and digitisation of rail tracks delivers quick wins for jobs.
- An **InvestEU-backed programme of XXX billion euros for the changeover of rolling stock. Eurofima** facilities for second hand wagons can bring **night-train services back in Europe.**

[12] A fast charger costs up to EUR 40.000 and a hydrogen refuelling station EUR 3 million.

3.2 Regulatory relief actions

Streamline approval procedures for new rail investments. Boost railway services with reduced track access charges and targeted regulatory changes to Passenger Rights rules to make finding an online international train ticket as easy as booking a flight (build a European RailScanner next to SkyScanner).

4. Urban mobility

A recovery package for mobility can unleash the potential of **the Urban Mobility Windows in Cohesion funding and InvestEU.** This could bring new cycling infrastructure to underserved corners of Europe, mobility as a service solutions to cities combining cycling, public and individual transport in one offering and clean transport-on-demand services to remote regions.[13] Europe could also support cities and regions that were planning to renew and decarbonise their public transport fleet by giving financial backing for these projects, securing essential jobs in our leading rail supply chain.

4.1 Financing and needs

New funds or increased flexibilities in the Urban Mobility Window of EU funding could generate 20 billion euros to give this novel urban mobility a boost. An increased EU co-financing rate in the Common Provisions Regulation for cohesion and transport funding could generate a big part of the funds needed.

[13] An example is a hydrogen or electric "community bus" to connect remote rural areas.

STRENGTHENING THE FOUNDATION OF CIRCULAR ECONOMY

modernisation of the waste management sector as part of the EU recovery plan

The coronavirus crisis has amplified the message of the European Green Deal on the importance of investing in economic sectors and infrastructure with direct positive impact on human health and environment, and of ensuring resilient provision of environmental goods and services.

Due to the crisis, one of these important services - the proper functioning of separate waste collection, sorting and recycling - has been put to the test, and so has the production of high quality secondary raw materials. This means that the foundation of circular economy is destabilised, and therefore also one of the main pillars of the European Green Deal. While the disruptions in waste collection and shipment are expected to be temporary, the recycling industry is impacted by the overall economic downturn, affecting the demand for their products. For instance, specific concerns have been raised by plastic recyclers, who have seen their markets threatened by the lower prices of virgin polymers due to falling oil prices.

This poses a serious danger to EU's objective to create a fully functioning circular economy, to increase EU's resilience and to lower EU's dependency on primary raw material imports. It also threatens EU's capacity to deal with its own waste, which is as important as ever also due to waste import bans imposed by China and a number of other countries. Moreover, it puts at risk the implementation of EU waste legislation that sets the world's most ambitious targets on recycling of municipal and packaging waste with a 2025, 2030 and 2035 horizon.

In order to create sustainable jobs and growth as part of the EU's economic recovery and guarantee the viability of one of the main pillars of the European Green Deal – the transition to a circular economy, it is crucial to direct fresh investments to the waste management sector, in particular to the collection, sorting and recycling technologies and infrastructure, with the view to ensuring the supply and uptake of high-quality secondary raw materials.

Currently the waste management sector feeds back in the economy only 12% of all the materials consumed in the EU. Regarding plastics for example, despite constantly increasing amounts of plastic waste, the demand for recycled plastics accounts for only around 6% of the overall plastic demand in the EU.[14] This is next to nothing to match the ambition of the European Green Deal and the new Circular Economy Action Plan. As a

[14] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&uri=COM:2018:28:FIN

result of the crisis and without required investments, the circular material use rate may even decrease.

On the other hand, **the scope for producing high quality secondary raw materials and integrating these recycled materials into new products is significant, offering notable economic and job opportunities.** The employment in the waste sector reached approximately 1.15 million jobs in 2017, growing by 35% in the last fifteen years[15]. Smart fresh investment, combined with ambitious policy measures as already announced in the **Circular Economy Action Plan,** can drive further expansion of the sector and offer jobs for different skills. For instance, achieving ambitious targets in municipal waste management, as agreed at the EU level, can add 140 000 jobs to the employment in the sector in the coming fifteen years[16]. For the textile sector, around 20 jobs could be created for every 1000 ton of textiles collected and sorted, adding up to 120 000 jobs in the EU. 15 jobs and 110 training opportunities could be created for every 1000 ton of electrical and electronic equipment waste collected and sorted. EU-wide, this could amount up to 90 000 jobs. Overall, increased recycling of all waste streams is, in the short to medium term, expected to be labour intensive.[17] Digitalisation of waste sector, technological developments and research and innovation projects would further add to the number of jobs and also have the potential to make EU the world leader in 21 century waste management for a circular economy.

To capitalise on this and reach the ambition of the European Green Deal, the EU has to step up its investments in waste treatment capacity. The investment gap for the full implementation of EU waste legislation for recycling municipal and packaging waste has been estimated at approximately €17 bln[18] for the period of 2021-2027 (this amount covers municipal waste management, collection, sorting and the recycling of municipal plastic and biowaste). Increased ambition in recycling of plastics other than packaging will add €4 bln to this investment gap. Further investment would be needed in the recycling of batteries, textiles, furniture, commercial and industrial waste, and construction and demolition waste in line with the high ambition set in the European Green Deal. The investment gap to improve the reuse and recycling of all waste could be as large as €9-10 bln a year at EU level.

In addition to building new infrastructure and developing new technologies for collection, sorting and recycling of different waste streams, the waste sector will need to undergo massive digitalisation in order to ensure that it produces the high-quality valuable materials that the EU economy needs. Digitalisation will benefit the whole waste treatment chain – frm waste collection, where it can bring significant quality and efficiency improvements, to new digital sorting technologies and ensuring the traceability of materials from products to their recycling phase.

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[15] http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_egss1&lang=en

[16] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015SC0259

[17] https://ec.europa.eu/environment/enveco/circular_economy/pdf/studies/Annexes.pdf, p 154.

[18] see https://op.europa.eu/en/publication-detail/-/publication/4d5f8355-bcad-11e9-9d01-01aa75ed71a1

Investments are relevant for all Member States but countries with the biggest gaps are also those that are at risk of not meeting the mandatory targets for recycling 50% of municipal waste by 2020 laid down in EU law: BG, CY, EE, EL, ES, FI, HU, HR, LV, MT, PL, PT, RO, SK. In the three previous financing periods, the EU budget has been supporting investment in waste management with around €5 bln per financing period (2000-2006, 2007-2013 and 2014-2020). While the future budget allocations are not clear yet, it is expected that even after the intervention of the EU budget, a significant investment gap will remain to make EU's waste management sector fit for the circularity transition and match the European Green Deal ambition.

RESILIENT FOOD CHAIN AND RECOVERY

EU agriculture and food chain have been affected by the pandemic and the lockdown measures in very different and heterogenous ways in comparison to other industries. Overall, the crisis has shown that agriculture needs to increase its resilience, especially when it comes to diversifying farmers' incomes and portfolio of activities. After all, only farming farmers can ensure food supplies to Europeans and continue providing high value added food to many parts of the world.

The **Farm to Fork Strategy** will lay down in detail how to turn European food into the global standard of sustainability in medium and long term. By promoting environment and climate friendly investments and practices, this recovery package is an opportunity to accelerate the transition to a sustainable and resilient food chain immediately and to creating a healthy environment with cleaner air, less water and soil pollution and with a positive impact on biodiversity. This is an opportunity to increase farmers' incomes, improve quality of life and work in rural areas, create jobs and help decarbonize other sectors.

1. Digitizing agriculture and rural areas

Fast internet is a key enabler for job and business creation in rural areas, as well as for improving quality of life in areas such as healthcare, entertainment, and e-government. As such, investments are needed to deploy next generation broadband in all rural areas in the EU where almost a half of households are not covered by these services (2018 data). This is an opportunity to kick off a digital revolution in agriculture as well as in rural areas. With fast and reliable connection, farmers will have better access to advisory services and to online courses guiding them through a transition to more sustainable and more lucrative practices. Access to fast broadband will be an enabler for investments into precision farming which has to become accessible to all farmers. EU will be able to fully exploit its global leadership in satellite technology. This will result in a cost reduction for farmers, improve soil management and water quality, reduce the use of fertilisers, pesticides and GHG emissions, and create a healthier environment for biodiversity, farmers and citizens.

With the overall investment need of EUR 130 billion for the development of adequate broadband in rural areas and EUR 35 billion for the digitalisation of the agri-food sector over the next two years, the following investments should be prioritised (via CAP/new fund):

- Infrastructure, especially in rural areas facing market failure
- Digital technologies to exploit the EU's technological lead in satellite technology
- Investments in on-farm diversification

2. Investing in bioeconomy and carbon sinks

Almost three quarters of the EU is covered by forests and agricultural land, one third of the agricultural land is constituted by grassland. European agriculture therefore has an enormous capacity to store carbon. We need to boost investments in creating these sinks and progressively turn the carbon capture into a functioning green business model by developing an EU Carbon Farming Programme. This will provide farmers and foresters with additional income and enable management practices with a lower environmental footprint. At the same time, such programme has the potential to help decarbonise other sectors.

With the investment need of at least EUR 14 billion into carbon sinks such as EU forests, peatlands and soils over the next two years, the following investments should be prioritised (via CAP/LIFE/new fund):

- Afforestation with the objective to plant 3 billion trees by 2030
- Peatland restoration with the objective of reducing 50Mt CO2 per year
- Soil management, such as nitrogen fixation, with the objective of saving 9 Mt CO2
- Conversion to agro-forestry with the objective of 2.6 million hectares.
- Launch of the EU Carbon Farming programmes with pilot projects in at least 40 regions

3. Farming as a source of renewable energy

Methane is the second most important greenhouse gas, after CO2, accounting for nearly one fifth of the global greenhouse effect. In the EU, livestock production produces more methane than all other sources combined. Farmers should grasp opportunities to reduce methane emissions from livestock by investing into anaerobic digesters for biogas production. In addition, farms have a potential to produce biogas from other sources of waste and residues, such as food and beverage industry, sewage, wastewater and municipal waste. Farms and agricultural land also have a huge capacity to produce solar, wind and biomass energy as well as to store such energy. Thus, European farmers also have a potential in the production of renewable energy, as long as these investments are carried out in a sustainable manner and without compromising food security.

With the investment needs of EUR 4 billion over the next two years, the following investments should be prioritised:

- Optimal use of waste and residual streams for biogas production with the objective to increase the production of biogas or biomethane by 15 mtoe by 2030.
- Energy crops for production of advanced and sustainable biogas and biofuel with the objective to provide about 5 mtoe of sustainable bioenergy feedstock by 2030.